

Birla Central Library

PILANI (Rajasthan)

Class No. - 330.063

Book No. - D888E

Accession No. - 38262.





**ECONOMICS WITH APPLICATIONS
TO AGRICULTURE**

ECONOMICS
WITH
APPLICATIONS TO AGRICULTURE

By

EDWIN F. DUMMEIER, Ph.D.

*Late Professor of Economics, School of Business Administration
The State College of Washington, and Agricultural
Economist in the Washington Agricultural
Experiment Station*

RICHARD B. HEFLEBOWER, Ph.D.

Professor of Economics, Northwestern University

and

THEODORE NORMAN, Ph.D.

*Formerly Head Agricultural Economist, Food Distribution Administration
United States Department of Agriculture*

THIRD EDITION

McGRAW-HILL BOOK COMPANY, INC.

New York • Toronto • London

1950

✓
330.063

D888 E

38262

C/66

ECONOMICS WITH APPLICATIONS TO AGRICULTURE

Copyright, 1934, 1940, 1950, by the McGraw-Hill Book Company, Inc. Printed in the United States of America. All rights reserved. This book, or parts thereof, may not be reproduced in any form without permission of the publishers.

C186

CP

C 27

1287

PREFACE TO THE THIRD EDITION

Three objectives were followed in revising this book after ten years of dramatic political and economic events. One was to distill from these developments institutional changes and modifications in public policy which seemed important and lasting. Secondly, it was also felt desirable to clarify some parts of the exposition and to bring it abreast of the literature in the field. Consequently the chapters on production and value theory and on monetary and cycle theory were extensively rewritten. Finally, the factual information was brought up to date as far as practicable. In a few cases where a point was well illustrated by the older figures and comparable recent data were not available, the older series was retained.

Because of the decease of Dr. Dummeier and the duties of the undersigned which occupied his time fully, this revision would not have been possible had not Dr. Theodore Norman undertaken the task. Although the plans for the revision represented joint thought, the execution of those plans fell on Dr. Norman. Fortunately his broad training in economics and his experience in research and in government service related to agriculture have given him a deep understanding of that industry as part of the American economy.

R. B. HEFLEBOWER

EVANSTON, ILL.

December, 1949

ACKNOWLEDGMENTS

It is a pleasure to acknowledge the help of the following in the preparation of this third edition: Lucy Jennis, who transcribed a difficult manuscript; Pauline Lerner, who searched out many of the facts and figures necessary to bring this edition up to date; Edward Karpoff, who offered useful suggestions on many points; the numerous users of the book whose remarks and criticisms were extremely helpful; and lastly Jane P. Norman, who not only assisted in preparing the manuscript for the printer but who drew a great many of the charts.

R. B. H.
T. N.

PREFACE TO THE FIRST EDITION

Economic principles must be abundantly illustrated and effectively related to current economic problems if they are to be understood and retained by the average college student. Such principles cannot be successfully taught as mere abstractions. The above conclusions of the authors are based on the experience of a number of years in teaching economics to college classes, including special groups in the agricultural curriculum. This book is partly the result of an effort to assist in putting these generalizations into practice. Recent years have furnished large additions to our statistical and other factual information about economic affairs. They also have brought forth large increases in the social control of business activity, although the degree of permanence of much of this control is as yet uncertain. The authors have attempted in this volume to show the relation of the principles of economics to recent and current economic events in a more concrete and effective manner than has been done in earlier textbooks.

The book was begun with the object of supplying a text which would present the generally accepted principles of economics clearly, thoroughly, and comprehensively, and which also would apply these principles to the present-day problems of agriculture. It was undertaken specifically to meet the apparent need for a thorough and up-to-date text for courses which are given in many educational institutions, especially the land-grant colleges, with catalogue descriptions such as "The fundamental principles of economics in application to agriculture," or "Forces and institutions of modern society with special reference to agriculture; relation of cost, supply and demand to price." That objective has been retained throughout. At the same time it has been continuously recognized that there is not one set of principles of economics applicable to agriculture and another set to other economic activities. The principles of economics are broader than any industry, and the impact of economic forces on a single industry may well illustrate to a large extent the working of these forces in general. Furthermore, the well-being of the agricultural population concerns others than those directly employed at agriculture. These facts lead the authors to hope that the book may be found suited to general courses in economics in an environment in which agriculture is important, or in situations in which the instructor wishes to develop the principles of economics through the problem method of approach. The text develops economic principles in a search for an

answer to the question: How can the economic well-being of those engaged in agriculture be best promoted without unjustifiable interference with the welfare of other parts of the population? Although this is the chief problem set for the student, the authors, incidental to furnishing the student assistance in finding the answer to the major problem considered, have attempted to give a thorough and well-balanced description and analysis of the whole economic system.

Issues on which there is much controversy, even those on which recognized economists are not in agreement, have not been shunned. On controversial issues the authors have generally, in so far as possible, stated their own conclusions, and the reasons for these conclusions; at the same time they have tried to acquaint the student with other points of view. Incidentally, an effort has been made to introduce the reader to some extent to the development of economics as a science, to call his attention to outstanding economic literature, and otherwise to broaden his knowledge.

The book is larger than most of the available introductory texts on agricultural economics. This may necessitate the omission of some entire chapters in courses for beginners in which the whole subject is covered in one quarter or in one semester with less than four class-room hours per week. Whole chapters dealing with special problems in the latter part of the book may be omitted without interfering with the unity of the treatment. If it is used in a short introductory course not all students may master certain of the more difficult points which are mentioned, but this should not be confusing. An effort has been made to present major points in strong perspective—to emphasize them so effectively, even by some conscious repetition, that they will be mastered by the ordinary college student—and at the same time to raise difficult questions in such a manner as to interest the more brilliant student. With some supplementary reading from the works recommended at the end of each chapter, or from sources selected by the instructor, the authors believe that the text will be found adapted to courses which are of an advanced nature, or which extend through more than one term or semester.

Less space is devoted to farm management and marketing than is devoted to these subjects in most texts on agricultural economics. This is for the reason that most students in the agricultural curriculum take special courses in these subjects. On the other hand, both subjects are treated briefly, and the inclusion of a special chapter on marketing devotes more attention to that important economic activity than is given to it in most general texts on principles of economics.

Though the book was written primarily for use as a college textbook, the authors hope that it may have a favorable reception by persons outside of colleges who are interested in the problem of agricultural well-being. It attempts to consider most of the important economic forces

related to agricultural welfare, rather than only a few, as is the case with many of the books which treat that problem.

As to authorship, we shall say that this is not a textbook of the kind on which appear the names of two persons, one of whom has done nearly all of the work. In thought and labor the two writers have contributed in not greatly different amounts, and the book is thoroughly a joint product. Neither of the authors could have written the volume as it is without the assistance of the other.

Among those who have read parts of the manuscript, and to whom the writers feel indebted for valuable suggestions for its improvements, are the following: O. B. Jesness of the University of Minnesota; M. N. Nelson of Oregon State College; W. P. Thomas of Utah State Agricultural College; Joseph S. Davis and Eliot Jones of Stanford University; S. J. Coon and Howard H. Preston of the University of Washington; E. T. Grether of the University of California; Erwin Graue and Harold A. Vogel of the University of Idaho; David L. Wickens, V. N. Valgren, L. H. Bean, Byron Hunter, Neil Johnson, and R. I. Nowell of the U.S. Department of Agriculture; Charles W. More of the Wenoka Credit Corporation, Seattle; and our associates, G. F. Cædisch, F. W. Clower, C. D. Jacobs, N. J. Aiken, H. M. Chambers, Rex Willard, E. F. Landerholm, C. C. Hampson, and C. R. Niswonger of The State College of Washington. To Harold A. Vogel, N. J. Aiken, and F. W. Clower we are especially grateful for using in their classes a preliminary draft of much of the material in mimeographed form, and giving us the benefit of their suggestions for improvement as a result of such use. The authors, of course, are solely responsible, "jointly and severally," for whatever defects the book may have.

EDWIN F. DUMMEIER
RICHARD B. HEFLEBOWER

THE STATE COLLEGE OF WASHINGTON
PULLMAN, WASHINGTON
August, 1934

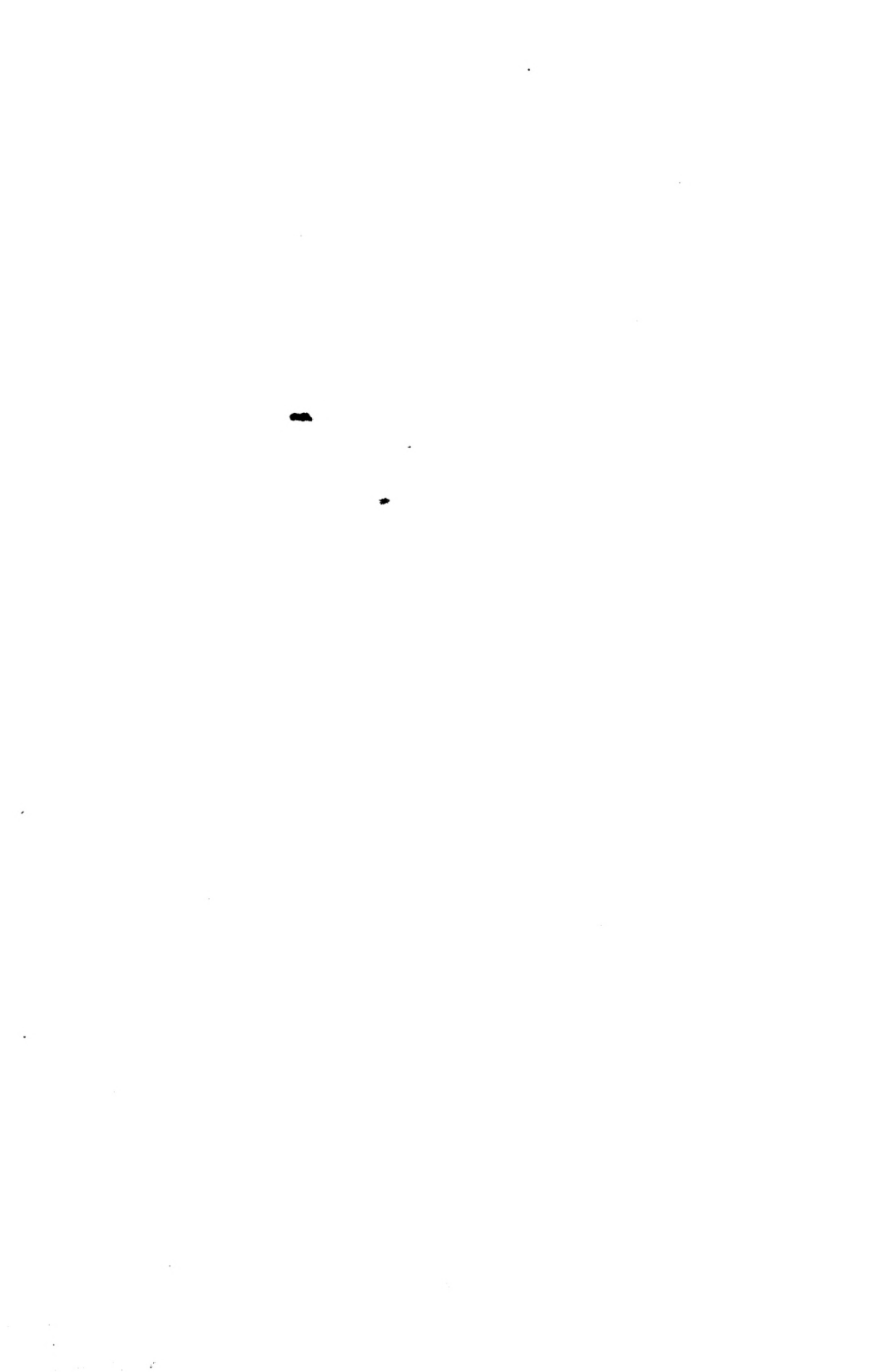


CONTENTS

PREFACE TO THE THIRD EDITION	v
ACKNOWLEDGMENTS	vii
PREFACE TO THE FIRST EDITION	ix
CHAPTER	
1. ECONOMIC PROBLEMS OF AGRICULTURE	1
The Subject Matter of Economics—Development of Economics—Agricultural Economics—Occupations and Income—The Point of View of this Book	
2. THE EUROPEAN BACKGROUND OF MODERN ECONOMIC LIFE	27
Early Economic Life—Evolution of the Modern Economy	
3. AMERICAN ECONOMIC DEVELOPMENT	44
Beginnings of Specialization—Transportation and the Westward Movement—Agricultural Improvements in the United States—Urban Industrial Development—The Growth of Organized Labor—The Institution of Private Property—The Direction of Economic Evolution	
4. PRINCIPLES OF PRODUCTION AND COMPARATIVE ADVANTAGE	70
The Approach to Economics—Economic Concepts—Production—The Principles of Comparative Advantage	
5. THE LAW OF DIMINISHING RETURNS	95
Increasing Efficiency in Production—Diminishing Returns in the Individual Enterprise—Least-cost and Highest Profit Combinations	
6. BUSINESS ORGANIZATION—THE PLACE OF THE GOVERNMENT	126
Entrepreneur Organization—Cooperatives—Financial Statements—Profits, Cost, and Prices—Control of Production—The Government's Place in the Economy	
7. FARM ORGANIZATION	149
Selection of the Grades of Factors of Production—The Size of the Farm or Farm Business—The Coordination of Farm Enterprises—Price Outlook, Budgeting, and Cost Records—The Efficiency of the Farmer	
8. EXCHANGE VALUE AND THE MARKET	175
Value in Economics—The Market	
9. DEMAND, SUPPLY, AND MARKET PRICE	192
Demand—Market Supply and Market Price—Demand Further Considered—The Statistical Analysis of Demand—Market Supply Further Considered	
10. THE ADJUSTMENT OF THE INDIVIDUAL FIRM	219
Competitive Equilibrium—Kinds of Cost—Demand and Cost Changes—The Response of Supply to Price for Particular Products	
11. MONOPOLY AND MONOPOLISTIC COMPETITION	239
Types of Monopoly—Monopolistic Competition and Oligopoly—Principles of	

Price Determination in Monopolistic Situations—Effects of Limiting Competition—Monopolistic Methods—Monopoly Regulation and Control	
12. MONOPOLY AND AGRICULTURE	267
The Farmer as a Monopolist—The Farmer and Monopolistic Industry—Attitudes toward Monopoly	
13. MONEY AND CREDIT	282
Principles of Money—Banking Principles—Banking System of the United States	
14. PRICE-LEVEL MOVEMENTS AND AGRICULTURE	310
The Price Level and Its Measurements—The Value of Money—Movements of the General Price Level—The Effects of Variations in the General Price Level—Price-level Stabilization	
15. LABOR AND WAGES	332
Distribution Theory—Types of Wages—The Supply of Labor—Wage Groups—The Marginal-productivity Theory—Social Control of Labor and Wages—Characteristics of Wage Movements	
16. CAPITAL AND INTEREST	362
The Nature of Capital—Theories of Interest—Interest Rates—Statistics on Savings and Investment	
17. LAND RETURNS AND LAND VALUES	384
The Ricardian Theory of Rent—Criticisms of the Ricardian Theory—Land Incomes and Land Values in the United States	
18. RISK, RISK BEARING, AND PROFIT	411
The Elimination of Risk—Risk Transference: Insurance—Risk Transference: Hedging—The Theory of Profit	
19. INTERNATIONAL TRADE AND AGRICULTURE	438
Foreign Trade of the United States—Technique of International Payments—The Balance of International Payments—The Balance of Trade	
20. GOVERNMENT CONTROL OF FOREIGN TRADE AND THE FARMER	466
Tariff Arguments—Protection or Free Trade—The Effect of Trade Restrictions on Agriculture—The Future of United States Foreign Trade	
21. TAXATION AND THE FARMER	488
Revenue Principles and Systems—The Burden of Farm Taxes—Changing the Systems—Government Borrowing	
22. TRANSPORTATION AND OTHER PUBLIC-UTILITY PROBLEMS	512
Magnitude of Transportation and Other Public-utility Industries—Railway Transportation—Water Transportation—Highway Transportation—Transportation and Public-utility Problems	
23. MARKETING AND COOPERATION	532
What is Marketing—Typical Marketing Costs—Retailing Costs—Cooperative Marketing—Programs for Improvement	
24. AGRICULTURAL CREDIT	555
Credit and Debt in General—Amount and Distribution of Farm Debt—Government-sponsored Agricultural-credit Agencies—The Federal Land Banks—	

	Federal Intermediate-credit Banks—Production Credit—Other Government Agencies Furnishing Credit to Agriculture—Desirable Credit Practices	
25.	LAND UTILIZATION	581
	The Present and Potential Uses of the Nation's Land—The Problem of Sub-marginal Use—Contents and Operation of a Land-use Program	
26.	RURAL AND URBAN PROSPERITY	601
	Farm and City Incomes—Are Farm and City Prosperity Necessary to Each Other	
27.	THE FARM PROBLEM AND THE GOVERNMENT	612
	The Basic Issues—Farm Relief until 1933—The Agricultural Adjustment and Soil Conservation Acts—Questions of Agricultural Policy—Proposals under Consideration—Conclusion	
28.	BUSINESS CYCLES AND DEPRESSIONS	633
	The Nature of Business Cycles—What Causes Business Cycles—Controlling the Business Cycle	
29.	ECONOMIC CONTROLS IN THE UNITED STATES	665
	Developments Leading up to the New Deal—General Character of the New Deal—The Recovery Program—The Reform Program—After the New Deal—Problems of Social Control	
30.	CAPITALISM AND ITS CRITICS	686
	Criticism of Capitalism—Merits of Capitalism—Proposed Alternatives—Evaluation of Proposals	
	INDEX	705



CHAPTER 1

ECONOMIC PROBLEMS OF AGRICULTURE

Specialization in Modern Life. When we awake in the morning, dress, eat breakfast, go to school, or ride in a car, we would, if we bothered to think about it, realize that the many objects we eat or use during even the first hour of the day are the products of a vast network of activity on the part of innumerable individuals. A farmer planted and harvested the corn that went into our cornflakes; he sold it to an elevator operator, who arranged for transporting it to a mill, which had bought the corn directly from the elevator or obtained it indirectly through a broker. After the corn is made into flakes, a fairly complex process in itself, the miller sells it to a wholesaler and arranges for its retransport by rail to the wholesaler's warehouse. From the wholesaler it goes to the retailer by truck, and the retailer may deliver it to the consumer's home, again by truck. The same general course of processing is followed for all the other commodities—the eggs, the bacon, the furniture, the car, the oil, the gasoline—that we consume or use in the breakfast hour and at all other times.

It is clear that each step in the process of producing objects and getting them to consumers is performed by individuals or groups of individuals who devote themselves to one line of activity. Therefore it is commonplace to say that modern economic life is based on specialization, so much so, indeed, that the United States Census lists about 25,000 occupational designations.

It is clear, on reflection, that if each man (or organized group of men) devotes himself to the production of one sort of good or to one particular step in the process of producing that good, in order for the specialized producer to obtain the multitudinous things the modern consumer needs, there must be an infinite number of exchanges between specialists. Each one trades part of his product for a product made by the others. In very crude but nevertheless real terms, a man who grows a thousand bushels of wheat a year trades a hundred bushels to the builder of his house for rent, twenty to the makers of clothing for a suit, fifty to the livestock producer for his meat, and so on.

Not only is production, as we ordinarily use that term, broken into several steps, but transporting, communicating, and marketing agencies

—specialists all—are involved in placing goods into the hands of the customer. Then all the professional, personal-service, governmental, and amusement occupations involve specialists, whose services we all use, though they are not so directly related to the supplying of the commodities we consume.

The specialists cooperate to supply us with a list of commodities and services which is constantly growing both in quantity and in variety. Each specialist is dependent on others for raw materials, for capital, and for labor and, in turn, is dependent on others to buy his product or service. Each specialist sells his products to others and uses his purchasing power to buy the commodities and services he wishes for producing or consuming. Thus the mutual dependence of specialists leads to cooperation, although the specialists may be unconscious of working together.

Agriculture in the Commercial Economy. Since so much of our consumption is of food, fiber, and other objects, like certain plastics, derived from farm products and since farmers, in turn, are the buyers of so many things made by nonfarmers, agriculture is clearly part of this system of specialized production and exchange. Modern agriculture is more than a way of living; it is a business, but because it is still a way of living as well, it is a business of a very particular kind, deserving of separate study.

The extent to which the agriculture of the United States is involved in the general commercial economy may be judged from the fact that less than 10 per cent of the value of farm products produced in this country, excluding that fed to livestock, is consumed on farms. About 90 per cent is for sale.

The fact that production in agriculture today is so largely for sale rather than for direct use is expressed by the saying that agriculture is commercial—that is, based upon buying and selling. It has also been expressed by the saying that today the farmer lives in a marketing economy or an exchange economy.

What are the forces that govern the prices farmers receive for the products offered for sale, and the forces that govern what they pay for the commodities and services they buy? How can farmers either individually or collectively—in the management of their business, in their position on political issues, or in other ways—best take advantage of prices and price-making forces and thus improve their incomes and standards of living? These questions constitute the chief economic problems of agriculture. The object of this chapter is to furnish explanations and illustrations of the kind of subject matter with which we shall be concerned in our study of economics with particular application to agriculture.

THE SUBJECT MATTER OF ECONOMICS

Definition of Economics. Economics as a science is not easy to define. It has at times in the past been defined as the science which deals with the "activities of man which are directed to securing a living." Another definition is "the science of wealth." These and many other definitions are vague and inaccurate. They are of value in that they correctly indicate that economics deals with material things of life rather than with its spiritual, aesthetic, or other nonmaterial phases, but they do not really limit and define the subject matter. A more precise definition would be: *economics is the science which treats of those social phenomena which are due to the activities of man in producing, acquiring, and using material goods and services.* That it treats of social phenomena indicates that economics deals with the activities of man not as an isolated individual but in his relationships to his fellowmen. Economics is thus a social science rather than a natural or physical science such as zoology, botany, physics, or chemistry.

Basic Problems in Economics. Besides definition, another and perhaps better way of obtaining insight into the scope of economics is afforded by outlining the problems with which it deals. The most important of these is the problem of so utilizing labor, natural objects such as land, machines and other man-made objects, and executive ability—these four are usually called the factors of production—that the maximum amount of commodities and services desired by consumers will be produced. It may be remarked, incidentally, that in economic literature, organizing or executive ability goes by the name of entrepreneurship.

From the point of view of an economy of specialization, as ours is, the problem of utilization is largely one of deciding on the appropriate specialty for the productive factors. Thus, a man with skilled hands, steady nerves, and ability to understand complex interrelationships should become a surgeon and not a ditch digger, and the Bridgehampton loam of Long Island, with its special qualities of porosity and acidity, should be used for potatoes, not fruit trees.

Allied is the problem of keeping men and productive resources fully employed. This does not necessarily mean continually employed. At times certain fields should stay fallow, while leisure and recreation make men more productive.

The third great economic problem is that of dividing the product of economic activity among the agencies or individuals who have contributed to that production. Shall all men receive the same income regardless of who they are or what they do? Or shall they be paid in proportion to what they have produced, in proportion to their needs, or perhaps, in accordance with inherited position?

In the simplest terms, these three problems may be stated in the form of two questions: How can productive factors be fully employed in producing those things and services most desired? What is the best way of distributing what is produced?

The Boundaries of Economics. It should be noted that economics does not concern itself with the utilization of *all* productive elements or with the distribution of *all* possible objects. For if certain resources—sunlight and air are examples—are so abundant that anybody can use as much of them as he wants either for producing other things (as air is used in any number of mechanical or chemical processes) or for their own sakes, then no economic problems arise. But beyond the two named, there is hardly anything that exists in nature in sufficient quantity to satisfy fully men's wants directly or indirectly through what can be made from them. This fact is responsible for the existence of the problem of how best to utilize resources that are insufficient relative to man's wants and desires. Since everything wanted cannot be produced, we should choose to make what is most wanted. Analyzing the reasons why one object is produced rather than another is one of the essential tasks of economics. Since everyone cannot get everything he wants there arises the further problem of how to distribute what is produced, how to decide what and how much each recipient shall get.

Economics then tries to explain why few Rolls-Royces but many Fords are manufactured, why much wheat but few avocados are grown; in other words, why ample resources are turned to the production of some objects and not others. It also tries to make clear how it happens that one man has a Rolls-Royce, another a Ford, and another no car at all. Speaking in more general terms, economics tries to analyze how the choices (necessitated by the relative scarcity of wanted items) are made as to the utilization of productive resources and the distribution of goods. Note that economics does not attempt to explain *why* the choices are what they are. If men prefer guns to butter, and women long skirts to short skirts, the explanation is to be sought in other social sciences, psychology, anthropology, or sociology. Nor does economics judge of the wisdom of the choices, which is a matter of physiology, morality, or aesthetics. Economics takes men's material wants as given and tries to explain how those wants are satisfied.

Economics and Public Policy. This neutrality of the economist in the face of ethical or aesthetic choices has been employed to justify the position of a group of economists who believe that, since the science is purely descriptive and analytical, it is not the business of the economist to give advice concerning national policy. But if it is not the economist's province to give moral or political advice, he can still give economic

advice. In the words of Eric Roll, a well-known historian of economic theory,

There are certain economic objectives about which a large measure of agreement can be reached. The achievement of full employment, the avoidance of violent fluctuations in economic activity, the establishment of a greater degree of economic equality—all these aims . . . would command the approval of the . . . community. The economist should be able to show how these aims can be reached.¹

The objectives of public policy, in the attainment of which the economist can and should be of assistance, have also been set forth by Dr. Harold Moulton, president of the Brookings Institution.² He puts these objectives as follows:

1. A progressively increasing national income.
2. A progressively wider distribution of the goods and services produced.
3. A system of remuneration which rewards everyone according to the work he performs, though one which also provides everyone with at least enough to live on.
4. Economic security for all.
5. An economic system which permits full development of the individual and free choice in economic affairs.
6. Opportunity for every capable individual to earn his own income.

It may be the business of the physician, the philosopher, the politician, or the common man to say whether men should work to produce guns or butter, wheat or opium, more material objects or the opportunity for leisure, but it is the business of the economist to point out how the chosen object can be best attained.

Four Aspects of Economic Life. The basic economic problems are deciding what to produce, producing it efficiently and abundantly, and distributing satisfactorily what is produced. The activities in which men engage in their attempt to meet these problems are traditionally divided into four categories: production, exchange, distribution, and consumption. When the term *production* is used in economics, thought it has the same general meaning as in ordinary usage, it is intended to cover a much wider range of activities than is commonly thought. It includes the performance of all useful and desired services, even personal services such as those of the physician and teacher. It includes the performance of transportation and marketing services, which in the business world are quite generally referred to as processes of distribution. Even economists fall into the use of everyday language and speak of the production of a

¹ *A History of Economic Thought* (Prentice-Hall, 1942), pp. 553–554.

² In his book *Controlling Factors in Economic Development* (Brookings Institution, 1949).

commodity and of its storage, transportation, or other phases of marketing as distinct operations. It is to be emphasized, however, that all rendering of useful service is production. As will be further explained later, production consists of the creation of utilities or satisfactions, not merely commodities.

Second, economics is concerned with the principles which govern the ratios at which the goods produced by specialists are *exchanged* one for another. The value in exchange of a particular good expressed in terms of money is called its *price*. As most goods are first exchanged for money, and this money in turn is exchanged for other goods, our study of value is usually a study of factors and conditions which govern price.

Distribution in economics has a meaning different from its common meaning in everyday life. It has reference to the division of the social income among the various factors of production or among the individuals cooperating in the creation of that income. The facts of distribution are the facts of how much income goes to different productive agencies and individuals. By the *principles of distribution* are meant the laws or principles which govern what each of the various factors or individuals that contribute to the complex productive process receive in income from the joint product. It should be particularly noted that this is not the meaning of the word *distribution* as generally used in the business world, where it has a variety of meanings but is most frequently applied to processes of marketing or transportation.

Principles of distribution in economics include the principles which govern *wages*, not only wages in general, but particular classes of wages, one as compared with another. The principles of distribution cover also the laws which govern the price received for the use of capital, in the form of *interest*. Income arising from the ownership of land presents peculiar problems in distribution, involving the principles governing *rent*. Finally, *pure profit* is a fourth kind of income, including income not covered by wages, interest, and rent. The entire income received by individuals may be resolved into these four shares, wages, interest, rent, and pure profit, which are said to accrue to the four factors in production, *viz.*, labor, capital, land as a natural resource, and entrepreneurs.

The economic problems of distribution, however, do not end with determining in a general way the laws which govern wages, interest, rent, and profits. They lead us to the study of why each of these shares amounts to what it does under particular conditions. Why are wages in one country higher than those in another, or those in one industry higher than those in another? As welfare economists we are interested in knowing under what conditions and to what extent it is possible to increase wages in general, or particular wages, and how this affects others than those whose wages are changed. Why do the owners of capital and of

land receive in the form of interest or rent as much of our national income as they do, and how, if at all, may the share which they receive, either in general or in particular cases, be changed? These are the kinds of questions with which the principles or theory of distribution are concerned in economics.

The term *consumption* is used in economics as in everyday life but with a broader meaning. It refers to utilizing or making use of either material goods or personal services. Thus there may be consumption of the services of the physician or the musician, or the advantages of a park, as well as consumption of food, of housing facilities, clothing, and the like.

DEVELOPMENT OF ECONOMICS

While economics involves the study of principles of general validity, like other social sciences, it cannot but be strongly influenced by social conditions prevalent at the period and in the place the economist is working. It is difficult, if not impossible, to transcend the boundaries of the time and space one occupies, and the student—and the teacher or writer as well—should be very careful to remember that what appears to be true for his country, his occupation, or his epoch in history may be far from true for another nation, time, or occupation.

An understanding of the relationship of economic theory to the time and place of the theorists, as well as a clearer view of the nature of the subject, may be obtained from a brief note about the work of some of the most important writers in the field.

The first great masterpiece in the literature of economics was the work of a Scottish professor, Adam Smith, which was published in 1776, under the title of *An Inquiry into the Nature and Causes of the Wealth of Nations*. In this treatise Smith attempted to set forth and demonstrate by logical proof those general policies which a nation should pursue in order that its population might have in greatest degree "all the necessities and conveniences of life."

In the course of his great work he ranged over, and for the first time systematized, many aspects of economics. He begins his book by showing the great advantages which come from the division of labor, or specialization as we have termed it, and this leads him to discuss the principles which govern the value and price of different goods, in other words, the principles of exchange and of the nature and use of money. Then he goes further afield, demonstrating the advantage of raising and using capital for productive purposes and writing so masterfully on taxation that his views on this subject are still quoted.

The central point of Smith's work is that economic welfare can best be attained by *not* interfering with economic activity; that if men are let

alone, their attempts to attain the greatest wealth for themselves will, through the operation of the "unseen hand," as Smith put it, also result in the maximum prosperity of the community. This doctrine of "let alone," or *laissez faire*, as it is generally known, reigned almost supreme in the economic thinking of England, Western Europe, and America for a hundred years after Smith.

It was not entirely coincidental that Smith's exposition of the advantages of freeing business from government restrictions reflected the viewpoint of the middle-class manufacturers and merchants who at the time were just beginning to transform the economy of England from an agricultural into an industrial one and who were hampered in this endeavor by the ruling economic philosophy of the day, which went under the generic name of *mercantilism*. Mercantilists, who cherished the belief that gold and silver were superior to all other forms of wealth, advocated the imposition of rules and restrictions on trade and manufacture with the object of building up the country's store of the precious metals. They wanted to encourage exports and curb imports, so that the exports would have to be paid for by shipments of gold and silver. Smith demonstrated the falsity of this position, showing that a country's wealth consists of usable goods of any sort. Smith should not, however, be thought of as the advocate of a particular economic policy, but as a student who may be said to have laid the foundation of economics as a science.

Forty years later, England emerged from the Napoleonic wars with its economy disrupted, with prices much higher than ever before, with its monetary system in disorder, with wages hardly affording subsistence, and with taxes high. The high prices were in part, at least, due to the Corn Laws, which were taxes on wheat imported into England and which kept food prices up, to the detriment of the worker and manufacturer, but to the advantage of the landowner. With abundant food beginning to be available from the New World, there was violent controversy as to whether these laws should be repealed, with the consequent lowering of food prices and changes in the position of landowners, industrialists, and workers. In the *Principles of Political Economy and Taxation*, published in 1817, David Ricardo, an English stockbroker, attempted to analyze and set forth the principles that govern how much rent landlords are able to exact from tenants, the relation of the rent of land to the price of grain, and the factors governing the generally prevailing rates of wages. In fact, he undertook to answer for the first time in a thoroughgoing manner this important question: What determines the proportions in which the income of a nation is divided among the various classes of people? In other words, he was attacking the problem of *distribution*, as we have defined it. It is interesting to notice that one of Ricardo's most famous conclusions, that land rents would steadily increase, profits

decline, and wages tend to remain at a subsistence level, could be and was construed as an argument against the Corn Laws, and within thirty years after his book appeared, these laws were abrogated.

It should be recognized, of course, that there were important forerunners to Smith and Ricardo. Among these forerunners were a group of Frenchmen known as the *physiocrats*, who wrote in the quarter century preceding the publication of *The Wealth of Nations*. They were interested especially in the problems of agriculture and were the first to be called *economists*. Moreover, among the contemporaries of Smith and Ricardo were men who made notable contributions to our understanding of economic principles and problems. Nevertheless, these two men may be looked upon as having set the pattern of what constitutes the subject matter with which economics as a science is concerned. They are also outstanding examples of what are now referred to as the *classical economists*, a term under which are included a succession of English economists, starting with Adam Smith and ending with John Stuart Mill, one of the most famous of all the classical group, who published his most noted work, *Principles of Political Economy*, in 1848.

Modern economics is not classical political economy, no more than present-day chemistry is the chemistry of the last century. But economics today is greatly indebted to the classical economists. Especially is it true that these writers, from Adam Smith to John Stuart Mill, marked out the type of subject matter with which present-day economics deals, though the term *economics* is used in a variety of ways beyond the scope of classical political economy.

In Adam Smith's time, the chief problem of economic policy seemed to be that of freeing economic activity from the burden of governmental restriction. The overriding problem of our time has been that of preventing the recurrence of such a disastrous event as the Great Depression of 1929 to 1933. J. M. Keynes, the great English economist who died in 1946, centered his work around attempts to explain the cause of business fluctuations, which he felt lay in the insufficiency of investment, and to suggest methods of overcoming them. Explanations of, additions to, and controversies over Keynes's theories are the staple fare of current economic discussion, which is as it should be, as no problem is more important than that of attaining and maintaining full employment, the more so as the solution of this problem would cause many other acute social and political problems to vanish.

A great many of the suggested policies for combating business depressions involve a very high degree of government regulation and control of economic activity. It can be said that the pendulum which, after Adam Smith, had swung completely over to the side of unregulated economic activity has now almost completed its swing back to the side of govern-

ment control, though from a quite different standpoint than that of mercantilism.

AGRICULTURAL ECONOMICS

Enough has been said of the scope of economics to indicate that it is a science which covers a very large and important aspect of man's activities. In fact it studies that activity at which most men spend most of their lives, the producing and distributing of goods and services. So large a subject naturally divides itself into a number of subtopics, like railway economics, labor economics, the economics of taxation, and agricultural economics. Since economics is an analysis of the effects of specialization, it is only natural that there are economists who specialize in each of these fields.

These specialists examine both the applicable economic principles and the actual economic organization of the special field. Thus the labor economist is largely concerned with the theory of distribution—what the forces are which govern the total wage payment to all workers and the wages paid individual workers. He is also concerned with the pertinent social institutions, so that he describes and analyzes unions, employers' associations, and the methods of bargaining between them.

For its part, agriculture economics is also concerned with appropriate questions of principle. What governs the amount of land, labor, and capital a farmer should use to farm most efficiently? What are the forces that affect the prices of the things he sells and buys? What, in other words, are the relations between agriculture and the rest of the economy?

Agricultural economics, of course, also has its descriptive aspect. What is the prevailing tenure system in the United States and in other countries? What are the actual working, housing, and living conditions on farms? To what extent is mechanical power replacing horse and man power?

Because crop production involves the purchase of so much nonagricultural equipment and because the processing, transportation, and selling of farm products involves so many economic activities away from the farm, the study of agricultural economics would not be complete unless it considered the relations between the agricultural and the nonagricultural parts of the economy. It must at least touch on such matters as the methods and organizations of those who sell to farmers, the economics of transportation and the whole matter of processing, wholesale and retail margins, and, most important, the forces determining the desires and abilities of consumers to buy farm products.

Lastly, and very important, agricultural economics has its welfare aspect. Through what sort of individual or group action or intervention

by the government can farmers' income be increased and stabilized, and in such a way that the welfare of the rest of the economy is advanced? Or more briefly: What should be the national policy toward agriculture?

OCCUPATIONS AND INCOME

Our discussion so far has concerned itself with production and distribution in the abstract. In order to give body and reality to some of these abstractions it is necessary, and interesting as well, to present some significant series of economic statistics, particularly those relating to national income, which in a way measure the total product of a year's economic activity in the United States. Examination of these figures will also help us to assess the place and importance of agriculture in the total economy.

National Product and Income. The United States, we have been often and truly told, is the richest and most productive nation on the earth. One could measure this production in terms of many things—1.5 billion bushels of wheat per year, 3 billion bushels of corn, 5 million cars and trucks—but it would be difficult to derive a total picture by looking at this great collection of diverse objects. In order to compare them, one is forced to use a yardstick common to all of them, which is their price, the dollars they are worth. Incidentally, there is a way of transforming dollar value into real (thing) values, which we shall describe later.

Looked at in the aggregate, all goods and services produced are the output either of business, including farm businesses, or of government. All goods and services produced are of two main types, those intended for consumption, of which food is a prime example, and those intended to make other things, of which a machine is the prime example. These two classes are labeled *consumption goods* and *production (or capital) goods*. Before discussing these categories and some of their subdivisions further, let us see what the gross national product in 1947 looked like as computed by the U.S. Department of Commerce (Table 1).

Let us analyze this table. Gross national product is the technical name for the "aggregate value of current production of goods and services flowing to the Government, to consumers . . . to business."³ Personal consumption itself requires no further explanation. Durable goods are those which last, which can be used for an appreciable length of time; the most obvious examples of consumers' durable goods are houses, automobiles, refrigerators, furniture, and the like. Bulking larger in the picture are nondurable goods like food, tobacco, gasoline, etc., which are consumed, as it were, at a single sitting. Among con-

³ M. Gilbert and G. Jaszi, "National Product and Income Statistics," *Dun's Review*, 1944.

ECONOMICS WITH APPLICATIONS

TABLE 1. GROSS NATIONAL PRODUCT OR EXPENDITURE, 1947
(Billions of dollars)

Gross National Product	231.6
Personal consumption expenditures.....	164.8
Durable goods.....	21.0
Nondurable goods.....	96.5
Services.....	47.3
Gross private domestic investment.....	30.0
New construction.....	11.7
Producers' durable equipment.....	17.8
Change in business inventories.....	0.6
Net foreign investment.....	8.9
Government purchases of goods and services.....	27.9
Federal.....	15.6
State.....	12.3

sumer services, which form just as important an economic category as goods, are medical care, domestic and restaurant services, laundering, and entertainment.

Investment is much harder to define. Basically it consists of adding to that stock of things which is used to make other things. In economics, man-made objects which are not consumed directly in themselves but serve to make consumables (a food-processing machine is a good example) are called *capital* (or *productive*) *goods*. Investment is the application of resources to the making of such goods. New construction under the heading of investment refers chiefly to things like new factories; and examples of durable equipment are machines, trucks, airplanes, and typewriters. Also included in capital goods is what is called *working capital*, which consists of things currently used in making an article of consumption, for example, the parts which the General Motors Corporation owns and which it is going to assemble into cars. The category of "change in inventory" includes such items. It also includes changes in the stocks of consumer goods owned by businessmen, because as long as such things are in businessmen's hands they are part of business inventory. Incidentally, the fact that consumers' goods still retained by businessmen appear in this category in the GNP (gross national product) account allows us to say that this table represents both the GNP or expenditure. To take an example: if at the beginning of a year refrigerator manufacturers had an inventory of \$5,000,000 worth of finished refrigerators and sold them all, and in the course of the year made \$48,000,000 worth more and sold only \$40,000,000 of their new production, this transaction would show up in the account as:

Consumer expenditures	\$45,000,000	(for \$5,000,000 old and \$40,000,000 new)
Change in inventory	3,000,000	
Total	\$48,000,000	

This indicates that \$48,000,000 worth of refrigerators were produced, as was the case.

Net foreign investment indicates the excess of exports over imports. If we ship out goods worth 10 million dollars, and receive from abroad 5 million dollars' worth, the *net* amount produced for foreign use is 5 million dollars.

Government purchases consist of both capital and consumption goods and must be added to what was produced for private consumption and business investment and inventory to get the total picture of production. Thus a dam built by the government is as much an investment as one built by a private power company, and the teaching services furnished by a public school are just as much consumer services as those furnished by, let us say, a private doctor or a private tutor.

Income. As over 230 billion dollars in goods and services were produced in 1947, the same amount must have been paid out to those who did the hand and brain work required, the owners of the land and capital (production goods) used, and the entrepreneurs who directed and organized the work. Perhaps an example from a single firm will help make this point clear.

If a brickyard which gets its raw material, clay, from land it rents made and sold \$100,000 worth of bricks in one year, that was its gross product, and it might have been paid out as follows:

Wages	\$75,000
Rent	10,000
Interest (on money borrowed to buy machinery) ...	5,000
Depreciation (on machinery)	3,000
Profit (to owners)	7,000
Total	<u>\$100,000</u>

And likewise with the GNP.

We cannot set the nation's income as equal to the gross product and let it go at that. It will be noticed that throughout we have spoken of gross national product. Income is generally conceived of as something net, something over and above what has previously existed. For the *net* national income to be found, the value of preexisting things that were used up during the year has to be subtracted. This has been partly taken care of in the inventory account already discussed. (If in any one year what was produced was made entirely of materials preexisting and these materials were not replaced, the inventory account would show a large minus and correspondingly reduce the total gross product for that year.) But another kind of using up of preexisting goods has not been counted out of the gross product. That is the depreciation of production goods. Depreciation means wearing out. If a machine is good for ten years' use, in one year it loses one-tenth of its value, and this has to be counted out of net product. In the example of the brick company, in order to

get a true picture of the net income we subtracted \$3,000 for depreciation of machinery.

As computed by the Department of Commerce, a second subtraction has to be made from gross product before net national income is reached. This involves certain taxes, chiefly of the type of sales taxes, which are taken out for reasons which need not concern us here. To arrive at net income from gross product we therefore subtract as follows:

	Billion Dollars
1947 gross national product	232
Subtract: (1) Depreciation and other	
capital consumption charges 13	13
(2) Indirect taxes	19
Correction for statistical discrepancy -3	-3
1947 national income	<u>203</u>

This income was paid out as follows:

	Billion Dollars
Compensation of employees	127.5
Rental income of persons	7.1
Net interest	4.3
Corporate profits	24.8
Farm proprietors' income	15.7
Business and professional income	23.2
	<u>203.6</u>

The first four items are our old friends wages, rent, interest, and profits. The last two items are composed of these four elements also, for the income of a private businessman or a farm proprietor is partly a return for his own work, which is wages, as well as profit, and it may include a return on his own land and capital, that is, rent and interest. The statistics available do not permit, however, the exact division of the income of these two classes into the four familiar parts. The table, therefore, gives only a rough indication of the return to the four factors, but it does make clear that the largest part of national income goes for wages and salaries.

The aggregates comprising the national product are the best measure of the nation's economic activity. When production for consumption and investment are at high levels, the nation is enjoying prosperity; for all economic activity is reducible to these two categories. How our country has swung between depression and prosperity in the years since 1929 is clearly shown in Table 2.

From the height of the prosperity in 1929 to the bottom of the depression in 1932 to 1933, national income, in dollars, was more than cut in half. Then it rose slowly, with interruptions, to 1940, when 1929 was equaled. During the Second World War it shot up in dollar terms to

TABLE 2. NATIONAL PRODUCT AND INCOME, 1929-1948
(Billions of dollars)

Year	National product	National income
1929	104	88
1930	91	75
1931	76	59
1932	58	42
1933	56	40
1934	65	49
1935	72	57
1936	85	67
1937	90	74
1938	85	67
1939	90	73
1940	100	81
1941	125	104
1942	160	136
1943	193	168
1944	211	132
1945	213	183
1946	204	178
1947	232	203
1948 (estimated)	261	224

double the highest figure attained previously and rose even higher thereafter.

The Changing Price Level. Since there is no way of adding together disparate goods like ham and eggs or disparate services like an hour of barbering and an hour of acting in a theater, the only way of arriving at a total of goods and services is to put them in terms of their dollar values. But dollars are a very poor yardstick. If we were studying the economy of a mythical country called Gluttonia, where steak was the only object produced, it would be easy to see that a national product of \$100 in 1947, when steak was \$1 a pound was not twice as great as the product of \$50 in 1939, when it was 50 cents a pound. In each year the same amount of steak, 100 pounds, was produced in Gluttonia, and therefore in real, not monetary, terms the national income in that country was the same in both years.

Likewise in the United States. In 1945 the national product was 213 billion dollars, while in 1939 it was 90 billion. This means that the 1945 product was much more than twice as high as the 1939 product, not in real terms but only in terms of current dollars. Current dollars are those

which reflect the price level of a specific year. Since the buying power of dollars varies from year to year, measurements in current dollars are really not comparable, any more than measurements made with an elastic measuring tape.

To get around this difficulty, the figures for different years can be divided by the same price index, so that the current dollar figures are put on the same basis. Using 1944 prices and applying this method to the 1945 and 1939 figures, national income in 1945 was 204 billion dollars in terms of the 1944 dollars, and the 1939 income was 114 billion, much smaller truly, but in real terms not half as small. While this process of equalizing dollars of different value (technically called *deflation*) does make for greater comparability than can be attained through using raw current figures, it is far from yielding truly accurate results, so that comparisons of real income or production from year to year cannot but be, at best, approximate.

In considering almost every variety of economic question the student should be very careful to notice the effect of changed dollar values. There is a natural tendency, except in periods of exceptionally violent price changes, to assume that any current price level has been the same for some time and will continue to be so. Actually, however, prices vary widely over a given period of time, and agricultural prices are among the most variable of all.

Figure 1 is interesting because it illustrates not only the variability of certain groups of prices, but also the relationship of the prices paid by one economic group for the things it buys to the prices received by that group for what it sells. The difference between prices paid and prices received is not, however, the sole measure of agricultural welfare, for the total quantity sold, as well as the difference between intake and outgo per unit, must be considered.

Farm-product Price Changes. It will be noted that the prices shown in Fig. 1 are percentages of the average of prices from 1909 through 1914. A figure of 200, for example, simply means a price twice as high as the average for that period, which is the base period for this particular computation.

It can be seen from the illustration that beginning in the latter part of 1920 and in early 1921 farm prices began to decline rapidly from the peak of more than 200 in terms of the 1909 to 1914 average. For the year 1921, prices received by farmers had declined to 124. By 1923 they recovered to 143, and for the following six years fluctuated between 142 and 156, which did not represent a high degree of change. But beginning with 1930 another great drop occurred, which brought prices of farm products by 1932 to the low point of 68 per cent of the 1909 to 1914 average.

Following the spring of 1933, farm prices followed an irregularly upward course until 1937, when a point of 122 per cent of the 1909 to 1914 average was reached. This level was only 17 per cent below 1929. Prices in 1938 and 1939 were lower again but did not approximate the low point of 1932.

After 1939 prices received by farmers advanced steadily, except for 1943 and 1944, when they held steady. By 1948 they were more than

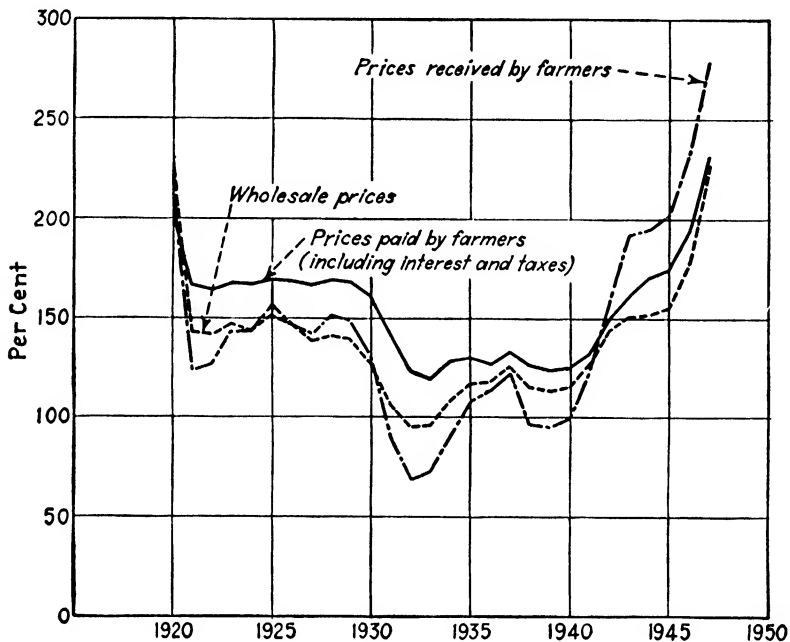


FIG. 1. Wholesale prices, prices paid and prices received by farmers 1920-1947 (Index nos. 1910-1914 = 100).

double the 1939 level. On the whole they advanced more than prices paid by farmers, indicating an improvement in the farmer's economic position.

Prices of Commodities Bought by Farmers. Prices of commodities bought by farmers also rose and fell. They rose nearly as high as prices of farm products, but in the period covered they did not fall nearly so low relative to the 1909 to 1914 base period. As shown, prices paid by farmers for commodities used in both living and production stood in 1920 at 202 and in 1932 at 124 per cent of the 1909 to 1914 figure. As all groups of farm products combined stood in 1932 at 68, the ratio of prices received to prices paid by farmers was at that time 0.55. This indicates that in 1932 a certain number of physical units of farm prod-

ucts, such as bushels, pounds, or tons, were able to command from other groups in our economic system only about half as many commodities of the kinds used by farmers in living and production as they did during the 1909 to 1914 period, that is, twenty years previously. By 1937 the ratio of prices received to prices paid had risen to 0.92, a ratio similar to that which prevailed during the late 1920's, only to fall again in 1938 and 1939.

Since then, however, the prices received by farmers have risen much faster than those paid for commodities, so that the ratio reached 1.22 in 1947.

TABLE 3. CHIEF OCCUPATIONAL GROUPS AND THEIR INCOME

	National income by industrial origin, 1946		Number of persons engaged in production, 1946	
	Million dollars	Per cent	Thousands	Per cent
Agriculture, forestry, and fishing . . .	18,549	10.4	7,292	12.7
Mining	3,118	1.7	929	1.6
Contract construction	6,063	3.4	2,334	4.1
Manufacturing	47,653	26.8	14,635	25.6
Wholesale and retail trade	32,841	18.4	10,433	18.2
Finance, insurance, and real estate . . .	14,753	8.3	1,813	3.2
Transportation	10,202	5.8	3,041	5.3
Communication and public utilities . . .	4,747	2.7	1,107	1.9
Services	17,020	9.6	6,776	11.8
Government and government enterprises	23,019	12.9	8,897	15.5
Rest of the world	239	0.1		
Total	178,204	100.0	57,260	100.0

SOURCE: Tables 13 and 28, National Income Supplement to *Survey of Current Business*, July, 1947.

Wholesale Price Index. A more general index, covering a very wide range of commodities, is the U.S. Department of Labor's Wholesale Price Index, also shown in Fig. 1. Its fluctuations are roughly like those of the index of prices paid by farmers. The Department of Labor also publishes a cost of living index called the Consumer's Price Index, which includes the prices of services as well as those of commodities at retail.

Occupations and Income. Before discussing Table 3, an explanation is in order concerning the number of persons engaged in production. These figures represent "man-years of full-time employment by persons working for wages or salaries and by active proprietors of unincorporated enterprises." This table, then, does not give the number of people em-

ployed at any one time or the average employed through the year; it gives the total man-years of employment in the industries listed. Thus, if there were two hired men on a farm who worked there only from April through October, they would show up in this table as only one person engaged in production, because the combined time spent equals one man-year of work. In the more usual employment table, which gives the total number employed at any one time, they would be counted as two for October and none for November.

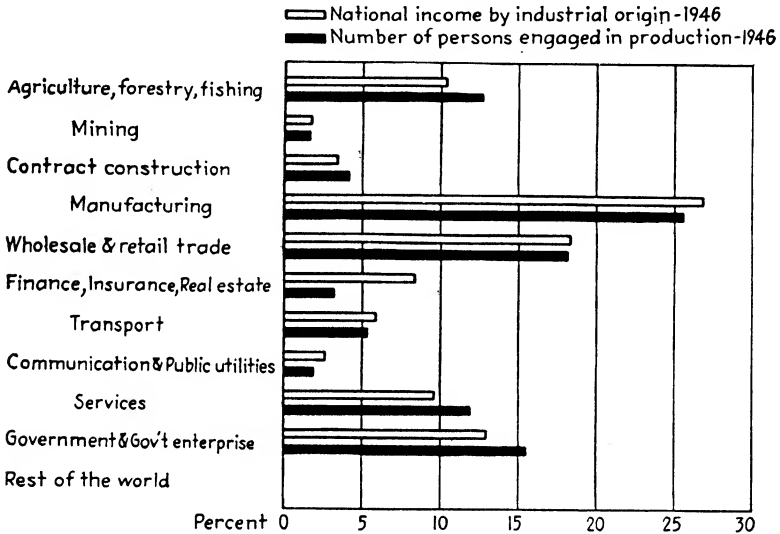


FIG. 2. Chief occupational groups and their income, percentage shares, 1946. Source: Table 3.

This particular type of table is used here because it permits a direct comparison between the number of persons engaged in an industry and the net income derived from it. Manufacturing is clearly the largest category in both numbers and income, accounting for about one-fourth of each total, and trade is next, with not quite one-fifth of each. Agriculture, government, and services are the three next most important groups as to both numbers and income, but it will be noted that in the case of both services and agriculture, income is much smaller proportionately than the number of persons engaged therein, indicating that the average income for a man-year of work in either of these occupations is considerably below that of other occupations. This fact has been an unending source of eloquence for farm congressmen and leaders of farm organizations. To examine the reasons for this even superficially would take us too far afield, but it may be suggested that among them are the seasonal nature of agricultural production, which means that

many people engaged in farming do not work full time throughout the year, and the fact that agricultural production does not lend itself to the use of mass-production methods. Another reason may be that persons engaged in farm work are willing to accept lower incomes than those working at other jobs because of the compensation derived from being

TABLE 4. CIVILIAN LABOR FORCE, EMPLOYMENT, AND UNEMPLOYMENT, October, 1947
(000 omitted)

Population—14 years and over.....	106,428
In labor force.....	60,892*
Agricultural.....	8,622*
Wage and salary workers.....	2,129*
Self-employed workers.....	4,823*
Unpaid family workers.....	1,669*
Nonagricultural.....	50,583*
Wage and salary workers.....	44,132*
Manufacturing.....	15,832
Iron and steel.....	1,874
Machinery except electrical.....	1,535
Automobiles.....	984
Textile-mill products.....	1,333
Apparel, etc.....	1,344
Food.....	1,698
Other.....	7,064
Mining.....	894
Contract construction.....	1,895
Transportation and public utilities.....	4,102
Trade.....	8,880
Finance.....	1,586
Service (except domestic).....	4,662
Domestic service.....	1,619*
Federal, state, and local governments.....	5,447
Self-employed.....	6,089*
Unpaid family workers.....	363*
Unemployed.....	1,687*

SOURCE: Compiled from release of the Census Bureau (p. 57, No. 65) entitled *Current Population Reports—Labor Force*, and the *Monthly Labor Review* of the U.S. Department of Labor. The census figures are marked by an asterisk; others are from the *Monthly Labor Review*. There are some minor discrepancies because of certain differences in the methods of enumeration employed by the two agencies.

one's own boss, working outdoors at a self-set pace rather than in a factory at a tempo set by a moving conveyer belt, and the real satisfaction that comes from making things grow.

Table 4 shows how many people were employed in October, 1947. The classification differs from that in Table 3 because proprietors in non-agricultural industries are here listed separately from employees, while in the former table they are lumped together. Table 4 also includes unpaid family workers not included in the former table and is especially important for the figures on agricultural employment. Further, in Table

2262

4 military personnel are counted separately from other government employees; in the previous table they are included in the government total.

The figures are presented on this basis here because they afford comparison of the number employed with the total labor force. In October, 1947, the civilian labor force, which includes those looking for work as well as those employed, numbered 61 million. In addition there were about 1.35 million persons in the armed services. Of the civilian labor force about 1.7 million on the average were unemployed. Of these, a large fraction were probably out of jobs voluntarily, people who, on being discharged or leaving a job, decided to vacation awhile before starting a new job or who might have been moving from one location to another for reasons of health or to better themselves. Involuntary unemployment, therefore, probably accounted for only about 1 or 2 per cent of the entire labor force, so that this was a time when employment was at a very high level. It may perhaps be unnecessary to remind the reader that such high employment in peacetime has been unfortunately the exception rather than the rule during the period since the First World War and in many of the years before. The year 1947 is in sharpest contrast with the years between 1930 and 1940, when unemployment ran between 4 and 13 million, and when, in 1932 and 1933, the number of persons employed fell below 40 million. Perhaps the best measure of a nation's economic health is the employment figure, and the difference between the 59 million employment figure of 1947 and the 40 million figure of fifteen years before symbolizes the length of the ascent from the depth of depression to the height of prosperity.

It may be of interest to point out the most important subgroups within the major industries listed. About half the production workers in manufacturing work on durable goods—with the iron and steel, automobile, and machinery-making industries being the most important. In the non-durable-goods industries, the manufacture of textiles and clothing and the processing of food offer the most employment. Of those engaged in transportation, about half work on the railroads, the rest chiefly in trucking and the operating of busses. Retail trade and automobile services employ about three-fourths of all those engaged in trade. The 5-million-odd government employees are far from all being pencil-pushing bureaucrats. They include over a half million postal workers and over a million schoolteachers. And even some of those who spend their days sitting behind desks also work.

Importance of Agriculture. Since agriculture is one of the largest fields of employment and contributes a major fraction of the national income and since fluctuations in agricultural prices determine to a large degree the course of prices generally and especially the level of the cost of living, it does not require much argument to prove how important

an understanding of the economics of agriculture is to the understanding of the whole economy. Therefore, a large part of this book will be devoted to elucidating the special economic problems of agriculture and relating them to the general structure of economic theory and economic institutions.

THE POINT OF VIEW OF THIS BOOK

The attitude of a writer on economics is inevitably colored by the economic structure of his country, his own status within it, his temperament and experience, and the pressing problems of the time and place he is working in. This book is written from the point of view of Americans and chiefly concerns itself with economic activity as it is carried on in the United States. It is hoped, however, that, in the course of this exposition, economic principles of general validity, applicable to any type of economic system, will be brought to attention.

The Capitalist System. The kind of economic system which prevails in the United States is usually called *capitalist* or *capitalistic*. This term is used to distinguish it from communist systems, such as the Russian one, or the socialist or semisocialist systems now apparently evolving in several Western European countries and the United Kingdom.

Leading characteristics of the capitalistic system are (1) relatively little restriction on the private ownership of property, (2) relatively great individual freedom in the purchase and sale of goods at whatever prices may be agreed upon by those engaged in buying and selling, and (3) relatively little interference with individual initiative and competitive forces.⁴ Under a communistic system, on the other hand, there are recognized and permitted relatively little private ownership of property, relatively little freedom in the purchase and sale of goods, and relatively great interference with individual initiative and competitive forces. The chief characteristic of the capitalistic system is the right of the individual to own and to profit from the ownership of property used in the production of goods. The chief characteristic of a socialistic or a communistic society is that the individual is denied the privilege of securing income from the ownership of property.

In the United Kingdom, which we have designated as semisocialist, the state owns a number of that country's important industries: the telegraph, telephone, and radio broadcasting systems, the coal mines, railroads, and the central electric-power grid. In addition, it exercises a high degree of

⁴The term *capitalistic* is also sometimes used in application to a society in which much machinery and other capital are used, especially where this is owned by relatively few, in contrast to a primitive society in which relatively little capital is used and ownership is widely diffused. In recent years, however, the term is used mostly in contrast with a communistic society, as above explained.

control over labor, prices, the movement of commodities, the use of land, and the types of crops grown by farmers. In part these controls are due to the continuance of shortages growing out of the Second World War, but they also are consequences of deliberate intention of the British Labor party to exercise close regulation over the operations of the economy.

The term *property* in everyday language is used sometimes to refer simply to real estate, sometimes to all tangible objects. As a legal term, however, property implies ownership, and the ownership not only of tangible objects but of other rights to benefits. Property has been legally defined as "a bundle of rights" or "the right to benefits." As said before, the individual's right to own and to profit from the ownership of property used for productive purposes is the outstanding feature of capitalistic society, and with the individual's right to own property goes the right to dispose of that property. But it should not be assumed that the right to property in a capitalistic economic society is absolute and without governmental restriction. There are many such restrictions, as will be brought out more fully in the pages which are to follow. Nevertheless, the general prevalence of private ownership of property used for productive purposes is the chief characteristic of such a society.

Under a system of private ownership, such as we have in the United States, prices are the means by which productive resources are directed into channels which will satisfy the desires of consumers. In socialist or communist societies, though goods are priced, other means than prices—direct orders from the government, for instance—may be used to allocate resources. Even in this country during the war, government controls played a preponderant part in directing the use of productive resources.

In this text we shall be mostly concerned with an analysis of economic principles as they operate in a capitalistic economic society rather than in some other kind.

Economic Problems Complex. The economic problems of modern society are complex. In our study of them, they will have to be taken up one at a time. But they are so interrelated that a reasonably thorough understanding of one problem often requires some understanding of others. To understand the principles governing interest, for example, requires also some understanding of the principles governing wages. Accordingly, often our first conclusions must be tentative, subject to modification as other factors are introduced. It will be necessary often to note first the results of certain changes, assuming that other things remain unchanged, and then later to examine the results of changes in these "other things." All of this will require care in definition of terms and care in analysis or in reasoning from point to point. Success in

understanding economic phenomena requires ability and care in logical analysis as well as sustained attention. The student may often be reminded of the statement of Alfred Marshall, the well-known English economist, who in his *Principles of Economics*,⁵ originally published in 1890, said:

In this world every plain and simple doctrine as to the relation between cost of production, demand, and value is necessarily false: and the greater the appearance of lucidity which is given to it by skillful exposition, the more mischievous it is. A man is likely to be a better economist if he trusts to his common sense, and practical instincts, than if he professes to study the theory of value and is resolved to find it ~~easy~~.

This statement is equally true of many other problems in economics. This, however, should not discourage the student but should merely remind him that success in economics is no more to be attained without effort than success in other lines of endeavor. Moreover, it should warn him constantly to test his conclusions by his "common sense and practical instincts."

Economic problems are the subject of much controversy. This finds expression in the platforms of political parties. It gives rise to labor unions, taxpayers' leagues, agricultural blocs in Congress, farm organizations, and business lobbies. The controversy is most acrimonious when the merits of a particular piece of economic legislation are argued, as in the case of tax or protective tariff legislation, or the Agricultural Adjustment Act of the Roosevelt administration, or the continuance of price regulations after the Second World War. These bitter arguments are in part due to the complexity of the problems with which economics deals. That, however, is not the sole or even the most important cause. A more important cause is the fact that economics is concerned with matters in regard to which the interests of individuals and of particular groups are often in conflict with the interests of others, or with the general welfare, and which often must be decided by a general policy in which one group is favored at the expense of others. This makes difficult an unprejudiced, scientific attitude. A good illustration is found in the protective tariff. A small group gains by having a tariff placed on a certain product. That group, therefore, proceeds to convince others that they also should favor such a tariff. The results depend on the outcome of a political campaign. In the course of this campaign prejudice is appealed to, and plausible fallacies are presented in such an attractive way as to overshadow the unbiased scientific analysis.

Economic Welfare and Happiness. Economic welfare does not guarantee human happiness, which is a very elusive thing. Nevertheless,

⁵ Eighth edition (Macmillan, 1920), p. 368.

most of the objects for which human beings struggle in this world are promoted by economic welfare. About three-quarters of a century ago the famous French artist Millet painted a picture to which he gave the title "The Man with the Hoe." In this picture a tired, ragged, unintelligent peasant is portrayed in a field, leaning upon a rude hoe. Upon viewing the picture, the American poet Edwin Markham wrote in part as follows:

Bowed by the weight of centuries he leans
 Upon his hoe and gazes on the ground,
 The emptiness of ages in his face,
 And on his back the burden of the world.

 Stolid and stunned a brother to the ox.

 Whose breath blew out the light within this brain?

What to him
 Are Plato and the swing of Pleiades?
 What the long reaches of the peaks of song,
 The rift of dawn, the reddening of the rose?

It is within the power of economics as a science to cause fewer of the dwellers on the soil, and the dwellers in the cities as well, to be duplications of the Man with the Hoe, as painted by Millet, and as described by Markham. Economic well-being cannot guarantee human happiness, but it is an essential for most of the things considered worth while in modern civilization. And economic well-being for our rural population, and other parts of the population also, can be promoted by an understanding of the principles of economics with special attention to their application to agriculture, the presentation of which is the purpose of this book.

Questions and Problems

1. Explain the statement that agriculture is now mostly commercial.
2. What are the three basic economic problems?
3. What is the role of the economist in relation to public policy?
4. What is the subject matter of agricultural economics?
5. What is the difference between the gross national product and the national income?
6. If you saw a statement that in a particular country gross product had increased from 100 million dollars in one year to 125 million in the next, would that indicate that production in the second year was actually 25 per cent greater?
7. What are the chief occupational groups in the United States?
8. What are the significant features of a capitalistic economic system? Define capitalism and communism.
9. Give several reasons for the fact that economic problems are the subject of much controversy.

Suggested Readings

1. K. Boulding, *Economic Analysis*; A. Meyers, *Modern Economics: Elements and Problems*; Garver and Hansen, *Principles of Economics*; Hicks and Hart, *The Social Framework of the American Economy*; J. Ise, *Economics*; P. Samuelson, *Economics*; and L. Tarshis, *The Elements of Economics* are standard elementary textbooks in wide use in courses in economics and may be profitably consulted for the views of other writers.

2. *The Economic Reports of the President* from 1947 on present in fairly simple terms a review of important current economic trends, problems, and statistics.

3. O. E. Baker, Ralph Barsodi, and M. L. Wilson, *Agriculture in Modern Life* (1939), analyze a number of the basic economic problems of agriculture, with some differences of opinion expressed by the respective authors.

4. F. C. Mills, *Prices in Recession and Recovery* (1936), gives a comprehensive picture of commodity-price movements, including those of farm products.

5. *Agricultural Statistics*, published annually, and *Crops and Markets* and the *Agricultural Situation*, both published monthly by the U.S. Department of Agriculture, furnish recent information on prices of agricultural products and other commodities and services.

6. The *Survey of Current Business*, of the Department of Commerce, the *Monthly Labor Review* of the Department of Labor, and the *Federal Reserve Bulletin*, all published monthly, are the standard sources for current information on national income, prices, wages, employment, production, foreign trade, etc.

CHAPTER 2

THE EUROPEAN BACKGROUND OF MODERN ECONOMIC LIFE

Economic life has not always been everywhere organized as it is at present in this country. Production for sale in a delicately organized market has dominated American agriculture for no more than a century. A study of the past reveals that many features of our life which we take quite for granted, and without which we find it difficult to visualize a satisfactory economic life, are relatively new. Unconsciously people often assume that the present economic order has always existed and will continue. The error in this assumption, as well as the principles of the continuity of change and the tendency of the economic system to adjust itself to a people and their mode of making a living, has been well stated by Professor H. J. Davenport, when he says:

Little that is, in the present social and economic order, has long been as it is now, much of it has not been at all, and little of it is fundamental or sure to last. Private property, individual initiative, competition, the money system, and production for the price market are mere present adjustments, no one of which has always been, or is everywhere now, or is sure to remain. Each order becomes old and changes, and nothing in human life is certain but this process of change. . . . Institutions likewise are good or bad according to the degree of human development and the problems of the time. . . . That which is, may be right, but not in the sense that what is to come may not be better.¹

On the other hand, many of the serious problems which have confronted agriculture in recent years, and which we regard as new experiences, will be found to have been faced before in the world's history. Our understanding of our present economic system and of its problems will be improved by a knowledge of the historical background of that system. As modern American economic life grew directly out of a European background, we shall note in this chapter some of the important steps in the development of the economic life of Europe.

EARLY ECONOMIC LIFE

Principal Economic Stages. The advancement of man in his control over nature and in the satisfaction of his material wants is marked by his progress in the use of tools. The earliest stages in man's civilization are

¹ H. J. Davenport, *The Economics of Enterprise* (Macmillan, 1925), pp. 20-21.

described by such terms as the paleolithic, or old or rough stone age; the neolithic, or recent or polished stone age; the Age of Bronze; the Age of Iron; etc. Each of these marks the use of a new and improved type of tool. In sketching man's economic progress in the control over nature five large stages are generally distinguished: (1) the stage of direct appropriation from nature, often characterized as that of hunting and fishing; (2) the pastoral stage, characterized by the domestication of animals and herding; (3) the agricultural stage, characterized by a more settled form of life and by the growing of crops; (4) the handicraft stage, characterized by the development of specialized handicraft trades and the growth of towns; (5) the industrial stage, characterized by the use of modern power-driven machinery. These stages cannot be sharply differentiated; they overlap each other to a large extent. Furthermore, some people—for example, some among the American Indians—passed directly from the stage of direct appropriation from nature to that of a well-developed agriculture, without any intervening period in which the herding of domesticated animals played a part.

With progress in man's control over nature, there have also occurred changes in the relation of men toward each other while engaged in efforts to satisfy their material wants. Scanning the pages of history, we may distinguish a primitive communistic type of tribal life, a period of slavery, a period with a manorial or feudalistic type of economic life, a period of the guild in the towns, and an age of personal freedom and capitalism. Without doubt, present institutions governing our relations to each other will be further modified in the future. In fact, some very significant experimental changes are now in progress, though how enduring will be the different features of our economic life most recently introduced is a question which can be answered only in the years to come.

Primitive Economic Life. Man of a primitive type has lived on the earth several hundreds of thousands of years. His progress before he had passed beyond the paleolithic, or rough stone, age was slow. Some 10,000 or 12,000 years ago, man of the neolithic or recent stone age had made his appearance in Europe. The culture of neolithic man was characterized by: (1) polished stone implements, particularly the stone ax, though the use of implements of unpolished stone continued; (2) the beginnings of a sort of agriculture, though hunting was still of great importance ("Neolithic man did not sit down to his agriculture. He took snatch crops. He settled later"²); (3) pottery and proper cooking; (4) domesticated animals ("The dog appears very early. Neolithic man had domesticated cattle, sheep, goats, and pigs. He was a huntsman, and

² H. G. Wells, *The Outline of History* (Garden City Publishing Co., 1929), p. 77.

turned herdsman of the herds he once hunted."³); (5) plaiting and weaving.

The size of the social and economic group of earliest primitive man is a matter of some uncertainty. By the time of neolithic man, however, living together in communities or villages was common. A communistic or semicommunistic type of life, in which property in large part belonged to the group or tribe rather than the individual, has been generally characteristic of the more primitive people of historical times. An example may be drawn from the early barbarian tribes of Germany whom Julius Caesar encountered as he led his Roman army across the Rhine in the first century, B.C. Of one such tribe he wrote as follows:

It is said that they have a hundred cantons, from which they draw one thousand armed men yearly for the purpose of war outside their borders. The remainder, who have stayed at home, support themselves and the absent warriors; and again in turn are under arms the following year, while the others remain at home. By this means neither the husbandry nor the theory and practice of war is interrupted. They have no private or separate holding of land, nor are they allowed to abide more than one year in one place for their habitation. They make not much use of grain for food, but chiefly of milk and cattle, and are much engaged in hunting. They wear nothing even in the coldest localities except skins.

Economic Life of Early Civilizations. The earliest European civilizations were those of Greece and Rome. Ancient Greece had reached nearly the height of its marvelous advancement in literature, art, architecture, and other types of culture some 400 years B.C. Rome was at the height of its achievements from about 200 B.C. until about A.D. 200. Upon what type of economic life did these early civilizations rest?

The most significant aspect of the answer to that question is that they rested upon slavery. The people performing the work of agriculture were exploited. Of ancient Sparta it is said: "Agriculture and all mechanical arts at Sparta were in the hands of the Helots (slaves), since the laws of Lycurgus prohibited the Spartans from all lucrative occupations." The Greek philosophers, such as Plato and Aristotle, have left literary masterpieces describing the ideal state in which, as in their everyday life, the work of providing the material necessities of life was considered to be the work of slaves. In early Rome agriculture by free citizens played a very important part, but in Rome during the height of its splendor at least one-third of the population consisted of slaves, who were mostly captives of war, and perhaps another third of freed men, who were former slaves, and these two groups did most of the ordinary work. A Roman essay on farming, *De Agricultura*, written in the first century

³ *Ibid.*

B.C., is largely concerned with supervising the work of slaves. Insofar as their mastery over tools was concerned, Greece and Rome were in the handicraft stage. The handicraft work, however, was largely done by slaves. The occupations which were considered more worthy of the Greek or Roman citizen were warfare, learning, literature and the arts (including architecture), and government. Business was engaged in, particularly in Rome, but did not occupy the important place that it does in our modern life.

One of the constant problems of the Greeks and Romans was to assure an adequate supply of food. Their governments—instead of prohibiting or restricting the importation of their staple food, grain, from beyond their boundaries, as modern nations do by tariffs—used methods and devices of various kinds to ensure an inflow of grain. The most harsh of these methods was the Roman system of requiring the provinces which they had captured or subdued in war to send tribute to Rome in the form of contributions of grain. This was in addition to the contributions regularly levied by the Roman armies in the field and other taxes and tribute. The free distribution of this tribute grain to Roman citizens living in the capital played no small part in Roman history. The Greeks and the Romans recognized that it was possible for the inhabitants of the city to prosper at the expense of the tillers of the soil, though it has been well claimed that this system led to vices by those in the cities who thus lived at the expense of dwellers on the soil, vices which contributed to the final downfall of their civilizations.

The Manor. The collapse of the power of Rome in Western Europe about A.D. 400 was followed by a long period of political chaos, which lasted for six or seven hundred years and has been generally described as the Dark Ages. Preceding this, the Roman Empire had scattered the seeds of civilization over a considerable part of what is now Europe. Stimulated by the peace and protection afforded by the Roman government, trade between widely separated areas had attained considerable importance. But following the downfall of Rome at the hands of the German barbarians, there was left no strong central government to protect traders from marauders and robbers, and each small region came to rely upon itself for its consumable goods.

In the course of time the wandering tribes which overthrew the Roman government settled down to a more fixed abode. Such settlement was in villages. After a period of rather complete chaos there developed the military institution known as *feudalism*, in which the people of a region either put themselves under the protection of some local lord, frequently a bishop or other high church authority, or were forced under his control. Such a lord often had the advantage of a fortified castle. The economic life which developed in most regions was that of a self-sufficient com-

munity, known as the *vill* or *manor*. Though generally each manor was under the military protection of some lord, he did not necessarily live within the village itself. Often one lord controlled a number of manors, and where this was the case he was represented in some of them by a hired bailiff, or lesser noble. The inhabitants of each such vill or manor formed an economic unit, producing by their own hands practically all that was consumed.

Important in each village were the manor house, or "big house" of the lord, and the church. In addition there were the outbuildings of the lord and the cottages of the villagers. These villagers were of various grades, but in general were serfs or *villeins*, a position somewhat between freed men and slaves. They could not be bought and sold and yet could not leave the lord's manor and engage in production elsewhere. The majority of the villeins had small plots of ground, from which they obtained their food and materials for clothing. Others of lower state, known as *cotters*, had only a rude cottage and a garden spot, gaining what additional products they could by payment in kind for working for the holders of larger pieces of land. All classes of villeins had to work on the lord's share of the tilled ground and to give certain products for the support of the lord's household. Such work was of two kinds, *week work* and *boon work*. The week work consisted of working for the lord a certain number of days, usually two or three, each week. The boon work consisted of additional work on special occasions, as at harvest time.

The land of the manor was classified as tilled land, meadow, waste, and woodland. The location of each of these with reference to the village in which the villeins lived depended somewhat upon the topography. Usually the village would be along a small stream which supplied water and, when dammed, furnished power for the simple mill. In the surrounding lower land would be the meadows from which would be cut wild hay for winter feed. On higher ground would be the tilled lands, perhaps on both sides of the village. Wherever the land was rough or otherwise not adapted to tillage, it was set aside as woodland to be used for pasture and wood supply.

The tilled land was usually divided into two or three parts. The former was known as the *two-field* system. In most regions this gradually gave way to the *three-field* system. Under the latter one field would be planted to fall crops, a second to spring crops, and the third would be fallow. The following year the fallow land would be planted to fall crops, the land having had spring crops would be fallow, and so on.

Instead of each villein having all or most of his land together, as would modern tenants in this country, the villein's holdings were in a considerable number of narrow strips, quite commonly a dozen or more, scattered throughout the whole tilled area, the total of a villein's hold-

ings ordinarily varying from one to thirty acres, according to his status. The original purpose of this strip system was to give each villein a share in the good land and the poor land. Such a division of fields would make production very inefficient with modern methods but was not so poorly adapted to the primitive implements used in that period.

The rights of everyone on the manor, from the lord to the meanest cotter, were determined by custom. The lord could no more exact extra work from a villein than could the villein refuse to provide the lord's table with two chickens on the day on which it was customary for him to do so. The land tilled for the lord and that used by the villein were determined by custom, usually recorded on the rolls of the manor court. Each villein had the right to cut a certain amount of hay in the meadow, pasture a certain number of specified kinds of livestock in the woodland, and cut a certain amount of wood.

Not only were rights determined by custom, but so were the methods of production. By being compelled to follow custom, people's eyes of necessity were turned toward the past and they continued to use the inefficient methods of their ancestors without seriously considering the possibility of improvement. Progress could not be made until this binding influence of custom was broken.

The manor, as a whole, produced practically everything that was used. All of the agricultural products were produced on the manor's land, and those manufactured products which were not made by the serf or his family were produced by the manor's specialists or craftsmen, who were paid in kind by those for whom they worked. Usually the manor found it necessary to import some iron and salt. Occasionally merchants brought small luxuries, chiefly to the lord, for he was the only one who had a surplus of income for such expenditures.

The manorial system may be properly described as a system of rural local-community economy characterized by isolation and stagnation. We shall now trace the changes whereby the local economy was gradually replaced by the modern system.

EVOLUTION OF THE MODERN ECONOMY

The story of the decline of the distinctly local self-sufficing economy of the manor is, to a large extent, the story of the revival of trade along with the growth of towns. In northern Italy particularly, considerable trade had continued even during the chaotic period following the fall of the Roman Empire. About the eleventh century, with the establishment of more stable governments, trade spread out from the cities of northern Italy and became progressively more important in all parts of Western Europe. Towns began to grow up about this time, and either by force or by purchase these managed to secure for themselves from the

local lords or kings charters granting them the right of local self-government. Such a town paid taxes to the king or overlord, but the payment was by the town as a unit and not by the residents as individuals.

The Town Economy. Economic life in the early towns was closely regulated by organizations known as *guilds*. The earliest of these to develop in most regions was the guild of merchants, generally called the *merchant guild*. Membership in the guild was limited and was a privilege, not a right, but in general the membership consisted of residents and citizens of the town who engaged in trade. In at least the earlier days members for the most part were craftsmen who manufactured by hand the goods in which they traded. As the towns grew and the number of craftsmen increased, the separate crafts formed guilds of their own. In the course of time the importance of the merchant guild decreased, and the craft guilds increased in number and importance. The privilege of trade within each town was a monopoly reserved to members of the guilds within that town and was closely regulated by them. When and what a person might buy and sell, the way in which work must be done, the prices that might be paid or received, the time and the conditions of apprenticeship are examples of the many things in the individual's life which were subject to detailed regulation by the guilds. In their earlier stages the guilds probably served a number of useful purposes, but as time passed they interfered seriously with trade and with progress.

Town life affected the surrounding manors. The citizens of the towns were free men, not serfs. The towns have been described as islands of freedom in a sea of serfdom. A custom established itself that any serf who had escaped from his lord and lived for a year and a day within a town became a free man and might not be reduced to his former position. Trade between the towns and the surrounding manors increased. Special crafts such as tanning, shoemaking, dyeing, weaving, etc., developed and the wares were exchanged for the products of the manors. This, however, was not free trade but was restricted and regulated by the guilds.

Trade between towns developed slowly. The most notable trade between distant places in this revival was between the cities of northern Italy and the growing towns of what is now Belgium and Holland, which assumed considerable importance about 1200. During the thirteenth and fourteenth centuries a considerable trade developed among the growing towns of northern Europe, under the protection afforded against robbers and other hazards by a league of merchants known as the Hanseatic League. Originally a league of merchants, this later became a league of towns. The trade of any town with other towns was foreign trade and was regulated very stringently. Except during a fair the foreigner (person not a member of the town) was excluded from all retail trade. At all times he was burdened with fees, dues, and regulations. Tolls and

charges were numerous, vexatious, and burdensome. Each important town had its own coinage, and it was a common saying that "a penny is good only where it is struck." There were money-changers, but the very fact that coins from outside a town had to be changed into the coins of that town shows how complete was the isolation of the towns from each other.

Progress in Specialization and Trade. The introduction of gunpowder in Europe soon after 1300 helped to undermine the power of the local feudal lords and chieftains and to establish government on something like a national basis. This made trade safer, and the advantages to be derived from it caused it to grow. The first instance of extreme specialization in agriculture was in the sheep industry in England. The demand for wool by the Flemish weavers of what is now northeast France and Belgium led many English lords to enclose into large fields or sheep pastures the scattered strips previously cultivated by their villeins. This was especially true immediately following the "Black Death," a pestilence which killed over half of the population in many parts of England in 1348, in some regions almost wiping it out completely. The towns grew and attracted the serfs, many of whom escaped from the manors. Following the discovery of America, the addition to the supply of gold and silver brought by the Spanish conquerors from Mexico and Peru facilitated trade by furnishing a more abundant medium of exchange. Little by little, feudalism and the manorial system were undermined, and the local self-sufficing economy gave way to an economic system based to a greater extent on specialization, exchange, and trade. This, however, occurred at widely different times in different countries. It has been well summarized as follows:

It was the collapse of feudalism before the onslaughts of central governments, the liberation of the serfs, the development of markets, and the growth of specialized farming for the market which so changed and diversified the manors that a generalized institution was no longer visible. Villeinage sharply declined in England during the fourteenth century and slowly died out afterward. The French crown serfs were all freed by about 1350. As in England, those on private estates gained their freedom by individuals or groups, or were able to rid themselves of particular servile disabilities until the last vestiges were swept away in 1789. The last German villeins were freed by decree during the Napoleonic Wars, but it was several decades before this was fully effective in fact. Those of Russia were emancipated between 1861 and 1866, though vestiges of lordly exploitation and oppression lingered on.⁴

The Domestic System. By the fifteenth and sixteenth centuries the English guilds were losing their powers of monopolistic control of the

⁴ M. M. Knight, H. E. Barnes, and Felix Flügel, *Economic History of Europe* (Houghton Mifflin, 1928), p. 182.

handicraft trades, especially textiles, and were being replaced by the *domestic* or *putting-out* system. Under the domestic system a capitalist employer owned the materials and sometimes the tools, but the work continued to be done by handicraft workers, usually in their homes. Working at the handicraft trades in the production of articles for sale was no longer confined to the towns and was done for hire or on a piece-work basis. Under this plan there developed a fairly clear demarcation between capitalists and laborers. Important among the causes for the replacement of the guild system by the domestic system was the severity of the restrictions which the guilds attempted to impose. By overdoing regulation and restriction they encouraged competition from unorganized craftsmen outside of their numbers, and this contributed to their own downfall. It was under this domestic system that England first attained the leadership in the textile trade which she has since retained. The guild system endured on the continent of Europe much longer than in England. In France many of its features endured to the time of the French Revolution, which began in 1789. In Germany the guild system lasted well into the nineteenth century.

Mercantilism. It was during the period of the development and widespread prevalence of the domestic system of manufacture in England for two or three centuries preceding 1770 that the system of thinking on economic subjects known as mercantilism became especially dominant. This system has been briefly described in the preceding chapter, in connection with Adam Smith, who in 1776 very rigorously attacked it. It had its inception in the desires of the political rulers to establish the power and glory of the nation. The minute and detailed regulation by the government of all features of the economic life of the nation which the mercantilists attempted to enforce may be viewed as simply an attempt to put into practice on a national scale the same kinds of regulations and restrictions which the guilds had previously enforced in the towns. Mercantilism was supported by practically all the rulers and the great merchants, who dominated the political and economic life at that time. These leaders placed great emphasis on foreign trade, partly because this was a means of building up large navies, which they desired for fighting other nations, as warships were not specialized ships at that time. Foreign trade also was considered a means of securing "treasure" for the nation. The desire to sell to other nations more than was bought from them and to receive payment for the excess in "treasure," and thus build up in the nation a large supply of gold and silver, may also be explained, at least in part, by the desire to have this treasure to hire soldiers to fight their neighbors. The mercantilists had very little interest in the economic welfare of the masses of the population. They wished a dense population and low wages because they believed that

would make possible cheap production of goods to be sold to foreigners and to bring gold into the nation. This they considered more important than a high standard of living or an abundance of consumable goods.

The Industrial Revolution. About 1770 there occurred in England a series of inventions which have truly revolutionized economic life by ushering in what has come to be known as the *Industrial Revolution*. It has well been said:

In the lifetime of an ordinary man (1770–1840) the whole face of England changed; the great textile towns and the black country of the coal and iron industry grew up; canals and railroads cut through the agricultural districts to connect the industries with each other and with the outside world; a social and political revolution accompanied the economic.⁵

England had begun the period of the factory system.

The basic development which made the factory system possible was the accomplishment of James Watt and the others who, about 1785, devised a successful steam engine. For the first time in history man had available a source of power outside himself and his domestic animals which was mobile and which he could control. Before this time the power of wind and falling water had been the only supplements to human or animal effort, and they had been very unsatisfactory because they were uncontrollable. With the steam engine, men had a power source that could be placed anywhere and could be regulated in the amount of energy produced.

Besides the steam engine, the most important of the inventions of the latter part of the eighteenth century were in the textile industry. The spinning jenny of Hargreaves, patented in 1770, enabled one spinner to make eight threads, and later a hundred, instead of one. The spinning frame of Arkwright, patented in 1769, made spinning a continuous and much more rapid process and applied water power. The spinning mule of Crompton, 1779, combined the earlier inventions and made possible a finer grade of product. Later came the power loom and other inventions.

But the inventions in textile machinery were only one group of many epoch-making inventions which were developed about the same time. The first outstandingly successful canal was constructed in 1758. The successful use of coke instead of charcoal in smelting iron dated from 1735. The puddling process of making steel was invented in 1789. Early in the next century, in 1807, followed the invention in America of Fulton's successful steamboat. The steam railway was a success after 1830. The pattern of economic life became changed first in England and later in other countries.

The Industrial Revolution was not felt in France until after the French

⁵ Clive Day, *History of Commerce* (Longmans, 1923), p. 213.

Revolution and the Napoleonic wars, lasting from 1789 to 1815. Many of the features of both the guild system and the manor continued in France up to that time; nevertheless, even at that, France was the first country on the continent of Europe other than the low countries of Belgium and Holland to experience the change. Germany did not enter into an industrialized age of power-driven machinery until after 1870, or one hundred years later than England. Japan abolished feudalism and started an industrial career in 1870 but did not by any means develop so rapidly in that direction as Germany. In Russia the change from a system in rural life much resembling the manorial system, and with very little development of urban industry, to a new and unique system in both country and town, in which urban industry is playing a large part, has been in progress for only about twenty-five years.

The Industrial Revolution was not a sudden change which occurred and then ceased. It has in fact continued to the present time. One of its most important features, the development of the iron and steel industry, increased fourfold in England between 1740 and 1788 and again nearly doubled in the next eight years. But its really great development came after 1800. The world's yearly production of coal in 1800 was 11.6 million tons and of pig iron 0.8 million tons. In 1850 coal production was 81.4 million tons and pig iron 4.7 million tons. In 1913 coal production was 1,443 million tons and pig iron 77.4 million tons.⁶ The Bessemer process, which greatly cheapened the manufacture of steel, was invented about 1850. A still further epoch-making invention was the open-hearth process in 1870. The first practical gas or gasoline engine dates from about 1870, and it was successfully applied to the automobile about twenty-five years later. The modern chemical industry and the use of electricity for light and power have grown up in the last half century. To distinguish these later developments from the earlier epoch-making changes, some writers have preferred to speak of the Industrial Revolution as extending to 1830, 1840, or 1850, and to designate the great changes which have occurred since then as the *New Industrial Revolution*.

The distinction between the earlier and later phases of the Industrial Revolution is sometimes made on the basis of the predominant type of power used; the earlier phase was one of steam, the latter one, in which we still are, has been one of a greater and greater use of electricity. It may very well be that now we stand at the threshold of a third—the atomic—phase of the Industrial Revolution, which will turn out to be the most revolutionary of all.

The Agricultural Revolution. The Industrial Revolution in England was accompanied by such striking changes in agricultural technique that

⁶ *Ibid.*, p. 271.

some have denominated the latter half of the eighteenth century a period of agricultural revolution as well. In fact, the Industrial Revolution might not have been possible without the agricultural one, because improvements in agricultural technique allowed, if they did not force, the migration of laborers from the land, since now the same agricultural output could be achieved with far fewer workers. The workers coming from farms provided the labor force for the new factories that were springing up in the towns.

In England the changes in farming methods were stimulated by, and in turn stimulated, the enclosure movement, which was essentially a movement to throw together the scattered bits of land, typical of the manorial system, into larger, unified tracts, amenable to more advanced methods of cultivation. This made possible or rather necessitated a reduced agricultural population. The enclosure movement caused a good deal of suffering to those whom it forced off the land, but agricultural techniques could not be improved until they were liberated from the handicaps imposed by the manorial system. The binding force of custom had to be broken and the scattered strips of land consolidated before there could be much improvement in crops, livestock, or agricultural practices. First came the introduction of new crops. In this connection there is especially famous for pioneer work the name of Charles, or "Turnip," Townshend (1674-1738), who introduced turnips and clover and thus helped in the solution of two major problems of English agriculture, that of the fallow year for land and that of a winter feed for livestock. The fallow year was not necessary when these crops were put into rotation. Both supplied more abundant and better winter feed than meadow grass and therefore made it more feasible to carry livestock through the winter. In manorial times, with short winter feed, it was difficult to improve livestock, for in the fall all animals but the minimum of breeding stock were killed and the meat salted, and breeding stock was kept through the winter on the minimum of feed. The use of turnips and clover prepared the way for those improvements in livestock breeds associated with the name of Robert Blakewell (1725-1795) and others. England has supplied us the greatest number of our modern breeds of highly improved or pure-bred agricultural livestock. Better varieties of plants and breeds of livestock may be considered as improved tools in agricultural production, and for them we are much indebted to the Old World, especially England, though the United States during the nineteenth century was the region which led in improvement in agricultural machinery.

More recently, the countries of Europe, including England, have made many contributions to efficient scientific agriculture. One striking example is that of Liebig of Germany, who, about the middle of the last cen-

tury, laid the foundation of our modern knowledge of agricultural chemistry, soil fertility, and the effective use of commercial fertilizers.

The Enclosure Movement and Modern Agriculture in England. It has already been mentioned that as early as the fourteenth century, when the commercial production of wool became profitable, and especially when the Black Death reduced the population on the manors, there was a movement to combine the scattered strips previously held by villeins into large estates, devoted to the commercial production of wool. A considerable resumption of this enclosure movement occurred in the seventeenth century. The tenants sometimes gave up rights in the land of their own accord to find more attractive employment in the towns or elsewhere. In other cases they were simply ejected by the lords, who were able to ride roughshod over the rights of the villeins. The movement died out in the latter part of the seventeenth century but became more active again after 1740.

After that time enclosures were effected by agreements (sometimes arrived at after rather forceful persuasion on the part of the would-be encloser) in which the scattered strips of different holders were thrown together in large blocks, but anyone who was able to make out a legal claim to any of the land received either money compensation or a tract of enclosed land. After such an agreement had been reached, it was made legal by a special act of Parliament. During the latter part of the eighteenth and the early part of the nineteenth century, thousands of such enclosure bills were passed. By the middle of the nineteenth century the old system of scattered strips and *common lands*, or pastures with undistinguished ownership, had practically disappeared as a part of English rural life.

Since the enclosure movements the typical holdings of land in England have been large. English landlords as a rule do not operate their own farms; they lease the land to farmers or tenants in relatively large acreages and receive in return cash rents. Some small holdings have remained, particularly in localities where the family's income might be increased by weaving or other handieraft production. The British government by a series of legislative acts between 1882 and 1908 tried to stimulate the division of these large estates into smaller holdings. The net effect of these efforts, however, was negligible.

Landholding on the Continent. In no country on the continent of Europe has there occurred such a complete enclosure or concentration movement in landholding as in England. Northern and central France and western Germany are characterized today by small peasant holdings, frequently scattered about the community in small fields. This has made the introduction of modern agricultural machinery into those regions difficult. In parts of southern France, Italy, and Spain there

prevails a system known as *métayage*. In this the land is held by large landholders and rented to tenants on a share basis, frequently half-and-half. This system still has some features of the old manorial system. In eastern Germany the prevalent system until 1945 was one of large estates tilled by hired labor, the owners being known as *junkers*. Since the war, with the transfer of East Prussia to Poland and Russia, these estates have, in the Polish portion, at least, been broken up into small peasant holdings.

These differences in the methods of landholding have resulted in differences in agricultural practices. The French peasant with small and scattered tracts tends to cling to a self-sufficient type of economy. The large *junker* estates of eastern Germany tended to a much greater degree to practice commercial agriculture. What will be the result of the change in ownership since the Second World War cannot be foretold.

Laissez Faire. Beginning about 1750 vigorous protests were made, first in France, and later in England, against the policies known as *mercantilism*. These protests in France came mostly from that group of thinkers and writers known as the physiocrats, who were especially interested in the welfare of the tillers of the soil and believed that an improvement in the welfare of the agriculturally employed part of the population was an essential for increased national prosperity. The physiocrats protested against many features of mercantilism, including the very unjust and burdensome system of taxation which then prevailed in France, a system under which the peasants who owned only the poorest fifth of the land paid nearly all the taxes and received practically no services from the government in return. One of the general beliefs of the physiocrats, however, was that the government should allow individuals to a greater extent to carry on their economic affairs as they saw fit, without the ever-present governmental regulation at all points, which then prevailed. They gave expression to this belief in the words *laissez faire*, which mean "leave alone." In England the idea of *laissez faire* was much promoted by Adam Smith's *Wealth of Nations*, which had great influence for many years after its publication in 1776. Though the doctrine of *laissez faire* was never fully accepted in any country, it was put into practice to a considerable degree in both England and the United States during the nineteenth century. It was partly a result of the Industrial Revolution, and its acceptance in turn promoted the revolution. One feature of the acceptance of *laissez faire* in England was the adoption of a national policy of free trade, which is more fully discussed in the following paragraphs.

The Industrial Revolution and Agriculture. The Industrial Revolution had many indirect effects on agriculture. Important among these are that by stimulating the growth of cities it carried forward to a tre-

mendous extent the tendency toward specialization in production as between rural and urban regions, and by the improvements in transportation it enormously widened the market in which the producers of agricultural products compete with each other for buyers. England today produces only about one-fifth of the wheat which it consumes as bread. The other four-fifths is drawn from all the principal wheat-producing regions of the world, and all of these are in competition with each other in the search for markets. Of the total employed population in England today, less than 8 per cent is engaged in agriculture and fishing combined, whereas those engaged in commerce and transportation are $2\frac{1}{2}$ times as numerous. Eighty per cent of its population is classified as urban, and this does not include the small villages. This change has required England to secure much of her supply of raw farm products from distant regions.

In England there developed great controversy between the land-owning classes and those interested in commerce and industry, particularly in regard to the national tariff policy on food supplies. The latter desired cheap food, which with the newly developed cheaper transportation could now be most economically secured from abroad. The former were interested in high prices for their agricultural products and wished foreign products kept out of the country by protective tariffs. Transportation has become sufficiently cheapened to cause foreign competition to be felt by English agriculture as soon as the close of the Napoleonic wars in 1815 allowed trade to be more freely resumed. In the early struggle between the landowners and those interested in industry and commerce, the landowners were successful and the importation of grain was restricted by a series of tariffs known as the *Corn Laws*. This policy, however, was changed and the English *Corn Laws* were repealed, the nation being thus committed to a general policy of free trade in 1846. The effects of this repeal were not severely felt until after the American Civil War. Then, with the very greatly cheapened transportation of the railway and steamship, the grain from the rich agricultural lands of the newly opened American Middle Western states flooded the English markets—to the advantage of the commercial and industrial classes and to the great disadvantage of the landowners and the farmers who had contracts for the payment of high cash rents. This market for grain from the farms of America, however, kept prices to the American farmer, low as they were, from going as low as they otherwise would have gone.

On the Continent, France and Germany had not become sufficiently industrialized to have a problem in agricultural competition from abroad until after 1870. When it did come, they adopted a policy which differed from that followed by England. To some extent both, but especially

Germany, erected tariff walls to keep out foreign farm products. It is perhaps fair to say that military reasons played a part in this. England considered that the gains from trade were sufficient to enable her to maintain a navy powerful enough to guarantee that in case of war the sea would be kept open, and that a food supply would be assured to the great industrial population which resulted from that freedom of trade. Germany, on the other hand, decided that it could not allow itself to become so fully industrialized that it could not feed itself if its food supply from abroad was cut off by war.

Ever since the First World War, there has been evident a marked general tendency toward a policy of national self-sufficiency by the countries of Europe, manifesting itself in tariffs and other measures to keep out food supplies from abroad. This had a distinctly detrimental effect upon the foreign markets of the American farmer during the period between the two world wars. The needs of the Second World War and the postwar period opened these markets to him again. Indeed, foreign demand for American food was never so great as in the years immediately after V-J Day. With the return of the rest of the world, and Western Europe in particular, to normality the export market again fell off.

Europe Today. Throughout most of the nineteenth century, the general tendency in Europe was toward democracy and greater freedom for the individual in political matters and toward *laissez faire* in economic affairs. The countermovement, the beginning of which in the latter part of that century was just described, reached a culmination in the 1930's, by which time Russia, Italy, and Germany, not to mention a score of lesser countries, were under dictatorships which laid the heaviest restrictions on personal freedom as well as on freedom of economic action. Indeed it was the attempt of the fascist dictatorships to attain economic self-sufficiency or "autarchy" that was in part responsible for the Second World War.

Since the war, the growing tendency for government control over economic affairs has continued unchecked. As we have noted, the principal countries of Western Europe have adopted semisocialist regimes. Though economic activity in these countries is under a high degree of regulation, a large measure, perhaps as large as in the United States, of personal and civil liberty has been retained. Whether control over economic affairs can coexist with freedom in personal and civil affairs is, indeed, the greatest political and social question of our times.

The European Contribution. Modern industrial and agricultural techniques originated in Europe. The other important features of our economic life, like the institutions of banking, credit, insurance, and corporate business organization, are also European in origin. All of these

were first developed by the merchant or trading classes of the cities of northern Italy during several centuries preceding the discovery of America. Thence they spread to northern Europe, particularly England, and with modifications were introduced into this country. Europe also lent us capital to build our railroads and develop our resources and has been our chief customer in trade. It has affected our economic life in the past, is doing so at present, and will continue to do so in the future. In any thorough consideration of our economic problems we cannot ignore European influences. Not only do our economic institutions stem from European sources, but our science, literature, and art—in short, our culture—also derive from that continent, as do the vast majority of this country's inhabitants.

Questions and Problems

1. Why should students of our present economic system study economic history?
2. A frequent method of argument concerning the proper solution of present-day problems is to quote an analogy from history and indicate what happened in that earlier period when one of several methods of solution was attempted. To what degree is this method valid?
3. Compare or contrast the economic organization of the manorial economy with that of the present time. Point out the weaknesses of the manorial economy.
4. Compare or contrast the guilds with modern labor unions and with present-day merchant or trade associations.
5. Compare the guild system and the domestic system. Place each as to time.
6. To what extent is mercantilist thinking still prevalent today?
7. How did the Industrial Revolution affect agriculture?
8. Trace the chief events in the change in landholding in England and Western Europe from the time of the manorial system to the present time.
9. Trace the chief changes in tariff policy in England and continental Europe from the time of the guild system to the present time.
10. Discuss the past and present influence of Europe on American agriculture.

Suggested Readings

1. H. G. Wells, *The Outline of History* (1929), presents an interesting brief account of the economic life of primitive man.
2. Clive Day, *Economic Development in Modern Europe* (1933), is an excellent general history.
3. Frederick L. Nussbaum, *A History of the Economic Institutions of Modern Europe* (1933), is a good short history.
4. Henri See, *Modern Capitalism* (1928), is an interesting brief account of the development of our present economic organization.
5. G. M. Modlin and F. T. de Vyver, *Development of Economic Society* (1938), is both brief and readable and offers an excellent interpretation of economic history.
6. Paul Mantoux, *The Industrial Revolution in the Eighteenth Century* (1934), gives a very interesting account of a very important period.

CHAPTER 3

AMERICAN ECONOMIC DEVELOPMENT

The evolution of the American economy, though definitely related to European developments, has had distinctive features which are significant to the student of our present economic life. From the time of the colonists, both the rapidity and the direction of change in methods of production and in general organization of economic life have been influenced by American conditions. Outstanding among these conditions have been the physical environment, particularly the richness of resources; the transportation conditions, both inland and on the ocean; and the progressive character of the people. Among the chief results of these circumstances have been a high degree of specialization and the highest per capita income ever enjoyed by a nation.

Return to Self-sufficiency. Upon their arrival in the New World the intrepid colonists found that they must abandon the more specialized production methods which had been developed in England by 1600 and revert to a self-sufficient economy. Particularly in the colonies north of Maryland, the distance from the Old World, the high cost of transportation, and the lack of a surplus of valuable commodities in demand abroad with which to purchase imported manufactured goods prevented reliance on England. Even in the South, self-sufficiency was the rule until the importation of manufactured goods was facilitated by the development of surpluses of tobacco, indigo, and naval stores—products of high value in relation to bulk—which were in foreign demand.

Although these older sections along the Atlantic seaboard gradually developed towns for manufacturing and trade, accompanied by some specialization by farmers in certain products, each pioneer, as the fringe of civilization moved westward following the Revolutionary War, was forced to revert to self-sufficiency. The lack of transportation facilities prevented the sale of his products in the towns of the coast and the purchase, in turn, of manufactured goods. The description contained in the following statement of equipment, production methods, and products of the pioneers of the Ohio Valley would apply almost equally well to other pioneer sections:

From the point of view of industry, pioneer life in the central Mississippi Valley displayed three great features. First, the fewness and simplicity of the

tools with which the newcomers did their great work; second, the fact that manufactures were in the true sense of the word "manufactures," fashioned by hand; and finally, the home consumption of almost the entire product. "With no tools but an axe and an auger," wrote Judge Hall, "the settler built his cabin, with a chimney built of sticks, and a door hung on wooden hinges, and confined with a wooden latch; chairs, tables, and bedsteads were fabricated with the same unwieldy tools. A horse, a yoke of cattle, a sheep or two, usually made up the list of their possessions, outside a few household goods of the most primitive kind. They would select the land for their future home, erect a rude log cabin, and begin the work of clearing the land of timber, ready for seed time and harvest." For household utensils, there were a few pewter dishes and spoons, knives, forks, tin cups for coffee and milk, a water pail, and a small gourd or calabash for water, with a pot and an iron Dutch oven. The hominy mortar and the hand mill added to the equipment. Farm implements were of home construction. "Yokes for oxen, and harness for horses, the carts and wagons in daily use, without tires, boxes or iron were all manufactured as occasion required by the self-taught artificers."¹

The self-sufficiency was not always that of a family but frequently that of a community. Craftsmen, such as carpenters and smiths, soon found that there was enough demand for their skill that they might earn a living in their trade. Part or all of their pay might be in kind, since there was a shortage of money in the colonies and later in the pioneer sections to the west. Farmers or housewives produced a surplus of those particular goods in which they were unusually skilled, whether it be ox yokes or mittens, which they disposed of through barter. Surplus farm produce was bartered, if a buyer could be found. Later when there were sufficient purchase and sale of goods, whether locally produced or brought in from elsewhere, to warrant a store in a community, this institution became the center of local trade.

The trade relations of the pioneer communities with the outside were confined to such necessities as were not locally available, as iron and gunpowder, and to the few manufactured luxuries which the pioneers could afford. To pay for these goods the buyers sent those products which had the largest value in relation to bulk, such as furs or distilled liquors.

BEGINNINGS OF SPECIALIZATION

The evolution from this simple organization of a pioneer economy to a system of production for sale awaited the growth of markets for surplus farm products and the development of facilities for cheap land transportation. This market could come with the growth of nearby urban areas devoted to manufacture and trade. Again the market out-

¹ Isaac Lippincott. "Pioneer Industry in the West," *Journal of Political Economy*, Vol. 18, No. 4, p. 274.

lets might be opened by improving transportation, making possible profitable sale of farm goods in distant cities, even in foreign countries. The agricultural specialization consequent on the opening of consuming areas might be only an urban-rural division of activities in which the farmer produced raw materials primarily, plus some food for his family, while the town concentrated on manufacturing and commerce. Or the specialization in agriculture might be carried to the point that each farm produced one article primarily, supplying but a very small part of the family living. Such a farming system is termed *one-crop farming* in contrast to *diversified*, or *general, farming*, in which a number of articles for sale are grown on the same farm.

Specialization in the North Atlantic Region. When we turn to the development of commercial agriculture in the major regions of the country, we find that each section faced unique problems based on its soil and climate or its transportation facilities. In New England, for instance, where both a large town population and an export market were lacking, agriculture changed little in methods of production before 1800, nor was there much change in the general organization of economic life. More rapid urban growth in this area came during the period from 1800 to 1815, when this country was cut off from the industrial products of England by the Embargo and Nonintercourse acts and the War of 1812. The practice of manufacturing to supply not only New England but other sections of the country developed in its coastal cities, and this promoted the development of New England's agricultural production for sale. But the typical New England farmer never carried specialization to the extreme to which it has been carried in the South, as noted below.

In the Middle Atlantic section rural-urban separation of activities began before the Revolutionary War and was facilitated by the preceding growth of towns. Again, as in New England, one-crop farming has never gained a firm foothold. Although the typical small farmer was still largely self-sufficient at the time of the Revolution, he had begun to produce a surplus of wheat and other cereals, livestock, dairy products, and some fruit and vegetables to be sold in the towns or to be exported to the West Indies. The navigable Mohawk, Hudson, Delaware, and Schuylkill rivers furnished cheap transportation for bulky farm products from the inland areas to the coastal towns.

One-crop Farming in the South. Before 1700 Southern agriculture came to be specialized both in its dependence on urban-manufactured goods (from England) and in the development of one-crop farming. Although lacking large towns within their own boundaries, the colonists of this region were favored by the fact that their rich soil, ample moisture, and mild climate encouraged the production of commodities of high value in relation to bulk, for which there was an export market: tobacco,

rice, and, later, indigo and cotton. The production of these crops also was found to be adapted to the use of Negro slave labor, which contributed to the profits. Tobacco culture expanded rapidly in Virginia and Maryland, stimulated by the combined influence of natural advantages and a monopoly of the English market. By 1671 eighty ships came annually to carry the tobacco crop to Europe, bringing with them the industrial products of England. After the Revolution the center of tobacco growing moved westward to Kentucky.

Tobacco was replaced by cotton as the "king" of the Southland's agriculture, when, following the invention of the cotton gin by Eli Whitney in 1793, the growing of short-staple cotton became practicable on a large scale. By 1820 cotton production had risen to 160 million pounds, of which 78 per cent was exported. By the time of the Civil War, production was 5,387,000 bales of 500 pounds each, of which 65 per cent was exported.

The profitable cash market for both tobacco and cotton encouraged the Southern plantation owners to use most of their land in the production of one of these cash crops, even relying on the outside for much of the food. The Ohio Valley early found that the South was an excellent market for surplus wheat and meat. Thus the agriculture of the South became largely dependent for income on the price of one product, as compared to the prices of products bought.

The specialization in cotton growing in the South grew not only out of the peculiar adaptability of its soil and climate to that crop but also out of the fact that Negro slavery had already been introduced and supplied cheap unskilled labor for the great amount of handwork involved in cultivation and harvesting. Cotton fastened the institution of slavery on the South until it was broken at the time of the Civil War. The continued production of cheap cotton depends on an abundant labor supply able to grow cotton but not able readily to shift to more profitable employment.

TRANSPORTATION AND THE WESTWARD MOVEMENT

The Interior Awaits Transportation. The development of commercial agriculture west of the Appalachian Mountains depended on improvements in transportation which would open the markets of the Atlantic coast and of the rest of the world for the products of this fertile area. The progress of farming in the Ohio Valley following the building of canals and railroads well illustrates this principle. To obtain even the smallest amount of manufactured products, the settlers had to produce a surplus for sale. Their fertile lands solved the problem of production but not that of marketing the surplus, for transporting freight even from Pittsburgh to Philadelphia then cost \$125 per ton. Trade relations

with the cities of the Atlantic coast and with Europe were made difficult by the Appalachian barrier and the closing of trade down the Mississippi River by the Spanish prior to 1795. Corn could be converted into livestock, which could be driven to market, or into corn whisky, which was sufficiently concentrated in value to be transportable for long distance by wagon or pack train, but the volume of production depending on these outlets was quite limited. Even the opening of the Mississippi by treaty with Spain in 1795 and the fact that the whole river came into the possession of the United States with the purchase of Louisiana in 1803 only partially solved the problem of transportation to markets, for the route was south, not east. At first flatboats were floated down the river loaded with livestock and grain. By 1816 the development of the steamboat allowed a return trip, bringing industrial products at lower costs than were involved in transporting these articles over the Appalachians.

The Effects of the Canals. The completion of the Erie Canal in 1825 provided a more direct connection with the Atlantic coast and world markets. Whereas to send freight from Buffalo on Lake Erie to New York had cost \$100 per ton, the rate now dropped to \$15. Spurred on by the success of this canal, the new states of the Ohio Valley proceeded to build canals leading to various of the Great Lakes, so that farmers might have an all-water route to the Atlantic Ocean. Some canals even connected the Ohio and Mississippi rivers with the Great Lakes. Then settlers on these rivers and their tributaries no longer needed to send their goods by New Orleans.

Effect of the Railroads. These canals had hardly been completed when the rapid development of railroads after 1840 forced inland water transportation into disuse. The railroad is not limited in its choice of routes by minor elevations, is not seriously affected by freezing or low water, and, above all, offers rapid transportation. The main railroad lines constructed led logically from the highly developed Atlantic coast region westward through the passes in the Appalachians. Thus the diversion of most of the surplus farm products of the upper Mississippi Valley to cities and ports of the older states was completed.

After the completion of the thirteen-mile Baltimore and Ohio Railroad in 1830, railroad construction continued steadily, so that by 1860 the nation had over 30,000 miles of road. The decade prior to this date saw the combination of many of the short lines into systems leading from the Atlantic coast to the Ohio Valley. The two decades of 1870 to 1890 were those of most rapid building, the total mileage constructed being 167,191 by the latter date. By that time the general framework of our present railroad transportation system had been laid; later building has consisted mostly of "feeders" and crosslines, and double tracking. The

total track mileage of reporting railways in 1928 was 427,750, of which 260,546 was first main track, 42,432 second or other additional track, and 124,772 yard track or siding. By 1945 the total had declined to 398,054.

The railroads made possible regional specialization in certain farm products, the type depending largely on the natural characteristics of the section. In the region north of the Ohio River, specialization has not been carried to the extreme that it has in the South; still this area has become famous for its corn and livestock industry. With the range area across the Mississippi to supply feeder cattle and lambs, and with the densely settled Atlantic coast region, and later the large cities of this same upper Mississippi region, to consume the meat, including hog products, the farmers of the region north of the Ohio and Missouri rivers came to concentrate on corn production, the growing of hogs, and the fattening of beef cattle and lambs. The railroads brought feeders from the West, and through the use of the refrigerator car, invented in 1868 and coming into wide use in the eighties, the meat, not the live animals, could be shipped to all parts of the Eastern United States, reaching the consumer in excellent condition. Thirty beef carcasses could be put into one car as compared to eighteen live steers. Thus the packing industry came to be concentrated near the producer, that is, in the Middle West.

By the time that pioneers were ready to cross the Mississippi in large numbers, railroads had been extended throughout the Ohio Valley and these systems crossed the river and facilitated development. After 1860 the center of wheat production tended to move west of the Mississippi. Between 1870 and 1890 the Red River Valley of the Northwest was opened by the extension of railroad lines to that area. Meanwhile settlement in Kansas, Nebraska, and other western states continued at a rapid rate. Wheat exports more than tripled between 1870 and 1880, a fact which did much to undermine the agriculture of Europe.

Still farther west were the Rocky Mountain and Pacific coast regions, awaiting the transcontinental railroads to bring settlers and provide a means of reaching distant markets. The Union Pacific-Central Pacific transcontinental span was completed in 1869, followed by parallel lines to the Pacific Northwest and to southern California in the later decades.

Not only did the railroads permit the early development of commercial agriculture in the trans-Mississippi region, but they assisted the development of much one-crop farming. Much of the Far Western region is not adapted to the general mixed farming prevailing in the upper Mississippi Valley. Some lands are adapted to wheat and wheat only, others are suited only for grazing, and some of the irrigated regions have such outstanding advantages in fruit and vegetable growing that it is uneco-

nomical to use them for any other purpose. As a result, wheat is grown in the Northwest and in the Pacific Northwest on large farms, which produce almost nothing else than that article for sale. Under such extreme specialization low prices in a given year for the product grown are especially burdensome, the penalty of "putting all of the eggs in one basket."

Motives for Moving West. In the South the rapid deterioration of the soil under one-crop farming encouraged the taking up of cheap new land to the west rather than the rebuilding of the old soil. Then with the practicability of growing the short-staple upland cotton, following the development of the gin and with the price supported by the enlarged demand based on the new processes for making cloth developed in England before 1800, there was a general movement to the higher inland areas. Whereas early settlement tended to follow the streams, the whole area became a feasible place for cotton production with the development of the railroads. Farther and farther west went cotton culture, until the black-soil region of Texas was found to be the best of all following the acquisition of that area in 1845. The westward movement of cotton was stopped by the arid region of the upper Rio Grande until the recent development of long-staple cotton production under irrigation as far west as California.

The settlers who occupied the area farther north were influenced by a variety of motives to undertake pioneer life. First, population was increasing in the old regions of the Atlantic coast, primarily because of the rapid natural increase of a new country and because of some immigration. Of the increase in population from 5 million in 1800 to 30 million in 1860, probably not over 5.5 million were immigrants, the large remainder being natural increase. Whereas only 4,000 to 5,000 immigrants a year were reaching American shores prior to 1812, following the close of the War of 1812 immigrants came in ever-increasing numbers to escape the economic burdens of the Napoleonic wars or the repression of reactionary European governments. This rapidly increasing population found its best economic opportunities in agriculture. New lands were put into use. After the Civil War came the great immigration from northern Europe, a class who settled to a very large extent in rural regions. In the single year 1882, 788,922 immigrants came to our shores. Even this figure was surpassed in the 1905 to 1915 period of heavy immigration from southern Europe, more of whom became laborers in mines and factories. In the single year 1907, 1,285,349 new residents arrived.

Second, the political and economic equality and religious liberality of the West appealed to those who resented the religious intolerance and the aristocratic control of government in New England.

Third, the publicity campaigns of land companies and land speculators through billboards, newspaper advertisements, and speeches gave glowing accounts of the economic possibilities of the new country. Large acreages had been sold to a few land companies prior to the smaller holdings policy adopted in 1796. Western lands granted to Revolutionary War soldiers by states and by the national government fell into the hands of speculators.

Fourth, the desire to profit by a rise in land values was the most influential of all the motives. The land could be obtained for little or nothing except the labor of clearing and breaking, but, as population grew and transportation facilities developed, this land would rise in value. Some pioneers moved three or four times, each time selling the land and moving farther west for more free land. Although this possibility of gain speeded settlement, it had vicious effects on agriculture. If a certain portion of the farmers are interested primarily not in the profits from their produce but in rising land values, they are willing to enter production under conditions in which the price received for produce will not cover costs. Under these conditions not only do they themselves suffer loss but, by increasing the total output of goods, they force down prices for those who are in business for the general income from the sale of their crops and livestock. This is what occurred in the settlement of the West, especially during the two decades following the Civil War.

Land Policy. The policy for the disposal of the public domain followed by the Federal government during the period of the great westward movement was designed to encourage that movement. At first the government imitated the English policy of selling land in large blocks to colonizing companies, hoping incidentally to obtain some revenue. This plan did not prove successful, and when in 1796 Congress provided for the sale of land on credit in units of a township but later in blocks as small as a section, actual settlers could purchase directly from the government. In 1820 the government adopted the policy of cash sales, but since it would accept the notes of western banks which in turn would lend on mortgages, this policy did not hinder settlement. The principle of preemption, whereby pioneers who settled ahead of the surveys could purchase their land at \$1.25 per acre when the surveyors and civilization caught up with them, was recognized by law in 1841 and further assisted the taking up of land. The policy of encouraging settlement reached its logical end in the Homestead Law of 1862, which did away with payment for the land, requiring only five years' residence and development. Those who had served in the Civil War were permitted to count their years of service as part of their five years' residence on the land. During this whole period certain lands were being set aside for education and

granted to railroads to encourage their westward expansion. This act has since provided a large source of funds for education in those states in which the lands or the proceeds from their sale were not dissipated.

Although the liberal land policy greatly aided settlement and provided a new home for those discontented with their lot in Europe or in the Eastern states, it has had its ill effects. First, cheap land encouraged "soil mining," or the practice of destroying the original fertility of the soil. Second, the Homestead Law treated all land alike, whether adapted to general farming or to range uses only. The unit which might be homesteaded remained 160 acres until altered to a limited extent after 1900. Third, land valuable for timber or mineral deposits could be taken in the same manner as agricultural land, and thereby the government allowed a large part of these resources to go into private hands for private profit. An incidental result has been the destruction of watersheds, leading to floods and a lack of that continuity of stream flow which is essential to the use of rivers for navigation, irrigation, and electric-power production. The good agricultural land has all been taken, and now the public interest has turned to conservation, particularly of those timber and mineral resources remaining in public control.

Progress of the Westward Movement. Since a minimum population was required before a territory might be admitted to the Union as a state, the dates of addition of states should indicate the progress of the westward movement. As early as 1792 Kentucky was admitted to statehood and Tennessee in 1796. The Ohio Valley was carved into states with the admission of Ohio in 1813, Indiana in 1816, Illinois in 1818, and Michigan in 1837. The population of the area comprising these states grew from 272,324 in 1810 to 6,926,884 in 1860. By the fifties, streams of settlers poured into Iowa. Missouri was already fairly well settled, and Kansas had sufficient population to carry on a bloody internal struggle over slavery. With the gold rush to California in 1849, the rapid settlement of the Pacific region began. In the following decades, the intervening territory was taken up. California became a state in 1850, Colorado in 1876, and Arizona, the newest state, in 1913.

Regional Readjustments. Many of the developments of the Mississippi Valley caused readjustments in the agricultural system of the Atlantic seaboard states. The opening of the Erie Canal forced New England largely out of grain and, to a certain extent, out of meat production. Later, when the cheap butter of Wisconsin came to the East-coast dairy markets, only those producers in the latter region who could market fluid milk at a relatively high price remained, to any large extent, in the dairy industry. The Middle Atlantic states could not compete with the Corn Belt in supplying the growing urban population with staple foods. Farmers of this coastal region have had to turn mostly toward milk,

poultry, fruit, and vegetable production. But even in these industries their position is not secure. Cream can be sent from Minnesota, eggs from the Pacific coast, and fruit and vegetables from California. Not being able to appeal for tariff protection against other parts of the United States, the Atlantic coast farmers have been forced to change to the production of those articles in which their location or other natural factors gave them a competitive advantage.

Developments to the south and west brought additional readjustments. The fruit and vegetables of the South Atlantic states and of Texas and Louisiana, because they ripen earlier than those of states farther north, not only supply the earlier market but also supply a greater part of the year's total consumption than formerly. This is illustrated by potatoes, of which the new crop from the South invades the Northern market in considerable volume as early as May, thus offering competition to the preceding year's crop. Citrus fruit offers competition during the winter to apples, and added to this is the fact that Washington has come to produce about one-fourth of the commercial apples. The eggs from Pacific coast henneries specializing in the production of high-quality infertile eggs sell at a marked premium above the farm eggs of the Middle West. The irrigated sections of the Far West not only often produce fruits and vegetables of higher quality because of the controlled moisture conditions, but their high yields have in many instances more than offset the additional costs of irrigation and transportation and enabled these sections to offer competition on a price basis to Eastern producers.

Agricultural Discontent. The period from 1870 to 1896 was one of the most trying in the history of American agriculture—a period when the discontent took the form of powerful farmer movements. The discontent arose from the low price of farm products, the wholesale prices of farm products declining about 45 per cent during this period and reaching a point 25 per cent below the prices before the Civil War. Farmers had borrowed money to improve their farms, bought equipment, and in some cases bought their land at the higher prices prevailing during the years of the Civil War and immediately after, only to find that each year their produce was of less value, a fact which made the burden of debt difficult to bear.

The decline in prices was in part only a reflection of the world-wide decline in prices of all kinds, agricultural and nonagricultural, but in addition it was the effect of the rapid increase of farm products coming from the new lands opened by the railroad extensions and improved farm machinery of these decades. Urban industry, by adopting new methods which lowered costs and by taking advantage of increasing demand for manufactured products, was able to offset the effects of declining prices,

but not so farming. Between 1870 and 1880, the production of wheat doubled, of oats nearly doubled, and of corn increased 50 per cent. Such rapidly increased output could not be marketed at expected prices, and the logical result was that discontent prevailed in the grain states of the upper Mississippi Valley.

Other events, largely economic in character, irritated the farmers. In the South the plantation system had been destroyed by the war, and the process of evolving a new farming system was painful, particularly when social and political adjustments had to be made in the light of the new freedom of the Negroes. All through the farming regions, the governmental favors bestowed on the railroads, the size of these corporations, their unfair business practices, and the fact that transportation costs were a large proportion of the prices received for farm products led to widespread demand for railroad regulation. A result was the Interstate Commerce Act of 1887. The rapid growth of cities, with their relatively greater prosperity and growing political strength, irritated the poverty-stricken farmers. Altogether, conditions were ripe for farmer movements.

During this twenty-five-year period, farmers supported by their votes two political movements, the greenback and free-silver monetary programs, and formed two powerful organizations of their own, the Grange and the Farmers' Alliance. The Grange, founded in 1868, started primarily as a social and educational organization but soon undertook economic and political activities of interest to farmers. Remaining essentially nonpartisan in politics, its members threw their support to those who would promote their program. They supported such laws as that providing for rural mail delivery. They campaigned for the regulation of railroad rates to improve the farmers' economic position. The low prices of the products of the farm brought economic issues to the front. At the 1874 national meeting the members of the Grange resolved: "We propose meeting together, talking together, working together, buying together, selling together." From the early 1870's the organization supported widespread plans of cooperative buying and selling. At the peak of its power in the seventies the Grange had perhaps 700,000 members. It underwent a decline and then a revival, and, though its influence is not so spectacular at present as it was at that time, it is still a powerful farm organization.

The Farmers' Alliance, started in 1874, concerned itself primarily with political activity, founding the People's party, but it also supported cooperative buying and selling. After the defeat of free silver in 1896, the party ceased to exist. Although the tendency for prices to rise after 1896 destroyed the strongest incentive to farmer organization, other organizations sprang up, particularly the American Society of Equity in

1902 and the Farmers' Union in the same year. In large part the expression of the farmers' will in political and economic matters has been less influential than it might have been, if, instead of several organizations, often at odds with each other, there had been one organization through which agriculture could have presented a united front.

The farmers of this period had no deep-seated interest in any particular monetary theory, but they did want higher prices. Therefore, when prices began to fall after the Civil War, they supported the Greenback party's argument that the amount of inconvertible greenbacks outstanding should not be decreased but increased. When that issue was lost by the provision for the return of the greenbacks to convertibility into gold in 1879, the farmer support soon turned to free silver. It was believed that if the free coinage of silver at the ratio of sixteen ounces of silver to one of gold could be restored, the mines newly discovered could put out so much silver that prices would rise to a profitable level. When the free-silver issue was lost in 1896, the farmers dropped the campaign for cheap money, not because of defeat but because at about the same time the price level turned upward as a result of marked increases in the world's production of gold.

AGRICULTURAL IMPROVEMENTS IN THE UNITED STATES

Labor Shortage and the Use of Machinery. American farming conditions offered strong incentives to the development and use of machinery. The continued shortage of labor turned attention to labor-saving machinery as a device to lower production costs. The relatively large fields of the typical American farm offered more opportunity for the use of machines than the small holdings prevalent in much of continental Europe. The invention of the cotton gin in 1793 has been referred to. Improvements in the plow had been made by Thomas Jefferson as early as 1798, and John Deere made his steel plow in 1837. By the Civil War the corn planter and the two-horse cultivator had been added to the list of production machines.

Machine methods were applied to harvesting by the work of Manning and his mower of 1831, that of McCormick and his reaper of 1834, and finally by the introduction of the thresher about 1850. Thus the three decades prior to the Civil War constituted a period of application of machinery to agriculture, and, as these machines were improved and their practicability demonstrated, they came into widespread use. Then came the self-binder, the significance of which has been pointed out by Professor B. H. Hibbard:

Invented in Wisconsin about 1869, it soon became a necessity in the wheat fields of the farther west. Men who had been able to raise only twenty acres

of wheat, limited as they were by the exigencies of harvest, could now grow four or five times that amount, and they did it.²

The fact that each of these machines has since been improved, and, as a rule, the size and capacity of the individual machine increased, has led to the use of relatively less farm labor. Sometimes two principles have been combined, as the header and the thresher into the combined harvester. Machinery has invaded types of work in which great care is required, as in milking cows and in preparing and preserving fruits and vegetables. For the harvesting of some few crops requiring large amounts of hand labor, such as fruits and cotton, no adequate machinery has yet been developed, although the problem of devising a practical cotton harvester seems very close to solution.

With the introduction of the internal-combustion engine, a new machine age has come to agriculture. Mechanical power has replaced human muscles in performing many of the heavy duties of the farm, such

TABLE 5. TRACTORS AND TRUCKS ON FARMS, JANUARY 1
(Hundreds of thousands)

Year	Tractors	Motor trucks
1920	246	139
1930	920	900
1935	1,048	890
1940	1,545	1,047
1945	2,425	1,460
1946	2,585	1,550
1947	2,800	1,730

SOURCE: *Agricultural Statistics, 1947*, p. 550.

as pumping water and cutting feed. The tractor and truck have revolutionized farm motive power, and the introduction of the Diesel engine promises to have further far-reaching effects.

Rural electrification is opening a new source of power, not to mention light and heat, for farmers—and their wives. In 1930, about 650,000 farms were electrified; by 1935, when the Rural Electrification Administration commenced its operations, this number had increased only to 800,000, but by 1945, over 3,000,000 farms, about half the total in the United States, had electricity.

Table 5, which shows the number of tractors and trucks on farms for certain years since 1920, illustrates the enormous increase in the use of mechanical power on farms, an increase which, it may be noted, continued at a very rapid pace through the war period. In studying the

² B. H. Hibbard, *Marketing Agricultural Products* (Appleton, 1921), p. 194.

figures, it should be remembered that the increase in the use of tractors is a good index to the increased use of other types of farm machinery.

The whole farming system has felt the effect of the gas engine. In some cases larger farms are now more profitable. More costs, such as that for gasoline, involve cash outlays. The absolute decline in the number of horses and mules since 1921 has released from the production of feed for these animals about 50 million acres, or about 14 per cent of the land in crops, and has made this land available for the production of human foods.

Crop Improvement. New agricultural machinery has been only one aspect of agricultural improvement, for improvement has come in the care of the soil, type and care of crops, and in breeding and feeding livestock. When the first richness of new soil passed, farmers became aware that the maintenance of soil fertility required study and attention. At the same time, the possibilities offered by improved varieties of crops became evident. Although there was interest in these topics at an earlier date, rapid progress did not come until the advent of governmental agencies into agricultural research in the fourth quarter of the last century.

Government Aid in Research. Beginning with a \$1,000 appropriation in 1838 for the collection of agricultural statistics and for other agricultural purposes, the Federal appropriation for the research, extension, and regulative activities of the Department of Agriculture reached the large sum of \$157,152,900 for 1948. Federal aid for the establishment of state agricultural colleges was provided in the Morrill Act of 1862—a momentous step. There followed laws providing Federal aid to state experimental work: the Hatch Act of 1887, the Adams Act of 1906, the Purnell Act of 1925, and the Bankhead-Jones Act of 1935. The spreading of agricultural knowledge was facilitated by Federal aid through the Smith-Lever Act of 1914, granting funds for extension work in agriculture and home economics. Among the more important pieces of recent legislation were the laws setting up the four great regional laboratories of the U.S. Department of Agriculture (1938) and the Hope-Flanagan Act of 1946, authorizing an enormous expansion in marketing research. Millions of dollars have been appropriated by states, in part to match Federal funds but also to carry on additional research and education in agriculture.

From the awakened interest and liberal appropriations to further agricultural improvement, particularly in technical problems of production, have come remarkable results. New varieties of crops have been developed which are more productive, disease resistant, or adapted to peculiar needs of various soils and climates. A composite index of acre yields shows that yields were nearly 20 per cent higher on the average

from 1940 to 1945 as compared with the prewar period. Livestock breeds have been developed so that each pound of feed brings more milk, meat, or other products. In 1930 there were only 9 per cent more animal units on farms than in 1897 to 1901, but during the same period meat, milk, and egg production increased 55 per cent. There was a further increase in productivity of about 10 per cent above the 1930 level in the 1940's.

Soil Conservation. In the preceding pages frequent reference has been made to the tendency of American farmers to "mine" their soil. This tendency continued unchecked except for the efforts of individual farmers or unusually zealous county agents till the mid-1930's, when the public interest in the problem of erosion was aroused by a series of reports emanating from the National Resources Planning Board and the U.S. Department of Agriculture, which were given strikingly dramatic emphasis by the great dust storms attendant upon the droughts of 1934 and 1936. As a result of this interest, and of a desire on the part of the administration at that time to reduce the acreage of row crops like cotton and corn, the Department of Agriculture has spent in the neighborhood of 300 million dollars a year in payments to farmers for carrying out conservation practices such as terracing, contour plowing, the planting of cover crops, liming, and fertilization. The Soil Conservation Service of the Department of Agriculture and the Tennessee Valley Authority have set up a large number of demonstration projects, and many states have passed laws permitting the establishment of conservation districts which can enforce conservation practices in the area included.

The benefits of this program for the restoration of our soil fertility, the extensive use of machinery, modern methods of cultivation, and improved strains of plants and breeds of animals were especially noticeable during the Second World War and the period immediately after, when the world's demand for American farm products was so great. In the years after 1941, farm output was about one-third greater than it had been in the immediate prewar period and two-thirds greater than it had been in 1910. Yet the total farm population in 1946 was 27,590,000 as compared to 30,000,000 in 1940 and 32,000,000 in 1910, and total farm employment was 9,844,000 in 1945 compared to 10,585,000 in 1940 and 11,173,000 in 1930. Output per worker has obviously increased very materially in the course of the last generation. In exact figures, taking the average of the period 1935 to 1939 as 100, the output was 97 in 1920, 100 in 1930, 110 in 1940, and 137 in 1945.

URBAN INDUSTRIAL DEVELOPMENT

As in England, industrialization in America started with textiles. Samuel Slater's cotton mill of 1790 at Pawtucket was the first factory in

the modern sense. The real beginning of the factory system occurred during the period from 1800 to 1815, when domestic producers were spared the competition of goods from the established plants of Great Britain. At first, American factories concentrated on the making of the more bulky, cheaper, or coarser grades of products, since the transportation costs from Europe formed a relatively larger part of the total value of such goods. Coarse solid-color cloth, rolled metal sheets, and nails were typical products. But with the increased demand for machines for manufacturing and transportation, the metal industries began to put out more refined products: locomotives, textile machinery, and steam engines, and eventually typewriters, watches, and other such fine mechanisms.

Growth of Manufacturing. The rapid industrial growth of this country has taken place since the Civil War. The data in Table 6 depict this

TABLE 6. GROWTH OF MANUFACTURE

Year	Number of establishments	Average number of wage earners	Wages (000 omitted)	Value of product (000 omitted)
1849*	123,025	957,059	\$ 236,755	\$ 1,019,107
1869*	252,148	2,053,996	620,467†	3,385,860†
1889*	355,405	4,251,535	1,891,220	9,372,379
1899*	512,191	5,306,143	2,320,938	13,000,149
1899*	204,750	4,501,919	1,892,574	11,032,951
1909*	264,826	6,262,242	3,205,548	19,945,249
1919‡	210,268	8,423,964	9,611,002	59,964,027
1929‡	206,663	8,369,705	10,884,919	67,994,041
1937‡	166,794	8,569,231	10,112,883	60,712,872
1939‡	184,230	7,886,567	9,089,941	56,843,025

SOURCE: *U.S. Census of Manufactures, 1940.*

* For all establishments having products valued at \$500 or more.

† For all establishments having products valued at \$5,000 or more. The figures from 1899 on exclude hand and neighborhood industries.

‡ Reduced to gold basis.

growth, showing that by 1899 the value of manufactured goods was \$13,000,149,000, or thirteen times that of 1849. By 1929 this figure had increased to \$67,994,000,000, which, even if allowance is made for the fact that wholesale prices were higher in 1929, shows a volume of products twenty times as great as in 1849. The depression years after 1929 produced an interruption in the steady growth observable before, but by 1937, the year 1929 was almost equaled, allowing for the lower prices in 1937, and was thereafter greatly exceeded. Unfortunately, comparable census figures for recent years are lacking, but other measures indicate that industrial production after the Second World War was twice the 1929 level.

The data on "Average number of wage earners" employed and "Number of establishments" emphasize the changes in the methods of production more than does the volume. The data on number of plants prior to 1899 are not comparable with those after that date, since in the earlier period hand and neighborhood industries were included. Yet a comparison of the data for the beginning and end of each of these periods will show that neither the number of plants nor the number of employees was increasing so rapidly as the output. The former fact illustrates the concentration of manufacturing into larger plants. The latter fact points to the introduction of more and larger machinery, that is, an increasing proportion of the work was done by machines. Since 1900 American manufacturing has come to produce more finished and intricate articles, particularly those adapted to large-scale machine production. The intro-

TABLE 7. DISTRIBUTION OF THE POPULATION OF THE UNITED STATES BETWEEN URBAN AND RURAL REGIONS, 1790 TO 1940

Census year	Towns over 8,000, per cent	Census year	Towns over 8,000, per cent	Towns over 2,500, per cent	Rural, per cent*
1790	3.3	1880	22.7	28.6	71.4
1810	4.9	1890	29.0	35.4	64.6
1830	6.7	1900	32.9	40.0	60.0
1850	12.5	1910	38.7	45.8	54.2
1870	20.9	1920	43.8	51.4	48.6
		1930	49.1	56.2	43.8
		1940	...	56.5	43.5

SOURCE: *Sixteenth Census of the United States.*

* Refers to people living outside of towns and in towns of less than 2,500 population.

duction of the standardized, replaceable part, carried to particularly high development in the automobile, has assisted in large-scale production and in the building of mechanical equipment for the consumer. Accompanying the standardized part has been the enormous factory, with minute specialization by labor, typified by Henry Ford's River Rouge plant.

Growth of the Urban Market. Commercial agriculture depends on an urban market, whether domestic or foreign. The growth of cities in this country, in turn, has rested on the progress of the Industrial Revolution. Although our industries received a certain stimulus while we were isolated from Europe between 1800 and 1815, the rapid growth of our urban industries is a post-Civil War phenomenon. According to the data in Table 7, only 12.5 per cent of our people lived in cities of over 8,000 population in 1850. This percentage had increased to 20.9 in 1870; the urbanization

increased only slightly in the following decade of rapid settlement of the West but began with new vigor in the decade of the eighties and has continued since. In 1930, half of our population lived in cities of over 8,000. Following the Census Bureau's more recent policy of classifying as urban all people living in towns of 2,500 or more, the Census of 1920 was the first in which more of our population was urban than rural. By 1930, 56.2 per cent was urban compared with 43.8 per cent rural. and by 1940, 56.5 per cent was urban and 43.5 rural.

Until 1910 the increasing proportion of the population classified as urban did not represent an actual reduction in rural population but rather indicated that an increasing proportion of the immigrants were entering industry as opposed to agriculture, and that part of the natural increase of rural population was migrating to the cities. The situation was one of relative growth, the cities growing more rapidly. But after 1910 the number of people living on farms began actually to decrease, though the total population of the nation continued to increase at from about 1.5 to 2 million per year, a fact pointing to an increasing migration to the cities due to the attractive life and income of city residents. In 1920 the Census listed separately those actually living on farms, who comprised at that time 30 per cent of the total, or 31,614,269 people. By 1930 only 30,169,000, or 24.5 per cent of the population, were living on farms. Thus a decreasing proportion of our population is supplying the increasing remainder with the raw materials of the farm and at the same time is providing an exportable surplus. As a result of the business depression, farm population had increased to 31,693,000 by January, 1933, but has since declined materially, as we have seen.

In Fig. 3 are summarized the major changes since 1870 in the ways by which the American people make their living. The sharp and consistent decline of the percentage employed in agriculture from 48.2 in 1870 to less than 18 in 1940 emphasizes the relative rise of urban occupations. It is significant that the percentage engaged in manufacturing remained about constant even though the total value added in manufacture grew more than twenty times. The marked increase in the trade, transportation, and clerical occupations from 9.6 per cent in 1870 to 27.0 per cent in 1930 and 1940, shows the shift to non-form-changing activities.

The Foreign Market. Starting with the export of surplus grain and meat from the Middle Atlantic colonies to the West Indies, and of Southern colonial tobacco to England, the total volume of agricultural exports from this country enjoyed a rather consistent growth until the close of the First World War. The chief articles exported were cotton, tobacco, wheat, and meat and meat products, joined in more recent years by fruit and other special products. These agricultural exports furnished the purchasing power to pay for imported manufactured goods prior to

our industrial development and then assisted in paying off the debts incurred by our excess of imports over exports during the period of the building of our industries, particularly the railroads. In spite of reduced buying power abroad and the competition of newer areas in the European market, our exports of farm products were still at the large sum of \$1,693,000,000 for 1929, or 33 per cent of our total exports. By 1932, however, these exports had dropped to \$662,000,000 but had recovered to \$828,000,000 by 1938. The exigencies of the Second World War and the postwar period pulled our agricultural exports up to the record figure of \$3,193,000,000 in 1946. This volume of exports was made possible in part

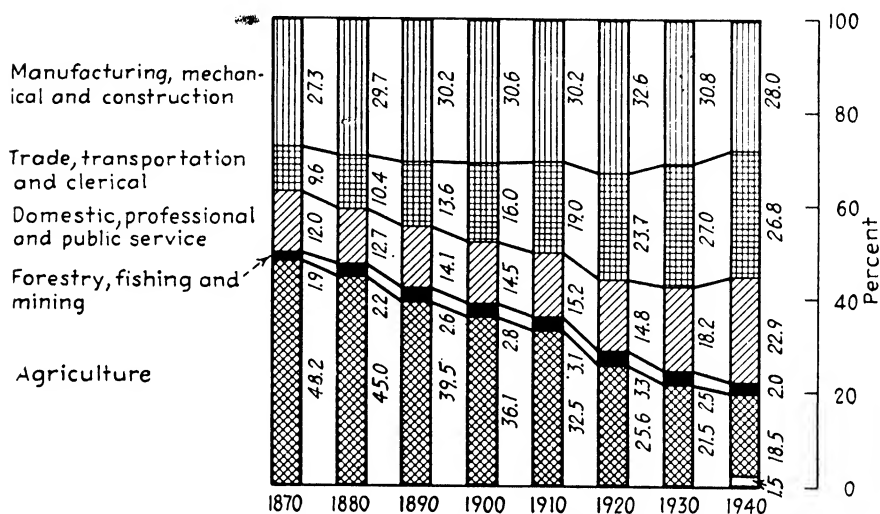


FIG. 3. The percentage distribution of the gainfully employed in the U.S. by major industrial groups 1870-1940. 1940 classification not strictly comparable to that for previous years, also includes 1.5 per cent other (non-specified) occupations.

by a stretch of exceptionally good weather and by abnormal demand from abroad. As export markets decline our farmers may face the same sort of readjustment which they underwent when exports declined after the First World War. It is to be hoped that government policy and a continuation of domestic prosperity will prevent this next readjustment from being so severe as that of the twenties and the thirties.

Despite the great volume of postwar agricultural exports, United States export trade has been chiefly of manufactured and semimanufactured products. Even in 1946, agricultural exports were only one-third the total. Since the United States is primarily an industrial nation, it is to be expected that industrial products will continue to predominate in our exports, as they have done in almost every year for the past generation.

The significance of the volume of exports lies not only in this outlet

for goods and these goods as a source of purchasing power for imports but also in the fact that the producers of the staples of which we have an exportable surplus are thereby placed in a world market. Therefore these farmers must think in terms of world demand and supply. They are affected by political and economic conditions abroad, by the springing up of new producing areas, and by the tariff policies of foreign countries. Such events have had very significant effects on American agriculture.

THE GROWTH OF ORGANIZED LABOR

Organized labor in the United States made little progress until after the Civil War. The first really significant national labor organization was the Noble Order of the Knights of Labor, founded in 1869 as a secret society and later changed to an open organization for laborers of all kinds. Filled with idealism, however, the leaders wasted the powers of the union on unsuccessful efforts at cooperative manufacturing plants and on attempts to make the stronger skilled-labor groups fight the battles of the unskilled. After 1886 this organization waned, as the American Federation of Labor, founded in 1881, grew in strength to become the spokesman for the organized labor of the country. Since 1935, however, the leadership of the AFL has been shared with the Congress of Industrial Organizations.

The American labor movement, although interested primarily in the improvement of labor's condition, vacillated from one method to another as the means of accomplishing this end. Some pre-Civil War groups were interested primarily in the obtaining of free land and public education as means of self-help. Some groups at this time, and after the war, concentrated on building up cooperatively owned producing agencies, looking forward to the eventual labor control of industry. Under the leadership of the AFL, the labor movement concentrated on one tool, that of collective bargaining with their employers to obtain desired wages, hours, and working conditions. Aside from certain more radical unions, the American labor organizations are capitalistic in their viewpoint—interested in the improvement of labor's condition through the tools of economic pressure on its employers. These tools are negotiations, the strike, the picket, and the boycott. The CIO has, however, been inclined toward political means on occasion, and the AFL is showing a tendency to follow the CIO's example.

The strength of unionized labor varies from time to time, being weak in periods of depression and growing with prosperity, but the trend has been toward the strengthening of the union movement. The early labor movements were entirely wiped out by such depressions as those of 1837 and 1857 and had to begin over again. In more recent depression periods

the unions were only weakened, losing some membership and bargaining strength but maintaining their fundamental organization. Union membership and bargaining strength grow again with the upturn of business. Aside from such temporary setbacks, union membership has grown rather consistently—from 868,500 in 1900 to 5,110,800 in 1919, then dropping back to 3,780,000 in 1933. Following 1933, the organization of labor went ahead rapidly, facilitated by the restrictions on employer interference under the National Industrial Recovery Act of 1933 and the Wagner Labor Relations Act of 1935. By 1937 total union membership was over 6,000,000.

The extraordinary prosperity and very high employment levels of the Second World War and immediate postwar years brought union membership in 1947 up to about 15,000,000, divided approximately as follows: AFL, 7,000,000; CIO, 6,000,000; railroad unions, 1,000,000; the now independent United Mine Workers, 500,000; other independents, 500,000. While the Taft-Hartley Act, passed in 1947, was intended to deprive them of some of the protection conferred by the Wagner Act, the unions seem hardly likely to suffer much loss in membership.

The phenomenal growth of the organized labor movement, its emergence as a permanent and important influence on economic affairs, manifested by the union drive for higher wages and improved working conditions, was one of the highlights of the economic history of the 1930's and 1940's.

THE INSTITUTION OF PRIVATE PROPERTY

The legal basis of the present economic system in the United States is the institution of private property. It should be reemphasized that the concern here is with the idea of property as ownership, not as the thing owned. Because our political and social institutions are an offshoot of those of Europe, particularly of England, the history of the right of private property must carry us back to the Old World for a moment.

The Development of Property in Land. Even very primitive peoples seem to have had private property in such personal items as clothing and weapons. But land as an object of ownership did not become significant until man had taken a fixed habitation during the agricultural stage. From this period on, Professor N. S. B. Gras distinguishes four stages in land ownership.

First, the allodial stage, in which a family as a group owned certain pieces of land, free from services to any lord but owing support to the state. This property was passed on by inheritance within the group and could be sold as provided by family custom. This system existed prior to feudal days but continued to apply to some land even through the Middle Ages.

Second, manorial-feudal tenure was the system in which title technically resided in the king, but, aside from some contributions by the nobles to that sovereign, the real control of the property resided in the feudal lords. Even the villeins enjoyed some rights, for they could not be ejected where their rights had been defined by custom.

Third, the semimanorial stage was reached, according to Gras, when the villein was no longer obligated to perform service on the lord's land. The obligation to make payments in kind was generally commuted to money form, known as *quit-rents*. To quote from Gras:

Such a system might be called a quit-rent system, if it were not for the fact that such a term is ambiguous. Nevertheless, rents were paid to be quit, or free, of one or more incidents. A tenant paid a rent to be quit of some objectionable service. He paid a penny, for example, to be free from the necessity of plowing the lord's land, a penny for each day of plowing due. . . .³

The fourth stage is that of free ownership. Such a position had been enjoyed by favored landholders in ancient Rome and was the position of occasional persons even throughout the Middle Ages. The revival and widespread application of the idea of free land ownership came with the complete breaking away from the feudal dues of all kinds. At the time of the enclosure movement in England, those tenants who could establish the right to their land through the rolls of the manor court came to be known as *copyholders* and enjoyed a position similar to free men. The enclosing lords could not infringe on their rights, although some feudal payments still had to be met. Not until 1926 did England provide for the holding of all land in fee simple, a system in which no one other than the state has a claim on the land except the owner. Previously, about 1800, free proprietorship had been established in France and Germany.

Property in the United States. Aside from New England, the American colonial property system was in the semimanorial stage. Quit-rents were exacted by those to whom the land had been granted, not as a sign of the feudal position of the settlers but as a source of private revenue. The payments were not so much a burden on the colonists as a source of irritation, and there was a general tendency to disregard the dues.

At the time of the Revolution, the various state legislatures abolished all quit-rents and established free proprietorship. In disposing of the publicly owned land, the government has not adopted a feudal attitude, but from the time of the Northwest Ordinance of 1787, providing for the government of the territory north of the Ohio and east of the Mississippi, the plan has been to dispose of the land to freeholders.

³ N. S. B. Gras, *A History of Agriculture* (Crofts, 1925), p. 258.

Changing Property Rights. Broadly speaking, through the nineteenth century—especially its latter half—and the earlier decades of the twentieth, there was a tendency to broaden the scope of property rights. Such rights were defined by court decisions to include not only the right to the benefits of tangible objects but also certain intangible rights, such as the employer's right to access to a market for labor or for goods and the laborer's right to contract to work for the wages and hours which he sees fit. To a large extent the application of the property concept to intangible rights has arisen in the United States in consequence of the Supreme Court's interpretation of the Fifth and Fourteenth amendments to the United States Constitution. The former restrains the Federal government and the latter the state governments from depriving any person (or corporation) of his property without due process of law. In applying these sections of the Constitution, the courts have declared unconstitutional any laws or regulations which would force the returns on such property—railroads, for example—to such a low point as to destroy the value of the property; laws which would have restricted men from working over eight hours a day and limited the age at which children could begin working; and laws which would compel the arbitration of industrial labor disputes. The inclusion of these intangible rights in the property concept restricted the growth of legislation governing wages, hours, and working conditions of labor and limited the regulation of railroads and power companies. In other words, under the provisions of the Constitution that no one shall be deprived of his property without due process of law, the government was restrained in its attempts to regulate the actions of businessmen. Furthermore, the court held that among the liberties protected by the above-mentioned amendments was the freedom of contract and that to deprive an owner without fair compensation of the opportunity to secure benefits from his property was in fact to deprive him of his property without due process of law.

In spite of the generally broad interpretation given to the property concept by the courts, even during the years between 1873 and 1935 an increasing number of restrictions were placed on the manner in which an owner could use his property in those cases in which the public interest was involved. The basis of such social interference is the principle that property is a privilege conferred by society, and that this privilege may be modified by society whenever it thinks that such changes are for the welfare of the group as a whole. Thus the restriction of the hours for women had long been held to be socially desirable and constitutional. At the time of the establishment of the national government in this country, social restrictions on the owner of property were negligible. Since that time, society has curtailed more and more the freedom with which an individual may use his property. In some states the farmer who does not remove certain noxious weeds from his premises may be fined,

or the state may kill the weeds and assess the costs against the property owner. In fruit-growing states the grower must spray his trees to control pests, or the state will spray the trees and compel the owner to pay the costs. Processors of farm products must observe certain rules of cleanliness. Manufacturers must provide certain working conditions for laborers and are restricted in the hours which they can work their laborers.

Despite the clear intent of the Supreme Court, mentioned above, to prevent government regulation from depriving owners of public utilities of a "fair" profit, the right of the government to regulate the operations of public-utility industries, including the setting of rates, has been unequivocally recognized for the past seventy-five years.

In a series of decisions following 1935, the Supreme Court altered many of the older interpretations of property rights, and now the regulation of wages and hours, the working age of children, and the conditions under which employers and employees may bargain are held to be constitutional. With the continual broadening of the concept of social welfare and of those things which will contribute to that welfare, it is to be expected that property rights will be further restricted in the interests of society.

THE DIRECTION OF ECONOMIC EVOLUTION

The economic evolution outlined in the last two chapters is typified by two aspects of the development of modes of land transportation: the increase of productivity or speed, and the change from simplicity to complexity. The only mode of land transportation available to primitive man was human locomotion—a slow method, but one based on self-reliance. The domestication of animals and the invention of the wheel improved the speed of transportation and facilitated the transference of heavy objects but did not introduce complicated mechanisms or principles of operation foreign to the everyday observation of man. Similarly, the methods and organization of production in the local economy were ineffective when judged by our standards. But the responsibility for the failure of the system to function was either in the realm of natural factors or could be placed on someone in the local group or upon this small group itself. There was no problem of understanding the economic system; it was obvious to everybody.

The application of the internal-combustion engine to transportation has increased speed manyfold but at the expense of simplicity. The automobile is made in a distant city, burns gasoline refined in another state, and operates on scientific principles but little understood by the mass of the motor users. It is a complicated mechanism, and the proper functioning of each part is necessary to the operation of the machine as a whole. In a similar manner the money economy is made of many

parts, of parts which do not always function properly. When that occurs, the smooth flow of goods and of incomes is interfered with and even the whole economic system may be disrupted. In such cases the location of responsibility is difficult, a fact that leads the ordinary individual to place the blame on someone other than himself: on the corporations, the government, the merchants, or the bankers.

The early automobiles were not reliable, but now a car owner is surprised when his automobile fails. The task confronting the automobile engineers was relatively simple, for the automobile operates on principles of the natural sciences which may be studied by the exact methods of the laboratory and applied with a high degree of accuracy. In contrast, the economic system is influenced by a multitude of forces, many of them unmeasurable and none of them controllable as in the laboratory—a fact which impedes progress in bringing about a smoothly functioning economic world. Although understanding of the workings of the economic system, despite its complexity, has advanced considerably, it must be admitted, as demonstrated by events like the Great Depression of 1929 to 1933 or controversies like the one in 1947 and 1948 on how to control inflation, that this understanding is lamentably far from complete.

Questions and Problems

1. Compare the agriculture of the New England colonies, the Middle Atlantic colonies, and the Southern colonies as to (a) degree of specialization and (b) market outlets. Account for differences in degree of specialization.

2. What factors explain the specialization in cotton growing in the South? What are the effects of such specialization?

3. What factors outside of agriculture have facilitated specialization in farming?

4. Compare the attitude of our Federal government toward the opening of new land within the country which might compete with older areas and the attitude of various European governments toward agricultural competition from the New World.

5. Was the opening of new lands beneficial or detrimental to the farmers of the older sections? Explain, giving consideration to both short-run and long-run effects.

6. What present-day problems find their root, in part at least, in our earlier land policy?

7. What factors gave rise to the agricultural discontent from 1870 to 1896? Do you note any similarities or differences between the discontent of this period and that of the years following 1920, as to either the causes or the nature of the farmer agitation?

8. What are (a) some of the benefits and (b) some of the difficulties brought about by improvements in agricultural technique?

9. What would you expect to be the effects on agriculture of a marked tendency of factories to move from the large cities to smaller towns?

10. Summarize population changes as a whole and as between country and city since 1860.

11. Why did not a strong labor movement develop in the United States until the latter part of the last century?

12. What have been the major developments in the labor movement since 1900?
13. Summarize recent developments in statute and court interpretations of the property right.

Suggested Readings

1. Edward C. Kirkland, *History of American Economic Life* (1932), covers the whole subject excellently.
2. N. S. B. Gras, *History of Agriculture in Europe and America* (1925).
3. Two reports by the National Resources Committee, *Our Cities, Their Role in the National Economy* (1937) and *The Problems of a Changing Population, Parts I to III* (1938), show urbanization of this country and some problems arising therefrom.
4. *Structure of the American Economy* (1939), also by the National Resources Committee, is an excellent over-all review of the economy of the United States before the war.
5. Twentieth Century Fund (1947), *America's Needs and Resources 1950-1960*, is a survey of present and future capacity.
6. B. and L. P. Mitchell, *American Economic History* (1947).

CHAPTER 4

PRINCIPLES OF PRODUCTION AND COMPARATIVE ADVANTAGE

THE APPROACH TO ECONOMICS

The study of production begins our analysis of the operation of the economic system in which we live. In other words, this chapter introduces us to economic principles. Therefore attention is here called to several prerequisites to a scientific analysis of our economic system. One of these is that the investigator must not be blinded by the multitudinous mass of detailed facts which come under his observation, but he must search behind these facts for the fundamental governing principles. The scientific method calls for an analysis of the relation of facts, one to another—a process of abstraction or the separation of a principle from many details. Details need to be noted, but a knowledge of details without a knowledge of underlying principles and relationships is of little value.

Next, a scientific approach requires that in determining whether a given principle is true or false, the investigator's ideas of right and wrong—of what ought to be—must not influence his conclusions of how the forces examined actually work. This does not mean that he should not be critical and interested in reform. The economist may properly be critical of our present economic society, and, in fact, many economists are very critical of it. But reform must be based on knowledge. He who would improve the machinery of an automobile must first understand the principles governing its operation. Likewise, he who would improve our economic system, and particularly agricultural welfare, needs to know the principles governing the working of that system and must proceed in accordance with those principles, whether they are as he would like to have them or not. The scientific approach in any science requires freedom from prejudice, and in no science is this more important than in economics.

Third, in economics as in other sciences, there is required a specialized technical vocabulary, with an understanding of certain basic concepts. Words must be used with a precision which they by no means always have in everyday life. Economics resembles physics in that it has taken many terms used in daily life with a variety of rather vague meanings and used them in its technical vocabulary with limited, specific meanings.

Capital, capacity, efficiency are examples. Moreover, and unfortunately for both their readers and themselves, some writers in economics often use words both with the technical meanings assigned to them in economics and with their usual meanings in everyday life, and the reader must be on his guard to ascertain from the context the meaning with which a word is used in any particular case. Before going to the discussion of production and business organization it seems advisable to introduce and define a few important economic concepts.

ECONOMIC CONCEPTS

Wealth. The wealth of an individual is the sum total of valuable objects which he possesses. Only objects which command a price in the market are included in wealth. These objects may be valuable in themselves, as is true of a piece of land, a plow, or a horse, or they may have value because they represent claims to property or incomes, as does a mortgage bond. A further characteristic of individual wealth is that it consists of external objects, not of the individual himself or any of his characteristics. The skill of the violinist is not part of the violinist's wealth, although it may enable him to earn a large income. Wealth refers to the valuable objects possessed at a particular time. It is a fund of valuable objects at a particular time, as opposed to a flow of goods and services over a period of time.

In considering wealth from the standpoint of a community as a whole, care must be exercised. To add together the value of the physical property and other assets of a corporation and the value of stocks and bonds which represent the ownership of, or debts against, that property would be double counting, as would also be true if the value of a farm and of the mortgage on the farm were added in computing community wealth. Yet certain claims are obviously wealth from that point of view. Stocks and bonds of foreign corporations owned by residents of the United States represent claims on property in foreign nations and are part of the wealth of the United States. The wealth of a nation may be considered to include all the tangible material goods of that nation, plus the claims of the people of that nation against property in foreign countries, minus claims of foreigners against property in that country. A quotation from a report of the National Industrial Conference Board is to the point:

From the objective point of view of the nation rather than the individual, all internal claims and counterclaims to wealth must be ruled out; only the sum total of physical assets can be regarded as national wealth. For statistical purposes national wealth must consist of actual physical things. Any metaphysical use of the term wealth must be excluded. There are many things that in the careless use of the word are frequently designated as wealth which are entirely extraneous to the matter. No one is disposed to controvert the familiar saying that "health

is wealth," yet logically it is completely false. Whatever else health may be it is not wealth, not a physical thing capable of being passed from one owner to another.¹

Wealth in the United States. The National Industrial Conference Board's estimate of the national wealth of the United States in 1937 is presented in Table 8.

It will be noted that in Table 8 there are enumerated only tangible material goods. The total of 322 billion dollars in 1937 amounted to

TABLE 8. CLASSIFICATION OF WEALTH IN THE UNITED STATES, 1937

Form of Wealth	Million Dollars
Total.....	321,792
Land and improvements.....	170,890
Productive assets (except utilities and land and improvements):	
Livestock and farm machinery.....	6,555
Manufacturing equipment.....	11,500
Motor vehicles.....	6,141
Total.....	<u>24,196</u>
Public utilities:	
Railroads and their equipment.....	23,595
Other utilities.....	23,021
Total.....	<u>46,616</u>
Stocks of goods:	
In hands of producers.....	15,081
In hands of dealers.....	10,562
In hands of consumers.....	41,528
Gold and silver coin and bullion.....	12,919
Total.....	<u>80,090</u>

SOURCE: *Studies in Enterprise and Social Progress* (National Industrial Conference Board, 1939), Table 2, page 60.

about \$2,300 per capita of population. More than half the total wealth consisted of real estate. The railroads and their equipment were valued at about 24 billions and other transportation and transmission enterprises at about 23 billions, utilities thus representing about 15 per cent of the wealth of the country. Manufacturing machinery, tools, etc., were valued at less than 12 billions, or 4 per cent of the wealth of the country, but this did not include buildings specially designed for particular manufacturing uses, as these were included under real estate; nor did it include power stations, which were included under utilities. Total stocks of goods in dealers' and producers' hands were about 26 billions, which exceeded the 18 billions of equipment other than motor vehicles in manufacturing plants and on farms. Though no comparable compilations have been made since 1937, the wealth of the country has undoubtedly greatly increased. The gold stock is up to 23 billion dollars, the value of farm land and other real estate is much greater, the quantity of productive equipment

¹ *Bulletin 62*, National Industrial Conference Board, 1932.

was greatly increased during the war, and despite the interruption in production due to the war, the stock of consumption goods is undoubtedly far greater now than it was in 1937.

The gain in the country's wealth, however, is not so great as it appears to be, for since 1937 prices have risen greatly. But even in real terms, and disregarding the gold stock, there is no question that the United States possesses a much greater and more valuable stock of productive equipment and consumers' goods than it did in 1937.

The United States has far more wealth than any other nation of the earth, both in total wealth and on a per capita basis. Estimates of these differences, however, are not available for any recent date, and all such estimates need to be interpreted with caution because of the different values placed on some goods, such as land, in different countries.

Income. Income is a flow of goods over a period of time, which is in contrast to wealth as a fund of goods possessed at a particular time. To the individual in the money economy, income may seem to be a flow of money rather than goods, although the money is used to command goods in the market. In reality the individual's money income is the means of directing a flow of goods. The money income is obtained by some activity, either changing the form, place, time, or ownership of tangible goods or rendering other services, and thus represents the volume of goods including services which this individual is able to secure in exchange for his money income.

In computing national income, precautions similar to those explained in relation to social wealth must be noted. Double counting where it exists must be avoided. Adjustment should be made for income paid by American government units and industries to foreign investors, and income received by residents of the United States on their investments abroad should be added to incomes earned within the United States.

The income of a nation for a particular year may be thought of as the money value of the goods, including services, which are produced either to be consumed or to be saved. The income of the United States, not only on a total but also on a per capita basis, has grown rapidly. Per capita income in this country is the greatest in the world, as is brought out in Table 9.

Tremendous differences are evident, annual per capita income varying from the incredibly low figure of about \$20 in China and the Indies to three times as much, but still very little in Mexico, with the more prosperous Latin-American countries doubling that. Per capita income in Western Europe (it must be remembered that these are prewar figures, very roughly representative of "normal" conditions) is double that of the best-off South American countries, and finally, highest of all in the United States and New Zealand. The contrasts are extreme and striking.

TABLE 9. NATIONAL PER CAPITA INCOME, 1938

Country	U. S. dollars	Country	U. S. dollars
U. S. A.....	510.6	Argentina.....	156.2
New Zealand.....	500.0	Chile.....	126.1
United Kingdom.....	481.2	Poland.....	94.3
Switzerland.....	447.6	Mexico.....	60.0
Canada.....	351.8	Brazil.....	33.3
Denmark.....	335.8	Philippines.....	31.2
Netherlands.....	321.8	Netherlands Indies.....	22.0
France.....	243.9	China.....	17.6
Austria.....	164.7		

SOURCE: "Salient Features of the World Economic Situation, 1945-1947," *United Nations Economic Report*, p. 243, Table 19. Lake Success, N.Y., January, 1948.

After 1938 there was a great increase in per capita income in the United States, the 1947 figure being close to \$1,400. As was noted on a previous page, a large part of the gain is due to the fact that prices in 1947 were about twice as high as in 1938. Allowing for this, real income in 1947 was apparently about 50 per cent greater than it was in 1938.

National and per capita income in Latin America have also increased, but most European countries are worse off, so that the divergence between them and the United States is even greater than it was before the Second World War.

Consumption Goods and Production Goods. Economic goods which are ready for human consumption are designated *consumption goods*. Other economic goods are designated *production goods*. The latter class includes all forms of manufacturing plants, machinery, transportation facilities, stocks of raw materials, in fact all economic goods not yet ready for human consumption.

Production goods have been said to "ripen" into consumption goods. The ripening process is ordinarily not automatic but is brought about by the application of human labor. But, in this process, production goods are gradually "converted" into consumption goods, the word *converted* not being used in an exactly literal sense. Raw materials are truly converted into consumption goods. But machinery also in a way ripens into consumption goods, as in the productive process it depreciates or wears out, and in so doing declines in value, a value which tends to be added to the consumption goods.

PRODUCTION

The Nature of Production. Human effort or ingenuity cannot create matter. Production of tangible goods is not creation in the sense that something new is made out of nothing but is the process of so changing

or controlling commodities and services that they will have increased power to satisfy human wants, which in economic literature is called *utility*. Production in brief is the creation of utility. From the statement that utility is created, it should not be inferred that utility arises from the productive effort, for utility must come ultimately from human desire. But production is the process of so changing or controlling commodities or services that they will better fit the desires of consumers, and therefore increasing the utility of the goods. The producer does not know whether his efforts have resulted in increased power to satisfy wants until he has sold his goods, as purchase by the consumer in general reflects the consumer's approval of the productive process.

In 1848 John Stuart Mill pointed out that, in general, man's part in the production of commodities merely consisted in moving things about. More recent writers have attempted to distinguish the creation of four different kinds of utility, *viz.*, *form utility*, *time utility*, *place utility*, and *possession utility*. When the farmer sows wheat and produces a crop, he has produced nothing new but only brought together seed, soil, moisture, plant food, and climate and supervised the change of form of these various factors so that wheat results. The miller takes the wheat and so changes its form that flour results. All activities which change the physical forms of goods so that they have increased power to satisfy human wants are said to have created *form utility*. Most of the farmer's effort is spent in producing form utility.

The transportation company moves the flour from the mill to the baker, wholesale grocer, or chain-store warehouse. The flour now has increased capacity to satisfy human wants because it is nearer where consumers want it. The delivery truck which delivers processed farm products to the city consumer's door completes the work of producing place utility. All transportation agencies are said to produce *place utility*.

The warehouse operator and the merchant store the flour until it is to be made into bread or sold to the housewife. The flour is stored until the time that the consumer wants it, which gives the flour increased capacity to satisfy human wants. Consumers are willing to pay a higher price for canned peaches in April than in October. Many consumers are willing to pay higher prices for goods to merchants who carry a wide variety of goods and hence have a particular good at the time the consumer wants it. Those who provide storage services create *time utility*.

Possession utility is a fourth type of utility recognized by some writers, though not by all who recognize the three other kinds. Possession utility is said to result from an increase in capacity of goods to satisfy wants from a mere change in ownership. Since production is

defined as the *creation of utility*, the real estate broker who brings into contact with each other the owner of a house and the prospective buyer to whom this house has greater utility than it had to the previous owner is said to create possession utility and thus performs a productive function, even though he changes neither the form, place, nor time of the goods; in fact, he may never see or handle them physically.

This classification of kinds of utility is helpful in understanding the nature of production but should not be carried too far. The retailer, for example, has been said to create possession utility by placing goods in the hands of consumers. In fact, he creates utilities of all the four kinds named. He changes the form of some commodities, he creates utilities resulting from changes in the place of commodities, and also creates utilities from changes in time and in possession. Furthermore, it is often difficult to classify under any of these four classes certain services which unquestionably create utilities. The important thing is that productive effort creates or adds to utility for the consumer.

Earlier and Modern Production Compared. Production in the times of the manor and of the early pioneer was for the most part for personal or group use rather than for the market. There was no great problem of estimating whether the market demanded this product or that and no problem of price fluctuation, as but few articles were bought and sold. The producer's thoughts were on producing goods for use, rather than on securing a money income with which to acquire goods.

Under modern specialized production the creation of place, time, and possession utilities has assumed an importance it did not have in the economy practiced on the medieval manor or by the pioneer settler. The creation of form utility has been so facilitated by the modern machine and improved technology in manufacturing and farming that the cost of the form-changing operations for most goods has been lowered. Since these economies usually lead to regional specialization, the lower costs are offset in part by the necessity of transporting the goods to consumers over a wider area. Contributing to increased costs of creating time utility is the fact that the consumer demands a wider variety of goods and demands that they be at hand when he wants them. Consumers are no longer content to have fresh fruit and vegetables through a relatively few weeks of the summer and fall, or to have eggs and butter only during the spring and summer. They are willing to pay for the creation of time utility by the various storage agencies, which have become increasingly important to agriculture in the last few decades. Possession utility has grown in significance concurrently with the spread of the exchange economy. Transportation and trade as specialized occupations, accordingly, are becoming relatively more important and

agriculture and manufacturing relatively less important. Between 1920 and 1930 the percentage of the gainfully employed population of the United States engaged in transportation and trade, as reported in the Census, increased from 17.6 to 24.5 per cent of all persons gainfully employed, but since that time, this proportion has not changed.

Productive and Nonproductive Activities. The fact that production includes much more than the everyday use of this term indicates raises the question as to whether all human activity is productive. To this our answer must be in the negative. Clearly, thieves and robbers are not socially productive. They do not create anything which society wants. Their activities are properly described as parasitic and predatory, in contrast to productive. Such predatory activities are not peculiar to modern life, as primitive man engaged in warfare for the sake of plundering and despoiling his fellow man. Nevertheless, the organization of modern life has given us many new problems of predatory and parasitic, in contrast to productive, activities. This has been stated forcefully by a gifted critic of modern economic society, Thorstein Veblen, in the following language:

The businessman's place in the economy of nature is to make money, not to produce goods. The production of goods is a mechanical process, incidental to the making of money; whereas the making of money is a pecuniary operation, carried on by bargain and sale, not by mechanical appliances and powers. The business men make use of the mechanical appliances of the industrial system, but they make a pecuniary use of them. And in point of fact the less use a business man can make of the mechanical appliances under his charge, and the smaller product he can contrive to turn out for a given return in terms of price, the better it suits his purpose. The highest achievement in business is the nearest approach to getting something for nothing. The less any given business concern can contrive to give for what it gets, the more profitable its own traffic will be. Business success means "getting the best of the bargain." Sabotage is indispensable to any large success in industrial business. The private gain which the business concerns come in for by this management entails a loss on the rest of the community, and the loss suffered by the rest of the community is necessarily larger than the total gains which these manœuvres bring to the business concerns.²

Adam Smith, in contrast to Veblen, believed that the desire of the individual to make money led him to do the very things that society desired and was willing to pay for, and that, therefore, the desire for private profit led to social service. He says:

Every individual is continually exerting himself to find out the most advantageous employment for whatever capital he can command. It is his own ad-

² *The Vested Interests* (Huebsch, 1920), p. 92.

vantage indeed, and not that of society which he has in view. But the study of his own advantage naturally, or rather necessarily, leads him to prefer that employment which is most advantageous to the society.³

Modern business does not appear to be either as predatory as pictured by Veblen or as beneficial, if left to its own devices, as represented by Smith. In general, it is productive as that term is used in economics. But intermingled with its productive activities there are many swindles of a predatory character, many efforts to obtain profits by scheming against the general welfare rather than by rendering genuinely productive services. It is one of the functions of modern government to minimize the possibilities of such predatory activities and to promote the flow of income to him who renders most genuinely productive services.

The Factors of Production. Land, labor, capital, and entrepreneurship have already been mentioned as the four *factors* of production. These will now be more carefully defined.

Land as generally used in the technical language of economics refers to all natural resources. It includes all things freely provided by nature, such as soil, location, fertility, topography, climate, and precipitated moisture. It is to be noted that land in the above explained sense differs from real estate, which includes permanent improvements. *Labor* refers to all human activity other than that undertaken for recreation or sport. The term is, therefore, broader than its use in ordinary business, in that it includes mental as well as physical activity and applies to the services of the salaried office worker and the one who is employed on some other basis, as well as to the daily-wage worker. *Capital* in its most general use in economics, and as here defined, refers to productive instruments made by man. It, therefore, excludes land or natural resources. The term is, however, used with a variety of meanings, as will be later indicated, and the student needs to be careful to ascertain from the context the meaning with which it is used in any particular case. In fact, in this very chapter it is used with two meanings distinctly different from that just given. Some economists prefer to regard land as above defined as only a particular kind of capital, thus following more closely the language of ordinary business. The fourth factor in production is *entrepreneurship*. The entrepreneur is the owner and director of the business who assumes its risks and uncertainties in the hope of a profit. He hopes to receive more than the normal rate of rent for land, interest on capital, and wages for labor, though many times he fails in this.

As a rule, in agriculture the entrepreneur both actively manages the

³ *Wealth of Nations*, Book IV, Chap. II, p. 2.

enterprise and assumes its risks with the hope of profit. In large corporate industrial organizations, the identity of ownership and management is less marked. A large percentage of the thousands of stockholders owning such a corporation have practically nothing to do with its management. In some cases only a limited number of stockholders have the right to vote, and where all have this right a large part do not avail themselves of it. Active management is by hired employees.

The Key Position of the Entrepreneur. The entrepreneur is at once the organizer of the productive process and distributor of the income which will purchase industry's products. The amount which the entrepreneur must pay to other productive agencies constitutes, in general, the cost of production. On the other hand, the amount which is paid out by entrepreneurs to other agencies is the income by means of which those who rent land to others, those who lend money, and those who work for wages will buy the product of entrepreneurs in general.

In modern production the entrepreneur is working in the hope of a profit and is interested in the production of utilities only insofar as their production is necessary in order to acquire profits. Modern society is acquisitive in the sense that the primary object of economic activity for most individuals is to acquire income rather than to render genuine, socially productive services. If this income can be acquired through interference with the operation of competition or through the rendering of poor services or the selling of inferior products, the entrepreneur may follow these sources of profit. Undoubtedly, some farmers do not have a conscious desire for profit when they undertake to operate their farms. They may have a desire for independence or social position in the community or for other returns which are not in the form of financial profit. Yet, after these men have once become entrepreneurs, their reaction to economic situations will ordinarily be guided by the profit motive. The exceptions to the fundamental assumption that entrepreneurs are seeking profits are not sufficiently numerous to invalidate this as an important general principle.

Division of Labor. The division of labor, of which we shall describe three types, has been a fundamental force in increasing production. It is almost synonymous with specialization and as such has led to trade and exchange. In medieval times specialization among men in particular types of work was rare. But with the growth of the town economy, men came to specialize in particular lines of work. The result was one type of *division* of labor, that *into crafts*. Some men remained farmers, and those who moved into town became smiths, spinners, weavers, carpenters, or merchants, or entered any one of a long list of crafts.

As men entered crafts they became more productive primarily for

three reasons: (1) the continued application at one type of work developed greater skill; (2) men could apply themselves to the particular work in which they had special ability and interest; (3) the tools and machines necessary for certain work could be used more continuously. If a man were engaged in several types of work, a large part of his investment in tools would be idle at all times. This point may be viewed from another direction by stating that, when a man specializes and uses his tools consistently, he can afford to invest in more specialized and highly developed tools, the use of which should increase his output.

The specialization into crafts proved to be only a step in further specialization in many industries. The crafts were split up into several specialized types of work and, finally, with the Industrial Revolution, into the minute processes which characterize the modern factory. This minute division of crafts is known as the *technological* division of labor. It not only carries with it the advantages of the division into crafts but also emphasizes these advantages and adds others. Sufficient skill to perform adequately many of the tasks in the modern factory may be acquired in a day or two. Where the work is highly specialized and the machine is used constantly, the entrepreneur finds it profitable to supply his laborers with very advanced and expensive machines of great productive capacity. In addition to the advantages listed above, the following apply to the technological division of labor: (1) The laborer does not waste time in changing from one operation to another. He may work the whole day putting heels on shoes with a very elaborate machine. (2) Work may be adjusted more completely to the capabilities of the laborers. Occupations which do not require great strength may be performed by women or even children, and even cripples may be used at some tasks. Persons of low mentality are well adapted to certain work. (3) When the production of an article is divided into many steps, some of the steps are reduced to operations which are automatic and do not require judgment. In such cases machines may be substituted for men. Whenever a process is automatic, a machine may perform it better and more rapidly than a human being. The technological division of labor has gone hand in hand with the development of modern machine industry.

The third type of the division of labor is the *separation* of the whole productive process into *stages*. The range owner produces feeder steers which are sold to the Corn Belt farmer for fattening. The latter sells the finished steers privately or through a commission house to the packer. The packer, in turn, sells the carcass to the retailers either directly or through wholesalers, and finally the retailer sells the meat in cuts desired by the housewife. This division of production into stages is

based upon the efficiency of specialization; each entrepreneur may concentrate upon that part of the whole productive process about which he knows the most. Farmers know little about milling and merchandising, and those engaged in the latter occupations know little about farming. Out of this type of division of labor may arise another advantage, that of large-scale production, which does not seem to apply to agriculture to a marked extent. In manufacturing, however, those who concentrate on one stage of production often carry on their operations on a very large scale and find that their costs are lowered thereby.

Integration. In the last seventy-five years there has occurred in business organization a large development of integration, by which is meant bringing under one general management business activities previously separately managed. Such integration is of two kinds, horizontal and vertical. Where many plants or business units performing the same activities are brought under one management, as in the case of the individual units in a chain-store system or of many local power plants owned and operated by one management, the integration is said to be horizontal. On the other hand, where successive operations previously conducted as separate businesses are brought under one ownership and general management, as jobbing and retailing in the case of the chain store, or the mining of ore and coal, operating ships, making steel and fabricating it into machinery, as in the steel industry, this integration is said to be vertical. Integration is the opposite of specialization insofar as general management is concerned but not insofar as the technical processes are concerned.

The Division of Labor in Agriculture. The extent to which each of the above types of the division of labor has taken place in agriculture is varied.

First, the division of labor into major types of work has now taken place so universally in advanced countries that the farmer has been included. Farming has become an occupation so distinct from such a trade as carpentering that, though the typical farmer may repair his own buildings and some of his own machinery, he rarely would attempt to build a house without at least the supervision of a trained carpenter. Few farmers are prepared to make more than minor repairs on their tractors. As a rule, farmers profit more by concentrating their thought and attention on farming rather than by attempting to be highly skilled in a very wide variety of trades; they can better afford to hire trained craftsmen, even at fairly high wages, than to attempt to do too wide a range of work themselves. Still the successful farmer is usually one who has the knack or skill of doing well a wide range of things.

Second, the technological division of labor belongs peculiarly to the

field of manufacturing and has made little progress in agriculture. In fact, the division of work on a farm into many highly specialized branches can come only with very large-scale farming, which thus far has been successful only under unusual conditions.

Third, the division of labor into stages in the productive process has been traced in Chaps. 2 and 3 insofar as agriculture is concerned. The farmer has become a producer of raw materials. The processing or preserving of these raw materials preparatory to sending them on the road of distribution to the consumer has come to be increasingly performed largely by packers, butter manufacturers, and so on. Through cooperative organizations farmers may control these processing and preserving agencies, but this work is quite independent of the farm. Farmers have found, as the final consumer has come to live at a greater distance from the farm, that they tended to gain by concentrating their efforts on growing crops and livestock and allowing specialized agencies to perform most of the processes of marketing. In recent years farmers have been reaching out to control, through cooperative efforts, the marketing of their products in at least the first stages on the route to the consumer. Still, cooperative marketing is carried on quite independently of the individual farmers; hired managers supervise the cooperatives' operations, the farmers having little to do with anything but the major policies of the cooperatives.

THE PRINCIPLES OF COMPARATIVE ADVANTAGE

Production Specialized by Localities. We have in the preceding pages called attention to the fact that modern production methods rest basically upon the division of labor, which means production is carried on by specialists. On a railroad, for example, one man is an engineer and he does nothing but handle the controls of the locomotive, another is a telegrapher, doing nothing else but tapping his key. These facts are so familiar that it hardly seems worth while recalling them, except that their very familiarity makes it so easy to forget that this kind of specialization is what makes mass production possible.

What is not quite so familiar, though probably more so to rural than to urban people, is that just as there is specialization among men as producers, there is specialization among regions or cities. Pittsburgh is the "Steel City"; Wisconsin and Minnesota are the dairy states, and so is Vermont, but in a smaller way. In England, Sheffield is famous as the center of cutlery production, just as, before the war, Solingen was in Germany. Switzerland is the country of watches, and so on; the list of examples could be extended indefinitely.

Why do areas specialize? Some of the answers are obvious. Kimber-

ley in South Africa is the diamond center of the world because the richest known mines are there. The Palouse area in Washington produces wheat because the area is fit for little else, except grass. Pittsburgh is a steel center because the production of steel requires coal, limestone, and iron ore. Coal and limestone are found near Pittsburgh, and iron ore from Minnesota and Michigan can be transported there fairly easily by ship through the Great Lakes, and then by rail from Lake Erie to the city. All these places, Kimberley, the Palouse area, and Pittsburgh, can be called resource-oriented.

Sometimes the reasons for regional specialization are more subtle. New England was for a long time the textile manufacturing center of the country because the region had ample water power to operate machines; because through the seventeenth and eighteenth centuries many New England merchants had acquired considerable wealth through trade (and New Englanders had become traders because they had good ports and trees for building ships but poor land), and this wealth was available for investment in textile machinery in the nineteenth century, because New England had ready means of communication with both the areas supplying the raw material, chiefly cotton, and those buying the finished products, and a diligent, hard-working population that was being forced off farms. If once, for any reason, an area becomes specialized in the production of certain goods, there is a cumulative effect which tends to increase its efficiency in the production of that good. Skills are built up, and subsidiary industries settle in the area.

Specialization in the division of labor by persons or by areas pays because the total product is increased thereby. If A is a skilled shoemaker and B a skilled tailor, the total production of shoes and suits will be greater if A sticks to his last and B to his needle, than if A spends some of his time making clothes as well as shoes and B produces shoes as well as clothes. They will both gain, therefore, by specializing and exchanging their products. This is simple. What isn't so simple is that even if A is both a more skilled shoemaker and tailor than B, total production may conceivably be increased if he specializes in shoemaking, as long as B is somewhat better at tailoring than at cobbling.

These are crude examples of a very important economic principle, which lies at the back of all trade between men and areas that specialize, called the *law of comparative costs* or *comparative advantage*. There follow two illustrations of the operation of this law which will help in making its formal statement more readily understood.

First Illustration of Gain. First let us suppose that Farmer A and Farmer B own adjoining farms. Let us suppose that Farmer A has a

much better farm than Farmer B, but that its superiority is much greater for the production of certain crops than for others. Let us suppose that they live in a secluded region, somewhat after the manner of the early pioneers. Let us suppose that each desires as a year's supply for himself and his family 40 bushels of corn and 40 bushels of wheat. Let us further suppose that, because A has an especially fertile farm, he can produce both corn and wheat with less labor than can B. Let us suppose that A can produce corn at the rate of 8 bushels for each day's work and wheat at the rate of 4 bushels for each day's work. Farmer B, in contrast, has such a poor farm that he can produce corn at the rate of only 1 bushel for each day's work, but because his land is different in character from that of his neighbor he can produce wheat at the rate of 2 bushels for each day's work. Now let us inquire, first, how much work each one will have to do if each produces all his own requirements of both corn and wheat; and, second, how much each one will have to do in case he specializes on that in which he has a *comparative* advantage and trades with his neighbor.

First, with each producing everything for himself, the result would be as shown below.

Commodity	Farmer A		Farmer B	
	Bushels per day	Days to produce 40 bu.	Bushels per day	Days to produce 40 bu.
Corn.....	8	5	1	40
Wheat.....	4	10	2	20
Both (40 bu. of each).....	..	15	..	60

Now let us suppose that they specialize and trade. Farmer A can produce either corn or wheat with less labor than B. But he can produce corn with only one-eighth as much labor as B, whereas he can produce wheat with half the labor of B. Obviously, his greatest advantage is in corn. Farmer B is inferior with both corn and wheat, but he is less inferior with wheat. Therefore, let us suppose that A produces not only the corn desired for his own requirements but also an additional 40 bushels which he trades to B for 40 bushels of wheat. Farmer B, on the other hand, produces only wheat, 40 bushels for his own use and 40 bushels for A in exchange for 40 bushels of corn. What would be the results?

Results for Farmer A

Days required to produce 40 bu. corn for own use.....	5
Days required to produce 40 bu. corn to trade for 40 bu. wheat.....	<u>5</u>
Days required to get 40 bu. of each.....	10

Results for Farmer B

Days required to produce 40 bu. wheat for own use.....	20
Days required to produce 40 bu. wheat to trade for 40 bu. corn.....	<u>20</u>
Days required to get 40 bu. of each.....	40

By specializing and trading, A now gets for 10 days of labor the same goods which would have required 15 days of labor had he produced them all himself, and B gets for 40 days of labor the same goods which would have required 60 days had he produced them all himself. Farmer A has saved five days in which he may produce other goods than corn and wheat and thus maintain a higher level of living. Farmer B in either case can not have so high a level of living as can A. But by trading he secures in 40 days the same goods which would have required 60 days to produce if he had not specialized and traded, and, therefore, he has gained 20 days in which he may produce something else and so also raise his level of living.

Let it be noted that the advantage of specialization and trade does not arise from the fact that A is more effective or less effective than Farmer B in either corn or wheat, but from the fact that *as compared with B the superiority of A is greater with corn than with wheat*, and that for B the gain comes because, though inferior with both corn and wheat, *as compared with A, his inferiority is less with wheat*. Specialization and trade are profitable because the ratio of efficiency of A to B in the production of corn is different from that in the production of wheat.

The student should test for himself the possibility of a gain through trade when these ratios are the same. Let it be supposed that A produces at the rates shown in the illustration just given, but that B produces 2 bushels of corn per day and 1 bushel of wheat per day. Farmer A will be able to produce twice as many bushels of corn per day as of wheat and so will B. Farmer A will be four times as effective as B in corn and also four times as effective in wheat. Under such conditions there will be no gain from trade. They might trade on the basis of 2 bushels of corn for 1 of wheat, but neither would be any better off than if he had produced all his requirements himself.

Second Illustration of Gain. To illustrate that the possibilities of benefit from specialization and trade result from different ratios of efficiency in the production of the things traded, let us take a second example, in which, however, the computations of benefits will be slightly

more complicated. Let us assume that A's effectiveness in production is as in the illustrations already given, but that B can produce with one day's work 4 bushels of corn or 1 bushel of wheat. Let it be noted that, in this case, A is still more effective than B in both corn and wheat, and that both A and B can produce more corn with one day's work than they

Commodity	Farmer A		Farmer B	
	Bushels per day	Days to produce 40 bu.	Bushels per day	Days to produce 40 bu.
Corn.....	8	5	4	10
Wheat.....	4	10	1	40
Both (40 bu. of each).....	..	15	..	50

can wheat. However, A's ratio of corn to wheat is 8:4, whereas B's is 4:1. Therefore the ratio of result in product as between corn and wheat with A is different from that with B. Accordingly, there will be gain from specialization and trade. If each produced all his own requirements, the time required would be as shown in the table above.

If they are to specialize and trade, A will specialize in wheat, because he can produce four times as much wheat as B with a day's work, though only twice as much corn. His ratio of advantage over B is greater in wheat than in corn. Let it be supposed that they agree to trade on the basis of $2\frac{1}{2}$ bushels of corn for 1 of wheat. In that case the following result for A would follow.

Days required to produce 40 bu. wheat for own use.....	10
Days required to produce enough wheat to secure 40 bu. corn by trading 1 bu. wheat for $2\frac{1}{2}$ bu. corn (16 bu. wheat will secure 40 bu. corn on this basis).....	<u>4</u>
Days required to get 40 bu. each.....	14

For B the following would be the result:

Days required to produce 40 bu. of corn for own use.....	10
Days required to produce enough corn to secure 40 bu. wheat by trading $2\frac{1}{2}$ bu. corn for 1 bu. wheat (100 bu. of corn will secure 40 bu. wheat on this basis).....	<u>25</u>
Days required to get 40 bu. each.....	35

Farmer A has gained one day by trading and B fifteen days.

It may be noted in this case that, if the trading is to be limited to A

and B, they cannot exactly produce and trade the quantities which will give each exactly 40 bushels of each. Either, one will have to take more than 40 bushels of corn, or the other will have to get along with less than 40 bushels of wheat. This difficulty results from the fact that the illustration has been put entirely in terms of barter and limited to just two persons. Such difficulty would not exist if there were also other persons with whom these two could trade. Farmer B may be supposed, for example, to trade only 40 bushels of corn to A for 16 bushels of wheat, and to trade the other 60 bushels to some other neighbor for his other 24 bushels of wheat. In that way the difficulty of things not coming out even is obviated, and the advantage of trade is equally effectively demonstrated.

Gains Expressed in Money. Trade in the actual world is carried on almost entirely through the medium of money, but the effects are the same as though it were carried on by barter. In the illustration first given, A will benefit by selling corn and buying wheat as long as prices for these two products are such, one to the other, that wheat is less than double the price of corn, and B will benefit with any set of prices such that corn is less than double the price of wheat. If the prices of the two products are assumed to be the same per bushel, let us say \$1 per bushel for both corn and wheat, the result will be exactly as in the supposed case of simple barter, bushel for bushel. If wheat were \$1 per bushel and corn 75 cents per bushel, A could produce \$6 worth of corn in a day and only \$4 worth of wheat, and B could produce \$2 worth of wheat and only 75 cents worth of corn. It would pay A to specialize in corn and B in wheat, but, relatively, B would get the greater percentage of gain from trade. As long as their ratios of efficiency in the two products are different and there is no appreciable cost in making the exchange, both are likely to gain under any prices likely to prevail, but the relative degree of advantage will depend on the prices prevailing.

With the relative degrees of effectiveness shown in the second example of profitable trade, supposing the price of wheat to be \$1 per bushel and also supposing that it is possible to exchange products without cost, A will gain by selling wheat and buying corn if corn sells at any price less than 50 cents per bushel; and B will gain by selling corn and buying wheat if corn sells at any price more than 25 cents per bushel. In the example, as assumed, with $2\frac{1}{2}$ bushels of corn trading for 1 of wheat, corn will be 40 cents if wheat is \$1, and, of course, both will gain.

In the actual world the advantages of trading are, of course, partly offset by the cost of making the exchanges, including transportation, dealers' costs of doing business, and the like. To these necessary costs governments often add for international trade the artificially created costs of tariffs. The gains from trade must be sufficiently great under

the law of comparative advantage to offset all these costs of exchange before trade will normally occur.

Statement of Law. We are now ready to state the law of comparative advantage as a general principle, as follows:

Whenever production of two or more commodities is carried on by different producers (individuals, communities, or countries) under such conditions that they have different ratios of effectiveness in the production of these commodities, one to the other, there is gain in specialization and in trade, and specialization and trade will ordinarily occur except insofar as the possibility of gain is removed by necessary or artificially created expenses of exchange.

This law is sometimes called the law of comparative costs; cost being the converse or reciprocal of advantage. It should be noted, as has been implied, that this law applies to exchange not only between areas, but also between men. Farmers A and B in our example would find it advantageous to trade whether the differences in the productivity of their farms were due to differences in the fertility of their soil or in their skill.

The examples showing the gains and the statement of the principle have been put in terms of results from days of labor rather than in differences in money costs of production, because putting them in terms of goods secured from days of labor gets more thoroughly at the root of the matter. All production is to secure goods, and that method of organizing production which gives the most goods for a given amount of human effort for a people results in the most wealth and income, and the highest standard of living. Where gains result from specialization and trade because of differences in ratios of efficiency in the production of different commodities by different producers, the natural result is for prices so to adjust themselves that trade will occur. But in some cases to use money costs obscures the essential features or extent of the advantage. This may be the case, for example, where the prices of the cost factors have been influenced by a tariff policy.

Some Fallacious Doctrines Contradicted by the Law. The mercantilists seemed to think one party gained in a trade what the other lost. One point the illustrations given should have brought out: in the normal course of trade both parties gain. There may be cases in which trade occurs when one party loses. The usual cause, however, is not that the thing acquired through trade is acquired with a greater expenditure of effort than if it had been produced by the one who acquired it by trade, but that the thing acquired is something which the one who acquired it might better have done without, or that it would have been better for him to have acquired something else. In some cases, also, people buy things which they might have produced in time which they wasted. Such cases unquestionably are of some importance, but they are

of minor importance compared with the great benefits which arise in the aggregate from specialization and taking advantage of the law of comparative costs.

Another fallacious notion in connection with international trade should have been disposed of by the examples above given. This is the view (often expressed) that as a nation we cannot afford to trade with a people which has a lower standard of living than we have. The standard of living of the person or nation with whom one trades has nothing whatever to do with the advantage derived from that trade. The sole question is: Do we get the most goods from a given expenditure of effort by producing everything ourselves, or by specializing in production and trading? Farmer A in our illustration could have a higher standard of living than B regardless of whether specialization and trade occurred, but B's lower standard of living did not prevent trade with him from being profitable to A.

Causes of Comparative Advantage. The causes which give rise to gains under the law of comparative costs are in general the same as those already pointed out in connection with the advantages arising from the division of labor. The following groups of such causes may be here mentioned: (1) differences in the quality and availability of natural resources; (2) differences in the quantity of labor available, or wage costs; (3) differences arising from the possibilities of using machinery; (4) differences in skill of workers. A few illustrations of division of labor arising from each of these causes will be given.

1. The farm land of Iowa will produce more wheat with a given amount of labor than will the semiarid lands in many regions where wheat is grown. Yet Iowa produces relatively little wheat. The wheat produced is produced to a considerable extent to secure the by-product straw and to use the growing wheat as a nurse crop in which hay crops are seeded and started to grow. Iowa's failure to grow more wheat is not because she cannot grow it as well as many regions which grow almost nothing other than wheat, but because she has a greater advantage over other regions in the production of corn. On the other hand, wheat is very largely grown in regions of very light summer rainfall, not because it grows better there than in regions of somewhat more rainfall, but because its *comparative disadvantage* is less than that of other crops.

Sugar cane can be produced in Cuba with much less labor than in the United States. It is a tropical plant of such a character that in Cuba and other countries to which it is well adapted a dozen crops can be grown from one planting, as it comes up from the stubble and produces abundant crops. In the parts of the United States where it is grown, however, it is damaged by frost to the extent that it must ordinarily be replanted after producing two crops. This requires 4 to 5 tons of cane

per acre from a crop of 12 to 15 tons for the propagation of the next crop. Accordingly, in this country the crop requires much more labor per acre, and moreover, the yields per acre in Cuba are considerably heavier. If Cuba also had an equal advantage in all other kinds of production, the people of Cuba would have a much higher standard of living than the people of the United States. However, the people of the United States have the highest standard of living of any country on the earth, for the reason that they produce the most goods per capita. Yet this nation places a tariff on sugar and imposes limitations on imports, and by these means supports an inefficient sugar-cane and sugar-beet industry in a few states. By that procedure this country as a whole loses rather than gains. The government by this legislation refuses to let its people have the benefit of the working of the law of comparative advantage.

2. In considering the relation of quantity of labor to comparative advantage, China and certain European countries, like Switzerland or Belgium, are good examples. These countries specialize in the production of goods which require much labor and relatively little land or natural resources and are willing to sell to us certain of their products—for example, silk, handmade laces, fine grades of cloth, and scientific instruments—on terms which are attractive to our consumers. This country in contrast has tended to specialize in the production of products in which machine methods have been able to take the place of labor. In many instances this is not because foreigners are more efficient in the production of the things which they sell to us than we are, but because under the law of comparative costs our superior efficiency is relatively greater in something else. We can produce many things with less labor than is required to produce them in countries from which we shall import them unless they are excluded by a tariff or other artificial restriction. The explanation is that we have a greater comparative advantage in something else. Our poultrymen do produce eggs more efficiently than the people of China, yet China is willing to sell us eggs somewhat cheaper than we can produce them in order that with her eggs she may purchase our wheat, because she is relatively less efficient in the production of wheat than of eggs. The explanation of the willingness of foreigners to sell to us at prices which our consumers consider attractive is that the abundance of the foreign labor supply and the relative scarceness of their natural resources cause these foreigners to have relatively the least disadvantage in the production of those commodities requiring relatively a large amount of labor.

3. The possibilities of using machinery affect comparative costs in numerous ways. An example may be found in the automobile industry. Because the productiveness of each worker in manufacturing automobiles

is much greater if elaborate machinery can be used, the result is that the plant which can produce many automobiles has a lower cost per car. Hence concentration comes about in the industry, and a few large plants take the place of many small ones. If a typical argument heard in relation to foreign trade—to the effect that we must put on goods produced in foreign countries a tariff equal to the difference in cost of production in this country and abroad—were applied as between parts of this country, each other state would exclude by a tariff the automobiles made in Michigan, for the very reason that they can be made more cheaply, that is, with less labor, in Michigan. But, fortunately, the Constitution of the United States prohibits tariffs between states, and this provision has not been sufficiently evaded to prevent different communities from developing industries with comparative advantages. This gives us economical production by developing machinery capable of being used advantageously only where large-scale production can be practiced.

4. Gains under the principle of comparative advantage due to differences in skill everywhere abound. The famous surgeon does not mow his own lawn, darn his own socks, repair his own shoes, or do many other things toward directly supplying his own wants, not because he cannot do these things as well as those whom he hires to do them, but because it is more profitable for him to concentrate his energies on that in which he has the greatest advantage, namely, surgery. The highly capable lawyer will delegate to a stenographer or a clerk many things which he could do better than those whom he employs to do them, for the reason that he has a greater advantage in efficiency in some other activity. An architect may be a better draftsman than those whom he employs, but he has a greater advantage of skill in something else. It is obvious that no individual of more than average ability does for himself everything that he can do better than those whom he employs to do them. Yet when specialization among nations tends to occur for the same reasons, persons in high positions assert that we should produce for ourselves not only those things in which we have comparatively the greatest advantage but also those in which we have comparatively a great disadvantage.

In the relation of skill to specialization and to the gain from production under the principle of comparative advantage, it should be emphasized again that skill itself is largely the result of specialization. No man can be expert in all things. Wherever it is possible, therefore, to organize productive activity on mass-production lines with a high degree of specialization by individual workers, these workers generally develop a higher degree of efficiency in the particular things which they do than they would in any one activity if they attempted to perform a great variety of activities.

On the individual farm there is not an opportunity for a high degree of specialization by individual workers, nor is it always wise for the farmer to specialize on too narrow a range of farm enterprises. Nevertheless, there are specialization and gain from comparative differences in skill in agriculture as in other kinds of productive activity. Many a farmer finds it profitable to entrust to a hired hand things which he can do better than the hired hand, for the reason that it is more profitable to apply his own energies to something else. Also a certain degree of specialization results in more skill. The farmer who to a certain degree specializes in dairy farming is likely to be more skilled in the feeding of dairy cattle and is likely to get more pounds of butter fat from a given amount of feed than is the farmer with whom the care of a few cows is incidental to looking after a great number of other activities. The specialized fruit farmer knows more about spraying and pest control than does the farmer who has a small orchard but whose time is devoted mostly to other things.

Specialization Highly Important in This Country. No absolute rule can be laid down as to the degree to which an individual, a community, or a nation should specialize in production. The proper degree in one case will not be the best degree in another. But this much is unquestionable, that specialization in order to take advantage of the law of comparative costs has played a tremendous part in bringing about the high production of goods per capita which now prevails in the United States and which is the basis of our high standard of living. We have abundant resources of land, timber, and minerals. But these could not have been effectively utilized without a high degree of specialization and trade under the principle of comparative advantage. We have a highly skilled and intelligent population. But skill in effectiveness of production could never have been so great as it is without specialization and taking advantage of the principle of comparative advantage. No nation is a better illustration than is the United States of the gains which come from specialization and trade; no other group of 145 million people so highly skilled and educated and possessing a wide diversity of natural resources has the same degree of freedom of trade and the same range of opportunities to take advantage of the law of comparative costs. And the people of the United States have taken advantage of this opportunity in domestic trade and have profited by it. The international aspects of trade will receive further consideration in later chapters especially Chap. 19.

Comparative Advantage and Foreign Trade. Since 1934, under the terms of the Trade Agreements law, the government of this country has made strenuous efforts to reduce tariffs on imports. Nevertheless, our policy is still largely one of economic isolation, under which trade with

other countries is hindered by tariffs. It is for this reason that, in most textbooks on economics, the law of comparative advantage is illustrated by examples drawn from foreign trade. This is done because it is in connection with foreign trade that the principles underlying the advantages of trade in general are least understood and most often denied. The advantages of a certain degree of specialization and trade among the people within a local community, or nation, are usually taken for granted by most people. But, when it comes to trading with foreign nations, a different kind of thinking prevails. Leading newspapers and men in high positions in business and public life assert with great conviction that a high standard of living cannot be maintained by the people of this country if we import goods produced in countries where wages are low or where a low standard of living prevails. They assert that this will result in our standard of living coming to the same low level that prevails in the countries where the goods which we import are produced. They assert that we must buy at home to develop home industries and give employment to our own people.

Ordinarily such persons are not opposed to the *selling* of goods outside of the community or nation. It is only the practice of *buying* from foreign countries or from other communities which is opposed. This opposition is sometimes based on self-interest. The wool grower, the sugar grower, the manufacturer of clothing or of porcelain naturally enough favor tariffs on wool, sugar, clothing, or china. The opposition of others arises from the fact that under certain special circumstances it is necessary in the general interest to put a check on imports. We shall in later chapters discuss some of these exceptions. Many people, however, are opposed to imports from abroad because they do not understand the principle of comparative advantage. They do not see that the same principle which makes it advantageous for Wisconsin to specialize in dairy farming and Iowa in hog production also makes it advantageous for the United States to specialize, as it were, in the making of automobiles, and Cuba, in the growing of sugar. It is curious that many who seem to understand the benefits of specialization, which arise from the working of the law of comparative advantage as far as their own country is concerned, fail, in their thinking, to extend this principle beyond its borders.

Questions and Problems

1. Compare the use of the word *production* in economics with its usage in everyday speech.
2. What is the final test of whether human effort is productive?
3. What kinds of utility are supplied by the retail merchant?
4. Define wealth and income.
5. What accounts for the difference in per capita income as between countries?

6. Give some examples of resource-oriented cities.
7. Show by example that, because of the law of comparative costs, trade may be profitable to both parties in the trade.
8. Show by example that a nation with a high standard of living may raise its standard by buying from a nation with a lower standard.
9. Name four principal causes of differences in comparative advantages and give an effective illustration of each.
10. Mention a number of effective illustrations of the gains realized by the people of this country from taking advantage of the law of comparative costs.

Suggested Readings

1. F. W. Taussig, *Principles of Economics* (1939), Vol. I, Chaps. 34 and 35, contains an excellent discussion of the principle of comparative advantage.
2. E. M. Hoover, *The Location of Economic Activity* (1948), is a study of the theory of location by a noted analyst of the subject.

CHAPTER 5

THE LAW OF DIMINISHING RETURNS

In this chapter we are to consider certain basic economic problems. The first is whether there is a sufficiency of natural resources available to provide an ever-growing world population an ever-improving standard of living. This question has been the subject of a great deal of discussion in recent years, notably in the book *Our Plundered Planet*, by the well-known sociologist, Dr. Fairfield Osborn, who takes the position that population is increasing faster than the means of supporting it and that action therefore must be taken to conserve the world's natural resources. The first part of this chapter examines some of the factors which prevent production from being expanded without limit and which therefore give rise to the danger pointed to by Dr. Osborn. In this part the limitations on production are treated from a global, or at least, nationwide point of view.

In the second part of the chapter the point of view is that of the individual enterpriser, particularly the farmer. It will be shown that there is a relation between the forces that impose an over-all limit on production and those which limit the amount of land and machinery one man can handle effectively, or conversely why there is a limit to the amount of labor that can be economically expended on even an unlimited expanse of land. This will lead us to discuss a question of the greatest practical and theoretical importance, which is, "What are the forces which determine the amount of land, labor, and capital an entrepreneur uses; in other words, what determines the quantity of each of the factors of production which are combined to constitute a productive enterprise?"

Standards of Living. In 1947, net national income in the United States amounted to about 203 billion dollars. If this income had been equally divided among the approximately 43,500,000 families or individuals living by themselves in this country each would have had an annual income of about \$4,500, or enough to provide an adequate though not a luxurious standard of living. It can therefore be asserted that the economy of the United States is producing enough to assure every inhabitant of an adequate living if income were equally divided. But even if there were equal division this would not mean that everyone would have as much as he wanted. Far from it. Presumably most families

would not be satisfied unless they enjoyed incomes in the \$10,000 or \$20,000 range, so that there would have to be a manifold increase in the national income to satisfy the majority of the population. This means that in a year of unprecedented peacetime prosperity, we were far short of producing as much as all our people wanted. We had obvious evidence of that in the shortages of cars, houses, steel, and certain types of food in 1947.

If the problem of producing enough to satisfy everybody is not solved in the United States, the richest of all countries, how much further is it from solution in the rest of the world, especially in the Orient, where before the Second World War hundreds of millions lived at the bare level of subsistence and where now great masses are even below that level?

How far below an adequate level most human beings in the world lived before the Second World War may best be illustrated by a few figures on food consumption. Clearly, all peoples' first efforts will be directed to providing themselves with enough to eat. If the inhabitants of any country are not eating enough, it can be safely assumed that they are inadequately provided with the other necessities and have never heard of luxuries.

It is estimated that an average daily per capita intake of 2,550 to 2,650 calories is the minimum level for maintaining health. Yet before the Second World War, in India, Korea, the Philippines, Java, Mexico, Central America, Colombia, and Peru average daily caloric per capita consumption ran from 1,800 to 2,100. In China, Malaya, Indo-China, Siam, Burma, the Caribbean area, most of Africa, and Portugal, daily consumption ran from 2,100 to 2,400. At the other end of the scale several European countries, such as Germany, Austria, Russia, Czechoslovakia, and the Low Countries, had from 2,700 to 3,000 calories, and best off were the United States, France, the Scandinavian countries, the United Kingdom, Canada, Australia New Zealand, and the Argentine with 3,000 to 3,300.¹

Changes in food consumption after the war were generally for the worse. In China and India it was below the very meager prewar levels, and a great famine had occurred in part of India in 1944. For the years 1947 and 1948 the English nation supplied only about 2,600 to 2,700 calories per day. The French, especially urban residents, did not have that much, and in the United States-occupied areas of Germany and Austria about 1,500 calories per day was provided.

In contrast, most Latin-American countries improved their dietary position, and the United States pushed even higher its already high

¹ World Food Appraisal for 1946-1947, Food and Agriculture Organization, Washington, D.C., Dec. 26, 1946.

level of food consumption. For 1947 the daily average per capita caloric intake was estimated at 3,350, as against the 1935 to 1939 average of 3,150.

Despite the favored position of a few countries, the world as a whole, then, has an immense distance to go before enough food, let alone other goods, will be produced to provide anything like an adequate standard of living for all its inhabitants.

It is doubtful if it can. It is a real question if there is a sufficiency of resources, even if developed by the most advanced technological methods, to provide all human beings with what Americans would consider a minimum, let alone a liberal, standard. We must remember that no other country is blessed with natural wealth to the extent ours is, and by the time the technology of other countries is brought up to the level of our own, generations, if not centuries, will have passed. There is a possibility, at least, that world population will have increased to the point where even improved technology might be incapable of providing a higher standard of living than is now enjoyed. India provides an excellent example of this point. In that country for the past fifty or a hundred years, modern methods of manufacturing, transportation, and irrigation have been introduced, yet population increases have kept pace with the increasing productive capacity. Between 1931 and 1941, the population grew by 50 million, more than the entire population of England.² Because of the extraordinary rate of increase, some authorities believe the Indian living standard is below what it was a century ago. We have a small but similar example on our own doorstep. The population of Puerto Rico has about doubled in the fifty years of American occupation, and this increase has apparently more than kept pace with the growth of real income from the production of sugar, the island's principal crop, so that, here too, the standard of living has not appreciably improved.

Malthus's Essay. That population may increase concomitantly with production and thus prevent an increase in scale of living is hardly a new idea in economics. One of the founders of the science, Thomas R. Malthus, enunciated it in his famous book, *Essay on the Principle of Population*, published in 1798. Malthus believed that because the supply of arable land was strictly limited, and because the yield from the available land would diminish on the one hand, while population tended to increase rapidly on the other, the human race was everywhere facing decreasing rather than increasing levels of living.

When Malthus wrote, the living conditions of the working classes in England were deplorable. A subject of much discussion was whether it would be at all possible for the plane of living of the working masses to

² J. D. Black, *et al.*, *Farm Management* (Macmillan, New York, 1947), p. 123.

rise above mere subsistence on a diet of dry bread. Population had increased and was increasing very rapidly. All the good land in the British Isles was under cultivation, and the developments in transportation which were to allow the New World to supply England with cheap grain were yet to come. Meanwhile England was suffering from the unemployment accompanying the readjustment to the beginning of the modern factory age. Many families were supported by charity. Men were wondering whether nature had not played a bitter joke on mankind by enabling the population to grow more rapidly than the requisite food supply could be increased.

Out of this dark environment appeared Malthus's book, which, as it was altered through successive editions, came to state the general principle of population as follows: Population tends to outrun food supply, unless checked. Population cannot outrun food supply for any considerable time, for surplus people will starve; but it is always threatening to exceed the available food, and thus poverty and misery for a large part of the population are unavoidable. This theory of population is built on two theoretical pillars or principles. First, the biological urge, which tends to bring about a rapid increase of population. Second, the increasing population will not be able to produce a corresponding increase in food. The available good land in England was all taken, and, according to Malthus, emigration to new lands offered only temporary relief, for such emigration would soon be offset by population increases in the home country. To farm old lands more intensively would not afford relief, for the yield therefrom would not increase in proportion to the added effort expended. The plane of living of the masses would tend to be at the bare subsistence level, for, if population should at any time exceed food supply, the positive check of starvation would operate, or, if food supply should at any time exceed population, an increase in the birth rate would use up the surplus food.

Two factors might prevent population from pressing on food supply. First, the operation of such positive checks as war and pestilence might raise the death rate to the point that it more than offset the birth rate. Such relief from surplus population is hardly to be desired. Second, the preventive check of late marriages and small families might prevent the pressure of population on food supply. Malthus did not seem to feel that the preventive check was of sufficient strength to support an optimistic view of the future of society. Conditions, when he wrote, were such as to give support to his views.

The Law of Diminishing Returns. The student will have noticed in the preceding discussion of Malthus's theory that one of the main points on which it rested was his belief that, with arable land limited, more and more intensive cultivation would result in an increased product, but the

increase would not be proportionate to the effort expended. While Malthus did not express it explicitly, this tendency of yields to become smaller per each added unit of labor (or capital) applied to a limited land area was one of the bases on which his population theory rested and has since been more precisely analyzed under the name of the *law of diminishing returns*.

Alfred Marshall defined this law or tendency as follows: "An increase in the capital and labor applied to the cultivation of land causes in general a less than proportionate increase in the amount of produce raised unless it happens to coincide with an improvement in the arts of agriculture." The law, therefore, does not apply to situations where farming methods are improving, and when it is discussed it is assumed that not only is land area limited, but also technique is static. The progress in farming methods in the centuries preceding Malthus had been so slow as to allow him to assume that technology would not improve fast enough to offset the growth of population and the diminishing returns from the efforts of that increased population to enlarge its food supply.

The Malthusian Theory and Present Conditions. The law of diminishing returns, in its application to the population problem and other problems, earned for economics the name of *the dismal science*. No principle ever developed in economics has been more bitterly attacked than the Malthusian theory. Some of the criticism objected to the pessimistic view it gave of man's prospects. More basic were those attacks which pointed to the phenomenal advances in output and living standards which have occurred since Malthus's time, which have, in many countries, been accompanied by falling, not rising, birth rates. In fact, prior to the Second World War, there was a general tendency to deny the validity of the Malthusian principle, except as it might apply to those peoples who had not yet adopted Western technology. After the war, however, the sharp upsurge in population and the rapid rate at which resources were being depleted not only revived interest in population problems, but gave a Malthusian flavor to some of the discussions.

In order to appraise this major issue, therefore, we shall consider in the light of modern conditions the three bases upon which rested Malthus's expectation that population would keep pace with, or press on, food production:

1. Population tends to increase rapidly.
2. The amount of arable land is limited.
3. As cultivation is intensified, returns are not proportionate to the labor expended.

Population Trends. First: Is there a biological urge to reproduce? Modern analysis seems to show that there is a biological urge for sexual relations, but that this urge is not an urge to reproduce. This conclusion

leads to the second point: Is not the preventive check far more significant than Malthus realized? The size of the family has been reduced among some classes by birth control. The usual motive which leads to the reduction in the size of families is the desire of the parents to provide for themselves and their offspring greater opportunities for a pleasurable life than that enjoyed by their ancestors, although no doubt in cases of many married people the desire to escape the responsibilities and cares of parenthood is the basis for having few or no children. The significant fact is that the growth of population in many parts of the world is being controlled by human beings and, furthermore, that the major purpose of this control is to increase the amount of consumable goods available per person.

The limitation on population has been especially marked in the countries of Western Europe and America in the course of the last century, concomitantly with the progress of industrialization of these areas. Although death rates fell with the revolutionary advances in medical knowledge and the use of sanitation, birth rates fell even faster. The downward trend was interrupted briefly just after the First World War but by 1925 in the United States, for instance, the birth rate was below the prewar level and by 1938 had declined to 17.9 per 1,000 population, not much more than enough to maintain a stationary population. At that time students of population were predicting that by 1960 United States population would be stationary or even declining. By 1938 the French birth rate was also below that necessary to maintain a stationary population, and the population of that country was declining. That of England was stationary.

The years after the Second World War, like those after the First, brought a great increase in the birth rate, which in 1945 and 1946 went to over 20 per 1,000 in the United States. It is to be expected, however, that, also as before, the birth rate will in a few years start to decline again, and the postwar upsurge in the birth rate will have served to put off the date when our population will become stationary, as well as to cause the population to remain stationary at a higher level than previously predicted. This recent upturn in the birth rate has not invalidated the generalization that the populations of Western industrialized countries are tending to become stationary, contrary to Malthus's expectation that populations would inevitably increase up to the limit of subsistence.

The Outlook for Population Growth in the Orient. The description of the relation of birth rate and the supply of agricultural products available for the people of the United States, Western Europe, Australia, and parts of Africa should not lead to the conclusion that the working of the Malthusian principle has been offset in most parts of the world. The restrictions on the birth rate described above have been largely inopera-

TABLE 10. BIRTHS PER 1,000 OF POPULATION IN SPECIFIED COUNTRIES, AVERAGE IN 1908-1912, 1927-1928, 1938, AND 1944

Country	1908-1912			1927-1928			1938			1944		
	Birth rate	Death rate	Natural increase	Birth rate	Death rate	Natural increase	Birth rate	Death rate	Natural increase	Birth rate	Death rate	Natural increase
England and Wales...	25.2	14.2	11.0	16.7	12.0	4.7	15.1	11.6	3.5	17.5	11.6*	5.9
France.....	19.4	18.5	0.9	18.2	16.6	1.6	14.6	15.4	0.8	16.3	19.3*	-3.0
Germany.....	30.0	16.9	13.1	18.5	11.8	6.7	19.7	11.7	7.0			
Italy.....	32.7	20.8	11.9	26.6	15.7	10.9	23.6	13.9	9.7	19.2	15.9*	3.3
United States.....	.....	.....	.....	20.2	11.8	8.4	17.9	10.7	7.2	20.2	10.6†	9.6

Sources: For 1908-1912 and 1927-1928, W. S. Thompson, *Population Problems* (McGraw-Hill, 1930), Tables 23, 47, and 94; for 1938 *Statistical Yearbook* (League of Nations, 1938-1939), Table 8; for 1944 *Summary of International Statistics*.

* Excludes armed forces.

† Excludes armed forces overseas.

tive in Asia, Southeastern and Eastern Europe, and much of Africa. In those regions marriage is at an early age, and birth control is not much practiced. It is in these same areas that modern agricultural methods have made little progress.

Here, even before the postwar emergency period, drought or flood brought famine, for the masses living at the point of bare subsistence have no surplus stored up. On such occasions the surplus products of the advanced parts of the world are of insufficient assistance, partly because inland transportation is so poorly developed that surplus goods of the areas not suffering from famine cannot reach those affected, but to a more important extent because in this age of acquisitive economic organization, when goods are supplied usually only for something in exchange, these backward peoples lack the purchasing power to import goods. In some cases this is offset in part by the charity of the wealthier nations. The reality of the pressure on population is emphasized when one considers an annual birth rate of from 40 to 50 per 1,000 in China and 37 per 1,000 in India compared to 20 per 1,000 in the United States, whereas the per capita income in 1938 in China was estimated at but \$17.6 compared with \$510.6 in the United States.

We have already called attention to the fact that India's population seems to grow just as fast as the increase in the production of means of subsistence. The following passage puts in graphic terms the results of the working of the Malthusian principle there, and although it was written about twenty years ago, it still seems applicable.

If one follows the occurrence of famines and plagues, one finds that they are so common in India that what seems to be the unusual and catastrophic to the Westerner is really quite customary in India, and scarcely a decade goes by without several outbreaks of disease and some local famines which carry off millions of people. In other words, famines and epidemic diseases are chronic causes of a high death rate in India. If for a few years the country is comparatively free from them, as in the decade 1881-90, the death rate (27.44) falls and there is a large increase of population. But, with this increase to be supported on lands already taxed almost to capacity, the following decade or two is likely to see a large increase in deaths.³

The operation of the Malthusian principle in these backward regions of the world will probably become less marked as these people adopt the civilization of Western Europe and America, for the advance of civilization has usually meant a decline in the birth rate. Those individuals of Asia and backward parts of Europe who have come into intimate contact with Western civilization have usually had smaller families. The adoption of advanced methods of production is being promoted by the Soviet

³ W. S. Thompson, *Danger Spots in World Population* (Knopf, 1930), pp. 143-144.

government in its vast area. Education, both general and technical, is slowly permeating India, and now that India is independent it is possible that this process will be speeded up.

Whether the advance in industrialization which had been accomplished in Japan before the Second World War, and which incidentally had not been matched by a similar advance in farm management, will be resumed, it is too early to tell. The beginnings of economic progress which had been achieved in China despite great difficulties in the years between 1910 and 1940 have been partly wiped out by ten years of foreign and civil war, and it appears as if a long time will pass before that country will be in a sufficiently settled state to turn to the improvement of its economic status.

Education and advancing industrialization in the Orient may, as they have in the West, check population growth and thus invalidate Malthus's conclusion, but the outcome in that area cannot yet be predicted with certainty.

INCREASING EFFICIENCY IN PRODUCTION

We come now to Malthus's second point: that returns will diminish disproportionately from the fixed land area as more labor and capital are applied. This is really the most crucial of his theses, for whether the outlook for any given people is pessimistic in true Malthusian tone, or has the optimistic tone of Western civilization, depends on the "race between population and improvement" in the production methods of that people. In the Orient and Africa, there is sad need for both a decline in the birth rate and an improvement in technology. In the United States—with the less than 20 per cent of the population who are agriculturally employed supplying the remaining 80 per cent with food and clothing materials in superabundance, and with the slow rate of natural increase which points to the maximum population within the space of a generation, with a decrease in numbers thereafter—there seems little basis for worry. The problem confronting us throughout the field of production, not in agriculture alone, is to obtain such great efficiency that the plane of living may be raised materially above a health-and-comfort minimum.

Increased Production and Improved Standards of Living. In the race between population and improvement, production has increased more rapidly than population. The marked increase in production up to the time of the Second World War is shown in Table 11, which gives data on production of leading basic commodities for all the countries of the world for selected years from 1900 to 1938, using the production of 1900 as a base of 100. The data show the decline in 1932 due to the widespread business depression and indicate that even by 1938 the 1929

TABLE 11. ESTIMATED PRODUCTION OF LEADING BASIC COMMODITIES IN THE UNITED STATES AND IN THE WORLD, 1900-1938
(1900 = 100)

Year	United States	World total (exclusive of United States)
1900	100	100
1910	140	132
1920	179	146
1929	221	194
1932	138	143
1938	188	203

SOURCE: Indexes for 1900-1929 from G. F. Warren and F. A. Pearson, "The Physical Volume of Production in the United States," *Cornell Memoir* 144, Tables 1 and 3. Recent data from Professor Pearson and from the League of Nations, *Statistical Yearbook*, 1938-1939, Table 107.

level had not been regained in the United States, although the world total exceeded that of any previous year.

The war years, with each participant straining its agricultural, mineral, and mechanical resources to the limit, saw an enormous increase in output—above any level previously reached. In the United States, for example, agricultural and mineral production each rose about 40 per cent above the level of 1935-1939 and industrial production more than doubled. Unfortunately this great outpouring of goods was not devoted to the greater satisfaction of human wants, as would have been the case in a rationally ordered world, but to the spreading of death and devastation.

After 1945 agricultural and mineral production in the United States continued at the high wartime level; although industrial output declined somewhat, it was in 1947 still far above that of any previous peacetime year. For the world as a whole the situation was not so favorable. While in Western Europe, excluding Germany, industrial production and the extraction of minerals had recovered remarkably and reached or exceeded prewar levels, living standards had not recovered concomitantly because of the necessity of devoting a high proportion of production to export or to the restoration of war damage rather than to immediate consumption. Food production in Western Europe was only about 90 per cent of prewar years, and food imports from Eastern Europe were reduced nearly to zero. The almost complete elimination of the industrial output of Germany, Japan, Austria, and Manchuria meant that total world industrial production, despite the great increase in the United States, was not much above that of the immediate prewar period and was clearly below that of wartime. Again, despite the increased agricultural production of the Western Hemisphere, world food produc-

tion in 1946 to 1947 was only slightly above or no higher than the prewar average. Since population was 7 per cent above the prewar figure, on a per capita basis food supplies for that period were about 5 per cent below the prewar.⁴

It is significant that the production of basic commodities more than doubled between 1900 and 1938, while world population increased by about one-third. The great upsurge in production during wars indicates that if men can learn to live with each other in peace and can devote their productive energies to satisfying human wants and not their destructive impulses, there is every certainty that the inhabitants of the Western world, at least, can enjoy richer and more leisurely lives than ever before. The opportunity exists for the Eastern world as well, but whether sufficient resources exist there to provide a better life, especially if population growth is unchecked, is very much an open question.

Let us follow in a little more detail the course of production, agricultural and nonagricultural, in recent years in the United States and some foreign countries.

We have already in Chap. 3 pointed to the rapid increase of farm output in the United States, which has more than kept pace with the growth of our population. This, especially as it has been accomplished despite the reduction of the agricultural labor force in recent years, would seem to be a direct refutation of Malthus's theories. Since the increase in production, especially of the last few decades, has been attained without materially enlarging the cropland area, it has clearly been due to improvement in technology, particularly the application of machinery. When Malthus wrote, relatively little progress was being made in methods of agricultural production, the great advances in the use of mechanical power and the improvement of the quality of plants and animals having been made since his time. The law of diminishing returns, strictly interpreted, assumes a static technology and since the pace of technological change in agriculture since Malthus's time has been so great, it can be said the law has been suspended for the last one hundred and fifty years. The conditions under which it could operate were fortunately not present in the United States, and there does not seem much likelihood that they ever will be.

The same is largely true of Western Europe, where before the Second World War, for example, an English population of 45 million enjoyed a much better diet than did the 8 million people who lived there in 1800. Very large imports, of course, made this possible, but even so England was raising about half its own food requirements, or a sufficiency for about 22½ million people, in 1938. The Western world, then,

⁴ World Food Situation, 1946-1947, Office of Foreign Agricultural Relations, U.S. Department of Agriculture, November, 1946.

with its tendency toward a stationary population and its ability up to now to increase output steadily, need not concern itself, once war wreckage is repaired, with subsistence problems.

For the world as a whole, however, particularly the Eastern Hemisphere, which contains more than half the world's population, the prospects are not so favorable because of the tendency for population to increase as rapidly as food production. It is questionable, too, how much more can be drawn from the United States, Canada, Argentina, and Australia than is now being exported, and most of this goes to Europe, in any case. Thus China, India, and the other Oriental countries will have to depend on their own resources, which even with improved techniques may not prove to be sufficient to provide a much more ample diet than their present one. In these regions Malthus's principle still has a grim applicability.

New Agricultural Land. The Oriental countries in their search for more food will not have the advantage that European countries had at the beginning of the nineteenth century, the opportunity of opening up new lands in other continents, the third factor tending to make Malthus's theories irrelevant. To be sure, forest lands were cleared and swamps drained in the British Isles and on the continent of Europe, but the threat of starvation in Western Europe was not removed until the development of rail transportation on land and the application of steam and refrigeration to ocean transportation brought the cheap products of new lands to the markets of Europe.

In explaining the increase of agricultural production, one should not overlook the irrigation of highly productive lands previously lacking moisture and the development of economical methods of farming lands with little rainfall. To this, add land made productive by drainage, and the possibilities of supporting a large population are greatly expanded.

It may be that modern methods of large-scale excavation, irrigation, and dam construction may make possible unexpectedly large additions to the world's arable area. Nor should the as yet untapped possibilities of using atomic power in this connection be forgotten.

Nonagricultural Production. Production of mineral and manufactured goods grew more rapidly after 1909 in the United States than the output of agricultural products; that of manufacturers almost tripled and that of minerals grew $3\frac{1}{2}$ times, whereas agricultural production increased by only one-half. The effect of the Great Depression on mineral and manufacturing production and the effect of the droughts of 1934 and 1935 on agricultural production can be seen clearly.

During the Second World War, however, manufacturing output in this country more than doubled the prewar and 1929 figures, and after the war held close to the wartime level (Fig. 4). Since the increase

above the 1935 to 1939 level is close to 100 per cent, as compared to an increase of about 10 percent in population, it is clear that the tendency of manufacturing production to outrun population, which was manifest in this country up to the years of the Great Depression, was resumed. In fact, many students believe that on the average the output of manufactured goods in this country tends to increase at the rate of about 3 per cent per year. Since population between 1900 and 1930 increased at an annual rate of less than 2 per cent and after 1930 by about 1 per cent per year, the output of manufactured goods per capita, has in effect, been greater year by year.

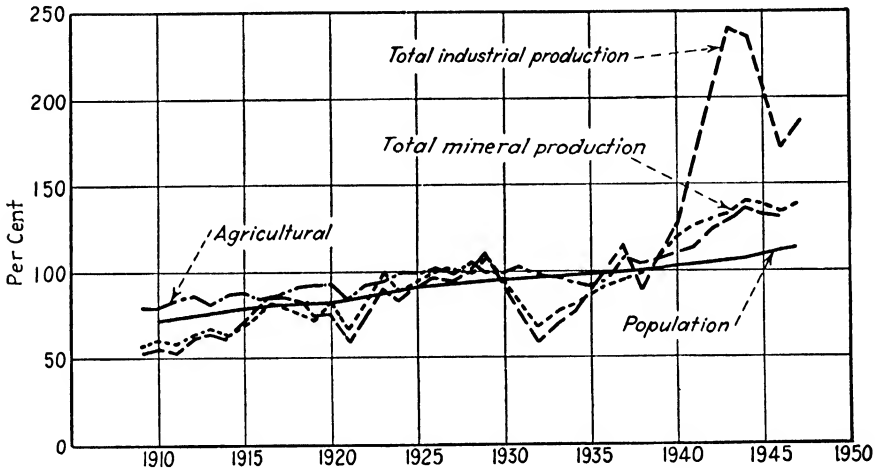


FIG. 4. Indexes of industrial, mineral, and agricultural production, and population, U.S., 1909-1947 (1935-1939 = 100).

The prospects are that this state of affairs will continue. As Professor S. H. Slichter of Harvard points out,⁵ our industrial plant two years after the war was largely obsolescent because replacements since 1930 had been far below the normal rate, first on account of the Great Depression and then because of the war. When our productive machinery has been fully modernized, it ought to be capable of continuing to increase output at the rate which has prevailed for so long in the past.

Output per Worker. Since in the United States, at least, agricultural, mineral, and manufacturing production has increased much faster than population, output per worker has also increased, as is shown in Table 12.

It should be remembered that the increase in output per worker in any particular occupation is often not so great as it seems. Take farming, for instance. Although a farmer today may turn out twice as

⁵ *New York Times Magazine*, Nov. 30, 1947.

TABLE 12. PRODUCTIVITY INDEXES FOR SELECTED INDUSTRIES, 1909-1944
(1939 = 100)

Year	Output per man-hour				Output per worker, agriculture
	All manufacturing	24 selected nonmunicipal manufacturing industries	Railroad transportation	Mining	
1909	38.1	.....	.....	.....	66.3
1910	.....	.....	.....	.....	70.0
1911	.....	.....	.....	.....	73.1
1912	.....	.....	.....	.....	77.3
1913	.....	.....	.....	.....	72.4
1914	44.2	.....	.....	.....	79.3
1915	.....	.....	.....	48.6	76.9
1916	.....	.....	51.6	48.1	73.3
1917	.....	.....	54.2	48.5	78.1
1918	.....	.....	53.5	49.4	81.2
1919	43.8	.....	56.7	49.6	81.1
1920	48.3	.....	57.6	51.8	86.4
1921	52.7	.....	58.5	54.2	73.6
1922	57.9	.....	60.9	57.5	79.6
1923	57.3	.....	62.9	59.0	81.8
1924	60.8	.....	64.6	60.7	83.7
1925	65.0	.....	68.2	62.6	88.5
1926	67.2	.....	70.4	63.4	91.2
1927	69.3	.....	70.2	65.3	88.3
1928	72.4	.....	73.7	68.0	91.7
1929	75.5	72.6	75.1	69.9	91.5
1930	77.4	73.3	75.1	72.9	89.7
1931	81.0	77.3	75.6	77.2	98.9
1932	78.3	77.7	73.7	77.6	93.3
1933	82.9	82.3	83.0	78.8	89.1
1934	86.3	84.3	83.7	81.4	76.5
1935	91.0	88.9	87.6	84.9	87.4
1936	91.5	90.5	93.5	86.6	81.5
1937	90.3	89.5	95.2	88.0	105.1
1938	92.0	93.4	94.7	90.1	97.7
1939	100.0	100.0	100.0	100.0	100.0
1940	.....	105.2	105.2	100.7	103.2
1941	.....	107.1	115.5	104.2	107.4
1942	.....	105.6	139.6	106.5	118.9
1943	.....	108.7	150.9	109.2	116.8
1944	.....	103.0	148.1	114.2	124.0

SOURCE: "Basic Facts on Employment and Production," Report to the Senate Committee on Banking and Currency, Senate Committee Print 4, 79th Cong., 1st Sess., Table D2.

much as did his father or grandfather in 1900, he has the assistance, which his predecessor did not have, of many men, whose labor went into the making of the machinery the farmer uses. This point has been well put by Professors G. F. Warren and F. A. Pearson:

Division of labor leads to erroneous conclusions as to increases in efficiency, because only a part of the process is visible. A farmer with a tractor, tractor equipment, a combine, and a truck is able to grow and harvest much more wheat than was formerly grown per farmer. The increase in efficiency is far less than is assumed, because there has been a change in the residence of those whose time is required to produce the wheat. Many invisible persons are involved in the production of machinery and fuel that the farmer uses.⁹

One reason for the increase in output per man directly employed in farming is that in a sense a Peoria farm-machinery factory employee is also engaged in agricultural production.

The same point can be made about any particular type of manufacturing. Apparently correct statements of tremendous increases in productivity should be examined with care. This should be done in the first place because a machine which increases the output of, let us say, electric-light bulbs per man by 10,000 times, itself required a great deal of labor in the making, and this labor has to be discounted before the net increase in labor productivity due to the use of the bulb machine can be computed. In the second place, it should also be noted that, as Pearson and Warren point out in the passage quoted, only part of the productive process is visible when there is a high degree of division of labor. In the manufacture of light bulbs much more is involved than turning molten glass into globes. Many raw materials have to be transported, converted, and assembled, and each of the operations has widespread ramifications. This point is also excellently put in the following continuation of our previous quotation from these writers.

Statements are commonly made of the spectacular increase in the output of shoes per worker in the shoe factory. These are misleading. The labor on a pair of shoes includes a part of the time of the persons growing cattle and handling and marketing and skinning them, labor involved in the handling, shipping, and tanning of hides, and labor involved in the handling and shipping of leather. Some workers must make the machinery used in these industries, others must make the buildings and the building materials involved in this endless process. Still others must finance the business. Back of these, there is the mining of coal, the building of railroads and of electrical lines and electrical equipment, and the production of cotton and tanning materials. To complete the process, the shoes must be shipped and sold at retail. This involves the time of more bank clerks, railroad employees, traveling salesmen, retail salesmen, delivery

⁹ G. F. Warren and F. A. Pearson, *The Physical Volume of Production in the United States*, Cornell University Memoir 144, 1932, pp. 24-25.

boys, store builders, and paper-box manufacturers, and further fuel and light. It is not probable that any sudden decrease in the time required has occurred in the complete process. We have no indication of any sudden increase in total production of all commodities per capita. There are sudden decreases, such as occurred in 1921 and 1931 when millions of workers were unemployed.

DIMINISHING RETURNS IN THE INDIVIDUAL ENTERPRISE

The early economists were concerned with the law of diminishing returns because of their interest in its broad social implications. They regarded land as fixed, permanently limited, or scarce, and capital and labor as capable of considerable increase with the growth of population. They, therefore, considered the law of diminishing returns only in connection with the diminishing returns from land for additional applications of labor and capital.

Whether the principle of diminishing returns, as Malthus understood it—that is, the inability over a long period of time to supply an increasing population with food from a limited area—ultimately holds, is, as we have tried to demonstrate, an as yet unanswered question. There is no question, however, but that in a limited time period, with unchanged techniques, if the quantity of any one of the productive factors (land, labor, capital, or entrepreneurship) is fixed and if that fixed factor is combined with varying quantities of other factors, the output of whatever is produced increases with each application of the varying factor, first at an increasing rate and then at a decreasing rate. There have been any number of experimental verifications of this general statement, especially in the field of agriculture.⁷ This occurs with the yield of potatoes, cotton, or tobacco as more and more fertilizer is added to a particular plot of land, to the yield of milk per dairy cow as her intake of nutrients is increased, or to the yields of any crop as more and more labor is spent in cultivation. In fact, it is possible to conceive of a case where so much of the variable factor is added that a point is reached where not only the rate of increase diminishes, but the total output of the product may be reduced, as when an excessive application of irrigation water may “drown” plants by shutting off their supply of air.⁸ Before, however, attempting to clarify this principle with arithmetical and graphic examples, it will be advisable to discuss somewhat more fully the situations in which diminishing returns arise.

All entrepreneurs, in planning the conduct of their enterprises, at any one time are faced with the necessity of combining fixed and variable factors. Thus a farmer at the beginning of a season counts on oper-

⁷ See the examples cited in J. D. Black, *et al.*, *Farm Management* (Macmillan, New York, 1947), Chap. XVII.

⁸ *Ibid.*, p. 389.

ating a certain area. Of course, in time, he can buy or lease more land, but for a particular season the land at his disposal is pretty much fixed. During the Second World War, indeed, with help hard to come by, the quantity of labor available to him was often fixed also. The same thing was true of his buildings during the war, when building materials were almost completely unobtainable. And even in normal times, for a single season's operations farm buildings are usually a fixed factor, as are land improvements, like drainage or irrigation installation. Certain other productive elements, however, such as seed, fertilizer, insecticides, can be had in varying quantity within any one season during peace or war. It is the problem of the entrepreneur to combine the fixed and variable factors available to him in the most economical manner possible.

Over a period of time the quantity of no factor is fixed, except entrepreneurship, and in the case of the modern corporation, it may be possible that even entrepreneurship is an extensible quantity, inasmuch as managerial talent can be hired. As far as an individual proprietorship goes, however—and most farms fall within this category—entrepreneurship can be taken as a fixed factor. There is one owner and operator, who is the entrepreneur. All other factors, however, can be varied over time. A farmer can get more land, add to his buildings, put down drains, buy more farm machinery. As the time span under consideration narrows, however, these elements partake more and more of the nature of fixed factors, and so does the labor of the proprietor and his family. The labor of the farmer and his family is available in a more or less fixed quantity, so many man-days of work can be expended by them, just as so many acres of farm land are available, no more, no less. If a hired man is engaged by the year or the season, his labor is a fixed factor for that period also. Seed, fertilizer, irrigation water, feed, labor hired by the job, day, or month, are variable factors from the point of view of almost any time period.

As a general statement, however, any factor is considered as *fixed* which is taken as not varying in amount during the period of production which is under consideration. A *variable* factor is any one which is changed in quantity during that period. But almost any factor can be fixed or variable depending on the circumstances of the case, especially the length of the period.

A Hypothetical Example of Diminishing Returns. In this example we will assume that the quantity of land and entrepreneurship are the fixed factors, and the variable factors are labor and capital equipment. Suppose John Jones has 1,000 acres of tillable ground, including the space for farm buildings, yards, etc. In practice, few farmers would attempt to farm so much land alone, but in order to clarify the idea

of the returns from different degrees of intensity of culture, let us assume that Farmer Jones by himself and with but very ordinary equipment undertakes to farm the whole 1,000 acres in wheat. He would so scatter his labor and the use of his equipment that his yield would be very low. He could not properly prepare the seed bed and at harvest time some of the grain would get too ripe before he could harvest it. Waste and loss would result. Under such circumstances, the hiring of one laborer and the doubling of the amount of equipment might not only increase the production but more than double the production. In this case the land is yielding increasing returns. The seed bed could be better prepared and at harvest time there would be less grain lost through shattering and less risk of loss through inclement weather.

Suppose now a third unit of labor and capital is added. The capital need not be of the same type; thus he might not get another plow but add some machine to work the seed bed better, or he might add fertilizer. Jones may find that this third unit increases the total production of the farm, but not by as much as the previous unit. Perhaps the product of this third unit of labor and capital may not be less than the first unit, though smaller than the second unit. If that be true, the average product per unit of labor and capital will still be increasing. Adding a fourth unit of labor and capital will add to the product, but less than added by the third unit.

As the product added per additional unit of the variable factor grows less, the average product per each unit of the variable factor (labor and capital) employed decreases. Finally a point may be reached where Farmer Jones cultivates with such intensity (which means he is applying great quantities of labor and capital to the land) that his soil is overaerated and his total output will begin to diminish.

In Table 13 the above example is presented in figures. The fixed factor is entitled F and the variable factors V . The returns for the various combinations of F 's and V 's are in bushels. Combination 1, consisting of 1,000 acres and one laborer (the farmer), and one unit of capital, produces only 4,000 bushels. This is a yield of 4 bushels per acre, but 4,000 bushels per unit of V 's (see Column VI). The combination in which two laborers and two units of capital are applied to the same 1,000 acres brings a total production of 12,000 bushels, which is three times as great as with combination 1. This is an instance of increasing returns, and production is said to be in the stage of increasing returns. Combination 3 brings a total production of 18,000 bushels, which is an increase over combination 2 of only 6,000 bushels (see Column V), whereas combination 2 brought forth 8,000 bushels more than combination 1. Inasmuch as the "marginal" or additional returns were not so large as in combination 2, this farmer has reached the *point of*

TABLE 13. AN ASSUMED CASE, ILLUSTRATING THE LAW OF DIMINISHING RETURNS WITH LAND AS THE FIXED FACTOR

Combina- tion	Number of unit of P 's	Number of units of V 's	Product in bushels		
			Total	Per added V	Average per V
(I)	(II)	(III)	(IV)	(V)	(VI)
1	1,000	1	4,000	4,000	4,000
2	1,000	2	12,000	8,000	6,000
3	1,000	3	18,000	6,000	6,000
4	1,000	4	21,000	3,000	5,250
5	1,000	5	23,000	2,000	4,600
6	1,000	6	24,500	1,500	4,084
7	1,000	7	25,250	750	3,608
100	1,000	100	.....	-1,000	

diminishing marginal returns, generally known simply as the *point of diminishing returns*. Production has now entered the second stage, that of diminishing returns, which is the stage of intensity in which production is normally carried on.

Since the amount of product added by the third unit of V , 6,000 bushels, is 50 per cent greater than the product of 4,000, when only one unit of V was used, the average return per V does not decrease in combination 3, as is shown by Column VI in the table. But in combination 4, the average return per V declines, determining this as the point of diminishing average returns. Adding more labor and capital continues to decrease the average production per V but to increase the total production until combination 100. In the latter combination the total production is less than in combination 7, or some combination between 7 and 100, determining this as the point of diminishing total returns. No intelligent entrepreneur would purposely carry the intensity of the use of land to this point. This stage of decreasing total returns is presented in order to emphasize that the point of diminishing returns, when that term is not qualified, refers to *decreasing marginal returns*, not to diminishing total returns.

The marginal returns per added unit of V , the average returns for V , and the total returns are summarized in Fig. 5. Line A representing returns per added unit of V increases from combination 1 to combination 2, then decreases until it becomes a negative quantity in combination 100. Line B , representing average returns per V , increases from combination 1 to 2, remains constant through 3, and then declines. Line C , representing total returns, increases to combination 7 and then drops

supposedly at combination 100. Increasing and diminishing returns as these terms are ordinarily used refer to whether line *A* rises or declines.

Relationship of Marginal and Average Returns. It will be noted that in Fig. 5 the curve of marginal (or additional returns) crosses the curve of average returns at the highest point of the latter. This must always occur when the average and marginal curves describing the increase or decrease of any magnitude are drawn, because as long as the additions are larger than the previously existing average, the average is increasing. As soon as the additions become smaller than the previous average, the average necessarily declines. So the point where the marginal and average amounts meet is the highest point of the average in

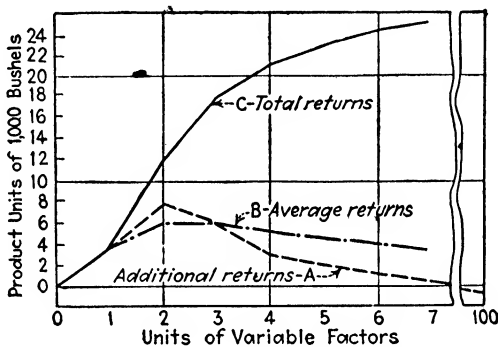


FIG. 5. Additional, average, and total returns with varying amounts of labor and capital on a fixed amount of land (hypothetical).

a case where the average rises and then falls; and the lowest point if the average falls and then rises.

For all practical purposes, the portion of the curve after combination 100 is reached, where total returns begin to decrease, is of no concern. Any farmer or other producer unless he miscalculates grossly will not apply variable factors so intensely as to reduce total output.

Likewise it appears that the portion of the curve before combination 2, where marginal returns begin to diminish, is of no practical importance. At this part of a curve an entrepreneur can increase total production by applying the variable factors to a smaller quantity of the total fixed factor that is available to him. Common sense would seem to dictate that he should do so, but we shall see later on in this book that there are certain situations where he cannot.

Diminishing Returns from Other Factors. The individual entrepreneur may hold constant the amount employed of any one factor of production and combine therewith increasing amounts of the other factors. Thus labor may be held at one man, and the land and capital with which this man's labor is combined may be increased indefinitely. Since, as

far as we know, the law of diminishing returns applies universally, the tenth 100 acres combined with one man's labor would not add so much to the product as would the second 100 acres, nor would the twentieth 100 acres added or combined with this same man's labor add as much to the product as would the tenth. The same is true of additional applications or combinations of capital, at least beyond a certain point, with the capacity of one man.

Accordingly, it is possible to state the law of diminishing returns as follows: *Assuming the methods of production unchanged, in the application of additional units of variable factors of production to a fixed factor, a point is reached after which additional applications of the variable factors will not bring forth proportional increases in output.*

The law thus stated is applicable not only if one factor is held constant and all the others are varied, but if all except one are held constant and that one is varied. It may be applied, for example, by increasing the amount of machinery in general, or of a particular kind of machinery, in combination with a fixed amount of land and labor. Unquestionably, beyond a certain point an additional machine would not increase the output to the same degree as did the last previously added machine.

LEAST-COST AND HIGHEST PROFIT COMBINATIONS

The Law of Proportions. In the further consideration of combinations of the factors of production, it should be emphasized that the law of diminishing returns is a physical law. It deals with inputs in physical units—acres, machines, or labor energy—and with outputs in pounds or bushels. But we live in an exchange economy in which productive factors are bought and output sold. Will not the relative cheapness of land, labor, or capital affect the desirable intensity of their use? And will not the price of the product likewise influence the desirable combination?

As an introduction to the problem of the proportioning of the factors of production which will be most profitable, we may well quote from Professor Davenport:

The ultimate principle underlying what is commonly known as the law of diminishing returns, and underlying this law in all its different applications, is, when stated in its more general form, an almost self-evident truth, namely, that *disadvantage attends any excess or defect in the supply of productive factors relatively one to another.* This large general law we shall term the *Law of Proportion of Factors.* It affirms nothing more than the disadvantage from bad combination in all production and in all business undertakings. As is generally true with economic principles, this law has its social and its competitive aspects. In its purely private and competitive form it means not much more than that in economic activities, as mostly elsewhere outside of the nursery, the asylum, and

the poorhouse, "fools get the worst of it." . . . *Disadvantage in price return accrues to the individual from any excess or defect in the relative proportions of his factors of production.* This is the competitive and individual aspect of the law of the bad combination of factors.

The explanations for this badness of combination may be various. In one way or another the entrepreneur has unskillfully gone about his undertaking, has attempted to get on with too much or too little land, has oversupplied or undersupplied himself with machinery or with seed or with fertilizers, has hired too few or too many laborers or laborers of the wrong sorts or grades, or has not correctly proportioned the different grades to one another.

. . . The law may refer to purely technological considerations, to the fact, *e.g.*, that in market gardening or in grain production there must be seed to go with the land, or that labor must stand in some sort of proportion to machinery, no matter how high the wage or how cheap the machinery; but, for ordinary competitive purposes, it is evident that a wise combination of factors must depend mainly upon the relative hires or costs at which these factors are to be had. This follows from the fact that all competitive entrepreneur computations, both of cost and of product, run in terms of price outlay as over against price product. *No one combination of factors, therefore, can be asserted to be the best for purposes of the entrepreneur, and to be diverged from only with disadvantage*, unless upon the assumption of an established relation of prices among the various factors employed. *With each change in relative prices a new combination comes to be the best combination.* It is, in fact, only by this dependence of the amount of the employed factor upon the price of that factor that the constant redistributions and substitutions of factors become possible. If wages are high, the pressure is strong toward the introduction of machinery; in countries of low wages, machinery is little called for; if land commands high rent, it pays to increase the proportions of laborers or of fertilizers or of implements.

The dependence of one factor of production upon another, the impossibility of indefinite substitution, requires, that, in the competitive price process in which the factors are employed, the entrepreneur combine wisely the different factors. But precisely because the entrepreneurs are different one from another, both in abilities and in financial resources, each different entrepreneur must have his one best, and different, method and proportion for the combining of the factors. Even if all farmers are equally skillful, this would neither require nor permit that they hire or buy the same quantity or kind of land, or manage their enterprises in precisely the same way.⁹

The Least-cost Combination. Since (1) entrepreneurs are concerned with the monetary costs and profits resulting from their combinations of factors; since (2) indeed it is impossible to add disparate physical inputs together (how could one measure a total input consisting of so much labor, so many units of land, the wearing out of so much capital equipment, and so on, in physical terms?); since (3) certain types of pro-

⁹ H. J. Davenport, *The Economics of Enterprise* (Macmillan, 1925), pp. 423-428.

ductive factors, services supplied by the state, for instance, cannot be measured in physical terms at all, we shall from now on study the combination of factors in terms of their money costs. Fig. 5 presented the situation in physical terms and showed the changes in output as the quantities of the variable factor increased. Fig. 6, which is in monetary terms, shows changes in monetary costs as output increases. This shift causes the curves of average and marginal monetary costs per unit of output to slope down first and then turn up, in contrast to the physical input curves of our first diagram. The reason for this is that in the stage of combination where average outputs are increasing (increasing return) costs are going down per unit of variable factor added. This

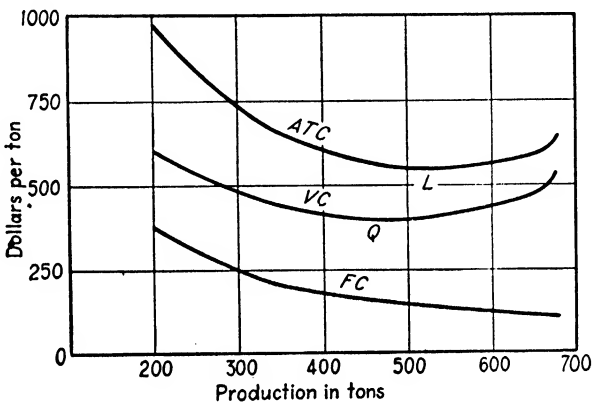


FIG. 6. Location of least-cost combination (from Table 14).

must be the case, because each dollar paid for a variable factor brings a larger output. In the stage of diminishing returns, costs go up, because the output per added variable factor becomes steadily less, so each dollar spent results in smaller output. The average cost curve (*ATC*) and the marginal (or additional) cost curve (*MC*) refer to the same things as the average return curve (*B*) and the additional return curve (*A*) of Fig. 5, except that they present them in a different aspect, as if seen in a mirror.

For our example in monetary terms we are taking the production and cost data for a hypothetical 50-acre sugar-beet enterprise. Land is taken as fixed, which is approximately true of this factor at a given time. For simplicity, labor is presented as the only variable, although in practice the increasing of labor without some increase in equipment might be unwise.

In the first part of Table 14, land use, including mortgage interest, taxes water assessment, etc., is taken at a cost of \$15 per acre and labor

at \$3 per day. Because the farm is 50 acres, the total fixed cost is $\$15 \times 50$, or \$750, in all combinations. Note that the per ton fixed costs fall as the output increases. The number of days of labor employed per year varies from 400 to 1,200. Note that the variable costs per ton fall with additional inputs of labor to the low point of \$3.91 when 600 days of labor are used, which is the point of highest output per day of labor. *The least-cost combination will be that at which the sum of the falling fixed costs per ton and the low or rising variable costs per ton are least.* With the costs of factors assumed here, the least-cost point is found when 700 days of labor are used, the point at which the cost of producing beets per ton is \$5.42. In this illustration, increments of labor have been taken as 100 days' labor, whereas a farmer actually would add labor in smaller amounts. It is therefore possible that some other combination using somewhere between 600 and 700 or 700 and 800 days of labor would be still more economical. That this least-cost point is beyond the point where diminishing returns begin is evident from the column headed "additional" production. The maximum additional output of 140 tons per additional 100 days' labor is reached in combination 2.

The reason that the lowest cost point is beyond the point of diminishing physical returns is that fixed costs decrease steadily with output; adding fixed costs to the variable costs, which increase after the diminishing returns point is reached, pushes the point of lowest average costs further on.

This is shown in Fig. 6, which graphically presents the first part of Table 14. Quantity or output is measured from the line OY to the right. Cost is measured from the line OX upward. By the distance from the base to the line FC fixed costs per ton are shown for different outputs. By the distance from the base to VC , variable costs are shown for the same outputs, and by the distance from the base to ATC , total costs per ton, or the sum of the fixed and variable costs (also called *average total costs*), are shown for these outputs.

The lowest point of the VC curve, the point of diminishing returns, is Q at an output of 460 tons, but the least-cost point is at L , at an output of 525 tons.

In the second part of Table 14, land use is taken at \$25 per acre cost, and labor again at \$3 per day. In this case it is desirable to use the land more intensively, to use more of the relatively less expensive factor, labor. Another way of stating the same point is to indicate that if more tons of beets are produced, the per ton cost for the fixed factor, land, will be reduced. The significance of the higher land cost per acre in the second part of the table is shown by the fact that the least-

cost point is reached in this case when 800 days of labor are applied to the 50 acres.

In the third part of Table 14, land use is taken at a low cost of \$10 per acre, but labor is assumed to cost more, \$6 per day. Now labor

TABLE 14. THE LOCATION OF THE LEAST-COST COMBINATION OF FACTORS WITH DIFFERENT SETS OF COST DATA

Combination	Inputs		Production in tons		Per ton cost (first set of cost data)		
	Fixed (land in acres)	Variable (labor days per year)	Total	Additional	Land (fixed) at \$15 an acre	Labor (variable) at \$3 per day	Average total
1	50	400	200	...	\$3.75	\$6.00	\$9.75
2	50	500	340	140	2.21	4.41	6.62
3	50	600	460	120	1.63	3.91	5.54
4	50	700	525	65	1.42	4.00	5.42
5	50	800	575	50	1.31	4.17	5.48
6	50	900	615	40	1.22	4.39	5.61
7	50	1,000	645	30	1.16	4.65	5.81
8	50	1,100	665	20	1.14	4.96	6.10
9	50	1,200	675	10	1.11	5.33	6.44

Per ton cost (second set of cost data)			Per ton cost (third set of cost data)		
Land (fixed) at \$25 an acre	Labor (variable) at \$3 per day	Average total	Land (fixed) at \$10 an acre	Labor (variable) at \$6 per day	Average total
\$6.25	\$6.00	\$12.25	\$2.50	\$12.00	\$14.50
3.68	4.41	8.09	1.47	8.82	10.29
2.72	3.91	6.63	1.08	7.83	8.91
2.38	4.00	6.38	0.95	8.00	8.95
2.18	4.17	6.35	0.86	8.36	9.22
2.03	4.39	6.42	0.82	8.68	9.50
1.94	4.65	6.59	0.78	9.30	10.08
1.88	4.96	6.84	0.75	9.43	10.68
1.85	5.33	7.18	0.74	10.67	11.41

should be economized, and each day's labor should be scattered over more land. On the basis of this statement, it is seen that the average costs are lowest when 600 days of labor are used on the 50 acres, whereas

when land cost \$15 and labor \$3, the combination of using 700 days of labor was distinctly the more advantageous.

The principle of the least-cost combination of the factors of production is valuable for two reasons. First, it explains why producers in various regions of the world use different proportions of the factors in producing the same goods. The Argentine wheat farmer uses land plentifully and the United States wheat farmer almost as plentifully; but the European or Oriental farmer must economize in the use of land. The European or Oriental farmer, on the other hand, uses labor abundantly and land and capital sparsely. Costly labor encourages the American farmer to use machinery. Second, the least-cost principle shows how the efficient farmer will change the proportioning of the factors on his farm with changes in the relative cost of the factors. Thus, high wages during and after both world wars encouraged the substitution of machinery for labor.

If at any time in agriculture, manufacturing, mining, transportation, or commercial enterprises the least-cost combination is not being used, it is entirely possible that increased output can be brought forth at lower costs per unit of output. If a factory is used only 8 hours a day, the total costs will not be tripled if it is used 24 hours a day, since such fixed costs as insurance, taxes, interest, and some management expenses will increase little, if any. A farmer who has an expensive dairy barn, milking machine, and other equipment will find that his costs per pound of butterfat will be less if he has enough cows to utilize his equipment fully, than if he has only half that many cows. If in any industry the least-cost point has not been reached, entrepreneurs will seek so to adjust the proportioning of the factors in their enterprises and the volume of output as to reduce unit costs.

Marginal Costs. In addition to the concepts of average and total cost of production, another aspect of cost, *marginal cost*, must be understood. This represents the additional or marginal cost of increasing previous production by one unit. The term *marginal* is much used in economic literature. It refers to the "last" or "final" unit. Above have been mentioned marginal returns as well as costs, the costs of producing the "last" unit. We shall at other times refer to marginal revenue, which is the return a seller received from the sale of the "last" unit. Marginal cost is found by taking the total cost of producing x units and subtracting it from the cost of producing $x+1$ units.

In Table 15 and Fig. 7 are shown the marginal costs (*MC*) and other costs of an imaginary cheese factory. The fixed cost would be for equipment and the variable costs for raw materials and labor. The data are of the same nature as those in Table 14 and Fig. 6 but are shown in more detail, related directly to production, and the combination and

physical-input columns are dropped in the interest of simplicity. They could be restored by assuming the cost of the equipment to be \$50, of a unit of cream \$1, and a unit of labor \$3.

The chart shows the marginal cost curve passing through the lowest point of the average cost curve, as is characteristic of such curves. The marginal cost curve also passes through the lowest point of the variable

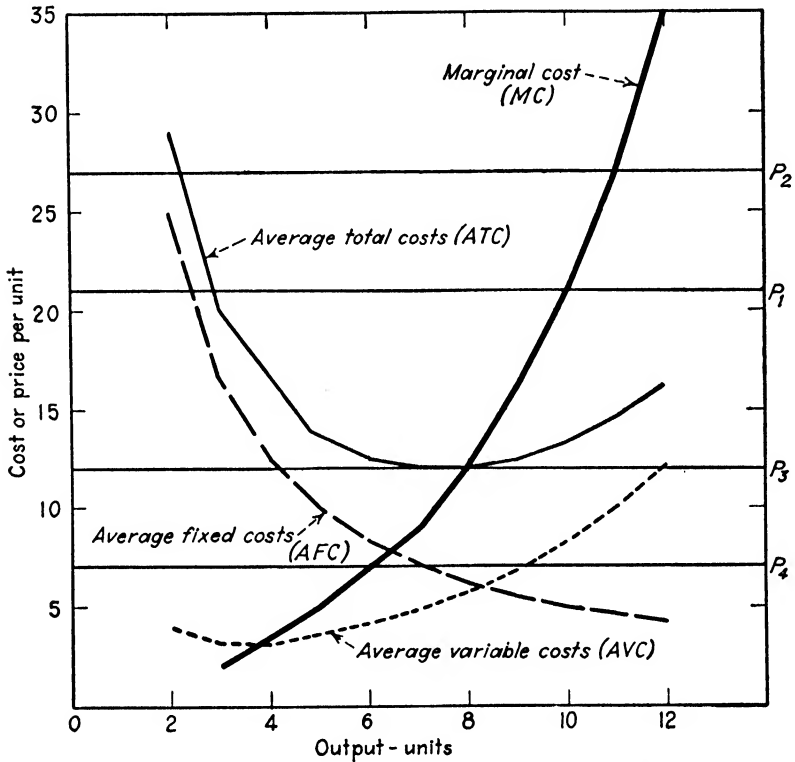


FIG. 7. Costs in a hypothetical cheese factory (from Table 15).

cost curve, which calls attention to another important point about the relationship of these magnitudes. Marginal cost is wholly a function of the changes in variable cost as production increases. Since fixed costs by their very nature remain the same throughout the entire range of production, the whole change in total production costs is accounted for by the variable costs, which means that they alone are responsible for changes in marginal costs also.

The general shape of the cost curves in this chart is the same as in our earlier representation of the cost figures for a hypothetical sugar-beet farm. In economic discussion generally, it is assumed that the short-run cost curve for any business unit, farm, factory, store, or com-

bination thereof is U-shaped. In actual fact, however, cost curves may be L-shaped, that is, production can be carried on over a wide range at the same average cost, once the point of diminishing returns has been reached.

Highest Profit Combination. Entrepreneurs in an economy of private ownership are concerned with costs, but even more they are concerned with profits, with making the most profit possible out of a given operation. Therefore the output of a business enterprise and the input of productive factors required to produce that output are determined by the profit prospects. That amount is produced which will return the largest

TABLE 15. HYPOTHETICAL COSTS—CHEESE FACTORY

Units of product	Total fixed costs (<i>FC</i>)	Average fixed costs (<i>AFC</i>)	Total variable costs (<i>VC</i>)	Average variable costs (<i>AVC</i>)	Average total costs (<i>ATC</i>)	Total cost (<i>TC</i>)	Marginal cost (<i>MC</i>)	Price (<i>P</i>)
2	\$50	\$25	\$ 8	\$ 4	\$29	\$ 58		
3	50	16 $\frac{2}{3}$	10	3 $\frac{1}{3}$	20	60	\$ 2	
4	50	12 $\frac{1}{2}$	13	3 $\frac{1}{4}$	16 $\frac{3}{4}$	63	3	
5	50	10	18	3 $\frac{4}{5}$	14	68	5	
6	50	8 $\frac{1}{3}$	25	4 $\frac{1}{6}$	12 $\frac{1}{2}$	75	7	\$ 7
7	50	7 $\frac{1}{7}$	34	4 $\frac{6}{7}$	12	84	9	
8	50	6 $\frac{1}{4}$	46	5 $\frac{3}{4}$	12	96	12	12
9	50	5 $\frac{5}{9}$	62	6 $\frac{8}{9}$	12 $\frac{5}{9}$	112	16	
10	50	5	83	8 $3\frac{1}{10}$	13 $3\frac{1}{10}$	133	21	21
11	50	4 $\frac{6}{11}$	110	10	14 $\frac{6}{11}$	160	27	27
12	50	4 $\frac{1}{6}$	145	12 $1\frac{1}{2}$	16 $\frac{1}{4}$	195	35	

profit. This is a point in our analysis where the marginal cost concept is of great use. For as long as the cost of making an additional unit is less than the price, the profits of the enterprise will grow if more is sold. At the point where the additional cost of the n th unit equals the price, however, no further profit is derived and there is no point in carrying production further. In sum, under theoretically ideal (competitive) conditions production is carried to the point where marginal cost equals price.

In simpler language let us assume that the price of cheese is \$21 per unit and it does not matter if our manufacturer sells five or ten units, all he can get is still \$21 for each. Under these conditions, price equals marginal cost when ten units are made and sold, as shown in Fig. 7 by the intersection of line P^1 , representing a price of \$21, and the MC curve. With a price of \$21 the manufacture and sale of ten units will

bring the greatest profits, because sales of more or less with marginal cost not equal to price would reduce them.

If the price should move to \$27 (line P^2) then a production of 11 units would be most profitable. If it happened that the price were \$12, that would be the only point where the highest profit and lowest cost points coincide. While under competitive conditions there is a tendency for this coincidence to take place, as will be explained later, it is by no means necessary.

Again if the price should be below \$12 (P^3), less than the average total cost of making one unit at any possible range of output, what should the firm do? It would produce that amount which would keep its losses to a minimum. If the price were \$7 (P^4), six units would be produced, for at that point losses will be less than anywhere else. Larger or smaller sales, as reference to the table or chart will show, would increase losses.

The point of highest profit combination is also known as the *intensive margin*. It is the point to which the addition of variable factors in combination with a group of fixed factors will be pushed. When prices are high above the lowest cost point, when on the chart the highest profit point is far to the right, it pays to use the variable factors intensively, that is, to apply more of them to the fixed factor. If the highest profit point shifts to the left, less intensive application of the variable factors is indicated.

Farmers and the Proportioning of the Factors. Farmers do not necessarily have the proper proportion of factors on their farms at a particular time, but there is an underlying tendency to change farm plans toward the proper combination, and financial success depends very largely upon doing so. When a larger acreage or more labor seems more profitable, farmers will gradually readjust their plans along that line, and those who do so will be the ones who will be the most likely to have pure profits or a satisfactory labor income. With tractor power and the combined harvester, large wheat farms are more economical than small ones and the tendency is to increase the size of wheat farms.

Furthermore, farmers will adjust the intensity of culture with changes in the prices of their products. From 1920 to 1930, or after the First World War, many fruit farmers came to expend less on cultivation and care of their trees; the lower prices did not justify intensive culture. Again, with the collapse of farm prices in 1930-1933 farmers hired less labor, used less equipment and in general farmed less intensively. As prices rose in the years after 1940 they again turned to intensive farming, especially in the use of machinery and application of fertilizer.

Thus far in the discussion, all units of each factor have been assumed to be of equal effectiveness in production. In a later chapter the effect

on farm organization of the well-known differences in the managing ability of farmers, in the fertility of land, and in the productive ability of other factors will be discussed.

Other Applications of Diminishing Returns. The law of diminishing returns with its corollary, the law of proportions or principle of substitution, has several significant applications which should be further examined. In the first place, it is fundamental in explaining the organization of the farm or any other producing unit. Second, it assists greatly in analyzing the determination of prices of particular goods. Finally, it is the starting point in analyzing the distribution of the national income among the productive agencies. These applications will be noted in the chapters to follow.

Questions and Problems

1. Explain the conditions under which the law of diminishing returns was first carefully formulated.
2. How do you account for the upward tendency of living standards of this country when you consider the application of the law of diminishing returns?
3. What changes have taken place in the natural increase (birth rate minus death rate) in the United States and in several other countries since 1920?
4. Distinguish marginal returns, average returns, and total returns.
5. Distinguish marginal costs and average costs.
6. What is meant by the statement that "the law of diminishing returns is a physical law"?
7. Explain how the highest profit combination is derived.
8. How did the 1940 production in this country in the three major industries discussed in this chapter compare on a per capita basis with that of 1910 and that of 1929? How did the output per worker in these industries in 1940 compare with that of 1910?
9. Should a farmer apply additional labor and capital to his land after the point of diminishing returns has been reached? Explain accurately and fully.
10. Why is the least-cost combination not necessarily the highest profit combination?
11. Mention some conditions under which high wages will tend to result in direct human labor being replaced by machines. Mention some specific instances in which this has happened.
12. Suppose the price of apples declines relative to other prices for a period of three years, what readjustments would you expect apple orchardists to make in their production organization? Suppose apple prices had risen, what would entrepreneurs do and why?

Suggested Readings

1. J. D. and A. G. Black, *Production Organization* (1929), Chaps. V and VI, contains a detailed discussion of the proportioning of the factors of production under a variety of circumstances.
2. H. R. Tolley, J. D. Black, and M. J. B. Ezekiel, "Input as Related to Output in Farm Organization and Cost of Production Studies," U.S. Department of Agriculture *Bulletin* 1277, is recommended on the subject indicated by its title.

3. J. M. Cassels, "On the Law of Variable Proportions," in *Explorations in Economics* (Essays in honor of F. W. Taussig), is a discriminating treatment of the subject.

4. National Resources Committee, *The Problems of a Changing Population* (May, 1938), analyzes various aspects of population change and the outlook for the future as to population within the United States.

5. F. W. Taussig, *Principles of Economics* (1939), Vol. I, Chap. 16 (for which assistance from J. M. Cassels is acknowledged), furnishes a clear and simple explanation of the relationship between marginal costs and highest profits.

6. J. D. Black, *et al.*, *Farm Management* (1947), Chap. XVII, gives actual examples of diminishing returns.

7. Fairfield Osborn, *Our Plundered Planet* (1947), discusses the destruction of natural resources.

CHAPTER 6

BUSINESS ORGANIZATION—THE PLACE OF THE GOVERNMENT

To have a full understanding of the economics of agriculture it is necessary not only to know how farm businesses are organized, but also to be acquainted with the structure of other forms of business. The success of a farm enterprise depends in large part on the operator's skill in selling and buying, so that farmers should know the basic organization of urban businesses, to which they sell and from which they buy. The first part of this chapter is therefore devoted to a description of various forms of business organization, including cooperatives, which perform buying and selling services for farmers. The second part concerns itself with an exposition of the place of the government in economic activity, because no account of our economic organization would be complete unless it made clear the important place of the government in the current economic scheme of things.

ENTREPRENEUR ORGANIZATION

Individual Proprietorship. When a business enterprise is to be undertaken, it may be organized by the entrepreneur or entrepreneurs in one of three ways, (1) an individual proprietorship, (2) a partnership, or (3) a corporation. If a business is organized as an individual proprietorship, the individual owner assumes all responsibility for the success or failure of the enterprise and risks not only the funds which he invests in the enterprise, but, in case of failure with debts in excess of assets in this particular enterprise, any other assets which he owns, which may be seized for the satisfaction of these debts. Offsetting advantages are that the individual proprietor, by being able to manage his enterprise without the interference of other people, retains a freedom and decisiveness of action which cannot be gained where more than one person is involved, and that he is not subject to certain expenses connected with the corporate form of organization. The predominant form of entrepreneur organization in agriculture today is the individual proprietorship.

Partnership. When one individual does not possess sufficient funds to purchase the enterprise in which he wishes to embark, he may enter

into partnership with one or more other persons, and a larger enterprise may be undertaken. There are, however, four important objections to the partnership form of organization for most kinds of business. First, any one of the partners may within the scope of the business bind the partnership to a contract. Therefore it is necessary that the partners know each other well and understand each other's moral habits and business ability. Second, in case the partnership fails, any of the partners may be held liable for all the debts of the partnership. In case one partner has considerable assets outside of the partnership, he is risking these assets as well as those invested in the partnership. Third, if one of the partners dies or wishes to sell his interest, the whole partnership must be dissolved and a new partnership formed with those who acquire the interest of the retiring or deceased partner. Fourth, disagreement between the partners as to business policy may easily arise and lead to slowness of action, which is in sharp contrast to the freedom and decisiveness of action in the individual proprietorship.

The Corporation. The third form of entrepreneur organization is the corporation. The corporation has been defined as a legal person artificially created by law and possessing some, though not necessarily all, of the rights, privileges, and obligations of a natural person. It may sue and be sued and may acquire, own, and sell property. Where more capital is demanded in an enterprise than that which can be supplied by one individual, the corporate form of business is in very general use, and, because of certain qualities which have been given it by law, it is quite frequently employed, especially in business of a hazardous character, even when most of the capital is supplied by one individual. Its advantages are:

1. *Limited Liability.* A person who buys the stock of a corporation risks ordinarily only the amount of money which he originally invests in it, except that in case of stock with a stated par value the full par value of the shares must have been paid in.

2. *Ease in Transferring Ownership.* The shares of ownership, known as shares of stock, may be bought and sold freely without disturbing the organization of the corporation and ordinarily without the consent of the other owners.

3. *Ease in Combining Assets.* The factors of limited liability in case of insolvency and the ease of transferability of ownership make it possible to bring together a large volume of capital in one enterprise. Therefore it is especially suited to large businesses.

4. *Permanence.* The corporation may have a permanence and stability not possible with the other forms of business organization. Although incorporation involves certain legal details and the payment of certain license and other fees to the state, the costs involved are minor

compared with the advantages obtained by this form of organization when a large supply of capital is required to be supplied by many individuals.

When a single person supplies most of the capital of a business, the usual reason for incorporation (if resorted to) is to take advantage of the feature of limited liability. The advantage of that feature is sometimes overestimated. If a corporation is in a weak financial condition it cannot borrow without the endorsement of its notes by interested stockholders. Furthermore, high taxes on profits are applicable to a corporation but not to an individual proprietorship.

A corporation comes into existence by being granted a charter, that is, by having its articles of incorporation approved by the state. In the early history of the country, charters could be secured only by special legislative acts. At present, most corporations are organized under general corporation laws, under which the charter is issued by the secretary of a state as a matter of course after certain formalities have been complied with.

Sources of Capital. Any form of business enterprise derives its capital from two sources: the contributions of the owners and loans from creditors. Owners' equities in corporations are represented by shares of stock, which represent partial ownership in the corporation as a unit and not ownership of specific property of the corporation. Stock is of two general types, *preferred* and *common*. Preferred stock has usually some preferences or rights over the common stock, though the mere designation *preferred stock* conveys but little meaning, unless its particular preferences are known. It may be preferred as to assets, dividends, or voting power. If preferred as to assets, it is entitled in case of liquidation to specified payments before anything is secured by holders of common stock. If preferred as to dividends it is entitled to dividends of a specified amount before any dividends are paid to holders of common stock. Preference as to voting power is less common, and, where provided for, it usually exists only when dividends have not been paid, or the corporation is threatened with insolvency. In many corporations the preferred stock has no voting power. Preferred stock may be *cumulative* or *noncumulative*. If cumulative, the dividends which are not paid currently accrue and must be fully paid before any dividends may be paid on the common stock. Sometimes preferred stock is *participating*, in which case it shares with the common stock to a specified degree in dividends which are paid on common above a specified limited amount. A corporation may have different classes of preferred stock with widely different preferences. In any particular case it is necessary to consult the charter and bylaws of the corporation and the contract under which the stock was issued to ascertain the exact nature of the preferences of

a particular issue. There are issues of so-called preferred stock which have no preferences whatever over the common stock.

Common stock represents the residual ownership, or claims to assets and earnings after all prior claims have been satisfied. Usually all common stock has equal voting power on a per share basis, and equal rights to earnings, but to this there are some exceptions. Sometimes corporations issue several classes of stock known as Class A, Class B, etc., a frequent difference between such classes being in voting power. Agricultural cooperative marketing associations or corporations quite commonly have provisions that each individual owner of stock shall have but one vote regardless of the number of shares he owns. If a business is prosperous, the common stock may be very valuable and receive large dividends, but, if the business is barely struggling along, it may become of very little value because it represents the last claim on assets and earnings.

In contrast to stocks, bonds represent claims of creditors against a corporation. A *bond* has been defined as *a subdivided interest-bearing contract for the future payment of money*. Such subdivided contracts when running for relatively short periods of time, ordinarily less than five years, are, however, more generally known as *notes*, the term *bond* being generally limited to those maturing after longer periods. In the issue of private corporation bonds there are three important parties, the borrowing corporation, the bondholders, and the *trustee*. The last mentioned is usually a trust company or a bank. The full contract under which the bonds are issued is known as the *trust agreement* and is entered into between the borrowing corporation and the trustee representing the bondholders.

Bonds are of many kinds, varying as to kind of security, interest rates, time for which they are to run, manner in which interest and the bonds themselves are to be paid, and other features. On the basis of kind of security the most important type is the *mortgage bond*, secured by a mortgage on specific property. For railroads especially, there are many classes of mortgage bonds, such as first, second, and third on particular properties, first consolidated, etc. Another general type is the *collateral trust bond*, secured by certain valuable securities, ordinarily stocks or bonds of other corporations, deposited with the trustee. Another type is the *debenture bond*. This term is used loosely in a variety of ways but usually refers to a bond secured only by the general credit of the corporation, rather than by the pledge of specific assets.

In general, the interest on corporation bonds must be paid, or the corporation may be thrown into a receivership or bankruptcy. One important exception to this is in the case of income bonds, on which

interest needs to be paid only if earned, and they, therefore, somewhat resemble preferred stocks.

Bonds and notes other than those running for but a very short time are generally referred to as the *funded debt* of the corporation. The word *bond* to most people suggests a high degree of security. No instrument of indebtedness, however, is valuable unless the borrower has assets or earnings, and corporation assets disappear rapidly if there are no earnings. Present and prospective earnings are the basis of the value of all corporation bonds and stocks.

Corporate Management. The management of a corporation is vested ultimately in the voting stockholders. Practically, however, the individual stockholder's part in management is essentially limited to the selection of a board of directors and the approval of changes in the articles of incorporation and bylaws. To participate in electing directors, which is done in the annual meeting, and to receive information about the affairs of the corporation are the stockholder's most important rights. His privilege is to hope for dividends. The directors in turn entrust the actual management of the business to a hired managerial staff, which in the case of our large corporations ordinarily owns but a small part of the stock. In most corporations stockholders may cast their votes at the annual meeting either in person or by proxy. In the very large corporation, however, scattered stockholders with small holdings exert but little influence, and a relatively small group of people, often those in high managerial positions, dominate the policy of the corporation. In such cases ownership and control are divorced, and it is possible that the controlling group will not conduct the corporation for the benefit of the stockholders. Furthermore, since the owners have always been responsible to society for the way in which property was used, this new condition of somewhat irresponsible management raises grave social questions.¹

Importance of the Corporation. By far the greatest part of all our business activities other than agriculture is carried on under the corporate form of organization. Millions of people own corporation stocks, and all are indirectly affected by their policies. A. A. Berle, Jr., and Gardiner C. Means found in 1933 that the assets of the two hundred largest nonfinancial corporations comprise half of the corporate wealth of this country and almost one-fourth of the total wealth.² There is no reason to believe that this situation has changed materially since.³

¹ See A. A. Berle, Jr., and G. C. Means, *The Modern Corporation and Private Property* (Commerce Clearing House, 1933), particularly Book I, Chap. V, and Book IV, Chap. IV.

² *Ibid.*, p. 360.

³ See the article by K. C. Stokes in *Survey of Current Business*, November, 1947.

COOPERATIVES

A cooperative is an organization whose members have joined together, usually but not necessarily in a formal, legal manner, so that certain business services, such as buying or selling, can be performed as economically as possible for them. Although it may be legally incorporated and its shares sold to and held by scattered individuals, a cooperative is distinguished from a corporation in that its object is not to make profit, but to enable its members to buy as cheaply or sell at as high a price as possible. Further, in a cooperative each individual member usually has one vote, regardless of the number of shares held, whereas in the case of the corporation each share usually has one vote. In fact this "one-man-one-vote" arrangement is required for an organization to qualify as a cooperative under the Capper-Volstead Act, a Federal statute granting certain tax exemptions and other privileges to agricultural cooperatives. Another requirement for qualification under the Capper-Volstead Act is that at least 50 per cent of its business must be performed for members.

While in the past cooperatives tried to undersell their private competitors, the usual current practice is for a cooperative to charge its members, to whom it sells goods, regular market prices but to return to them, in proportion to their purchases, any profits above the amounts retained for reserves. Thus, if a buying cooperative has earned 3 cents per \$1 of sales and a farmer member has bought \$500 worth of fertilizer and gasoline through it, he would receive a "patronage dividend" of \$15.

The benefits from belonging to cooperatives are derived not so much from monetary gains as from the advantage of having an agent whose interest is identical with that of the buyer or seller and who, therefore, tries to get the best price and assured quality, as contrasted with the usual practice of dealing with an outsider (individual or corporation) whose interest is to make the greatest possible profit for himself. In many cases selling cooperatives, like the local orange-packing agencies in California or the cooperative creameries in Minnesota, are united in national federations like the California Fruit Growers Exchange or Land-O'-Lakes Creameries.

With some exceptions the cooperative movement in the United States is largely a farmers' movement, cooperatives engaged in selling agricultural products and buying farm supplies being far more important than any others. The structure of cooperatives and their place in the farm marketing system will be further discussed in Chap. 23 and 27.

FINANCIAL STATEMENTS

No real understanding of corporate or other business affairs is possible without an understanding of financial statements. The most important

of these are the balance sheet and the profit and loss, or income, statement. These will be briefly explained.

The Balance Sheet. The balance sheet represents the condition of a business at a particular time. It consists of two separate lists, one designated *assets* and the other *liabilities*, or more accurately, as is sometimes the modern practice, *liabilities and net worth*. Under assets there are listed by class all properties owned by the individual, partnership, or corporation, including cash sums due from debtors, buildings, machinery, and inventory of goods in process and finished goods, with the value of each class, as determined by the accountant.

The other side of the balance sheet consists of two parts, the true liabilities or obligations to creditors and the net worth or proprietorship. True liabilities are sums which are owed to others. Subtracting the true liabilities from the value of the total assets gives the net *book value* or net worth of the property of the owners. In the case of a corporation, the total net worth divided by the number of shares outstanding gives the net worth or book value per share. Table 16 reproduces in con-

TABLE 16. BALANCE SHEET OF SWIFT & Co., NOV. 1, 1947

Assets	
Cash.....	\$ 23,513,469
Marketable securities.....	44,979,172
Accounts and notes receivable.....	75,678,972
Inventories.....	<u>137,537,034</u>
Total current assets.....	\$281,708,647
Investments in subsidiaries.....	11,655,600
Property at appraised value Jan. 1, 1914, plus subsequent additional cost	
Land.....	\$ 21,390,570
Buildings, machinery, equipment, etc....	<u>223,820,817</u>
	\$245,211,387
Less: Reserve for depreciation.....	<u>124,331,623</u>
Fixed assets.....	120,879,764
Other assets.....	<u>22,903,490</u>
Total assets.....	\$437,147,501
Liabilities	
Notes and accounts payable.....	\$ 31,520,965
Accrued taxes.....	30,337,615
Other current liabilities.....	<u>13,385,346</u>
Total current liabilities.....	\$ 75,243,926
Long-term debt.....	48,500,000
Reserves for inventory price decline and high cost assets, etc.....	33,767,000
Capital stock: 6,000,000 shares, par value \$25.....	150,000,000
Accumulated earnings, formerly called surplus.....	<u>129,636,575</u>
Total liabilities.....	\$437,147,501

densed form the consolidated balance sheet of Swift & Co., meat packers, for Nov. 1, 1947.

Land, buildings, and equipment are listed after depreciation reserves, or estimated depreciation from original cost, have been deducted. Depreciation, it will be remembered, means wearing out, and the deduction for it represents the reduction in the value of buildings and equipment due to use. The value given for this item, therefore, is the net value. Capital stock is the amount presumably paid in by stockholders. After subtracting all true liabilities and the par value of all the capital stock from the assets, there was still an excess of \$129,636,575 of assets. This is considered surplus, or what the stockholders own in excess of the par value of stock outstanding, which they also own. The sum of the capital stock and surplus constitutes the net worth. Surplus generally arises from earnings which were not paid out in dividends but were invested in items which appear on the asset side of the balance sheet. Cash and such items as accounts receivable and inventories, which it is assumed can be converted into cash in a relatively short period of time, are called *current assets*. Debts payable in a relatively short time, such as accounts payable and short-time notes payable, are called *current liabilities*. Assets not expected soon to be converted into cash and liabilities which are not payable at any relatively early date are called *fixed assets* and *fixed liabilities*, respectively. Reserves are set up for contingencies which it is feared will reduce the value of the assets. In this case a reserve for high cost assets was set up because it was felt that assets acquired at high prices prevailing immediately after the Second World War would not be worth that much when "normal" conditions returned, and these anticipated losses had to be covered.

The Profit and Loss Statement. The statement of profit and loss is also referred to as the *income statement* or as the *operating statement* and gives the result of operations for a fixed period of time. Every properly conducted business compiles such a statement annually, and many do so quarterly or monthly. These statements, however, are not standardized. Though the example used here is typical of a great many, there are any number of variations. In our example of a profit and loss statement the first item is gross income from sales or amount of sales. Cost of goods sold, or cost of sales, follows. The latter subtracted from the former gives the gross profit. Cost of sales generally includes manufacturing expenses like factory wages and cost of raw materials. Next are listed the operating expenses. Although there is some variation in accounting practice, these usually include such items as property taxes, office expenses including salaries, selling expenses, and depreciation, but not interest, income taxes, or any return on invested capital. The operating expenses subtracted from the gross profit gives the operating profit.

To the operating profit is added income from investments, etc., and from the resulting sum are subtracted other expenses, including usually interest on borrowed money and always income taxes. The result gives the net profit. This is available to be paid out in dividends or added to the surplus of the business. Taxes and interest on funded debt are generally referred to as *fixed charges*. Table 17 reproduces in condensed form the

TABLE 17. INCOME STATEMENT

	1946	1947
Sales.....	\$163,921.40	\$177,498.61
Cost of sales (or of merchandise sold).....	122,288.30	129,659.28
Gross profit.....	41,633.10	47,839.33
Ratio of gross profit to sales.....	25.40%	26.95%
Operating expenses.....	36,095.67	38,767.60
Ratio of expenses to sales.....	22.02%	21.84%
Operating profit.....	5,537.43	9,071.73
Other income.....	3,694.65	3,598.19
Gross income.....	9,232.08	12,669.92
Other deductions.....	720.80	1,179.40
Net income or net profit.....	8,511.28	11,490.52
Shares of stock outstanding.....	1,000	1,000
Net earnings or profit per share.....	8.51	11.49

income or operating statement of a small business. The data are presented for two years to enable comparisons to be made.

The accounting terminology explained in the preceding section is applied in general to all business undertakings, though there is no absolute uniformity in practice. The most rigid terminology is that applied to railroad accounts, as the precise manner in which each term shall be used is prescribed in detail by the Interstate Commerce Commission. The necessity of calculating Federal income taxes in a particular way has contributed much to uniformity in accounting.

Farm-management Statements. In accounting in farm management, a special terminology has been devised to supplement general accounting terminology and give precision to certain concepts. The need for a precise terminology has become especially apparent in farm-management studies by experiment stations. In the use of the terms which have been adopted, as in general accounting terminology, there is some variation. The following are, however, the most usual meanings assigned to important terms used in analyzing a farmer's business operations for a particular year. The first of the terms is *receipts*, which is used to refer to the

receipts from the production of a particular year, excluding receipts from goods produced and held over from previous years. It includes, therefore, (1) the amounts received for goods produced during the year and sold, (2) the estimated value of goods produced for sale during the year and still held for sale, and (3) the amount by which the value of livestock and the feed supply have been increased within the year from production. In calculating receipts, the value of the use of the farm dwelling and of the food and fuel produced on the farm and used by the farm family is not included.

The next important term is *expenses*, which includes value or cost of all labor except that of the operator; cost of any seed or feed that is purchased; twine, sacks, and the like; crop and building insurance; upkeep and depreciation on machinery and buildings; taxes; and other costs assignable to farming operation rather than to living. It also includes the net decrease, if any, in livestock and feed and supplies. The deduction of expenses from receipts leaves *farm income*. This is the amount, in addition to the use of house and food and fuel supplied by the farm, which the farmer received for his services and as interest on the investment in the farm and equipment. Subtracting a fixed percentage as interest allowed on investment in real estate and equipment (commonly 5 or 6 per cent) from the farm income leaves a sum termed *labor income*, which represents what is left to pay the operator for his services, again excluding contributions to living received directly from the farm. *Family living from the farm* is estimated by placing a moderate rental value on the house and adding to this the farm value of food and other contributions to the living furnished by the farm. *Operator's earnings* are then calculated by adding together the *labor income* and the *family living from the farm*. It would, of course, be possible to add to expenses an arbitrary estimated value of the labor supplied by the operator and then to calculate the percentage which the total remaining net income would amount to on invested "capital." This would be following more nearly the practices of accounting in other lines of business undertakings and actually is the practice followed in farm cost accounting by some state experiment stations. Some experiment station investigators calculate both the labor income, after making a definite charge for the use of capital, and the percentage earned on capital, after making a definite charge for the operator's labor. *Labor income* as ordinarily calculated may be increased by placing a low value on the farm real estate and equipment or using a low rate of imputed interest, and it may be decreased by placing a high value on the farm property or using a high rate of interest. Unless it is known how farm labor income was calculated, the term does not have a very definite meaning.

PROFITS, COST, AND PRICES

Business Profit Concepts. In the preceding discussion the term *profits* has been frequently used. This is a term employed with such a wide range of meanings that it is essential in any discussion that there should be an understanding of the exact sense in which the word is used. If we refer again to the typical profit and loss statement of a business, there will be noted (1) *gross profit*, which is the difference between the cost of purchased goods sold, including freight and drayage, and the receipts from sales. Out of the gross profit there must come all costs of doing business before there can be any net profit, yet gross profit is often spoken of simply as profit without apparent appreciation of this fact. Next there is (2) *operating profit*. In arriving at this, most of the costs of doing business have been deducted from gross profit, yet such important items as interest on borrowed money, in most cases, and income taxes have not yet been deducted. Inability to provide for the interest on borrowed funds may force a business into bankruptcy, even though it has an operating profit. Proceeding, we come to (3) *net profit*, which is what the businessman most often has in mind when he speaks of profit. It is to be carefully noted, however, that this is in the nature of a return on "capital," as that term is used in business language. Net profit refers to the income of the business which remains after all expenses have been deducted, including a bookkeeping charge for depreciation of fixed assets. It is the "profit" received by the owners of the business as a return on their investment.

Referring again to the profit and loss statement on page 134, we observe that in 1946 the net profit amounted to \$8.51 per share of stock and in 1947 to \$11.49 per share of stock. Assuming that the shares of stock were \$100 each, paid in, and that there was no surplus, the "profits" of the business amounted to 8.51 per cent and 11.49 per cent for the two years, respectively, on invested capital. However, this is not at all likely to have been the case. Usually a successful business is one that has grown. In early years, if it earned a moderate return on invested capital, it probably paid no dividends but left these earnings in surplus. Assuming now that the business whose profit and loss statement we have been examining had in addition to \$100,000 paid-in capital, also \$100,000 surplus retained in the business instead of being paid in dividends from profits of previous years, then the net profits for the two years shown amounted to \$8.51 and \$11.49, respectively, for each \$200 of invested capital, which would be 4.26 per cent and 5.75 per cent, respectively, for these years on the stockholders' total investment in the business, or on the net worth of the corporation.

Pure Profit. A fourth concept of profit is that of a return to the entrepreneur, distinct from returns to labor, land, and capital as the three other factors in production. We have already described the entrepreneur as executive head of an enterprise, but that is too brief a description, for such a position might be filled by a hired manager. And indeed the dividing line between the entrepreneur and a manager is not easy to draw, a chief point of distinction being that entrepreneurial decisions are those outside the regular routine of a business. Thus, decisions as to day-to-day operations, say in the case of a farm, whether to cultivate the corn on one day or the next, might be considered as managerial, but a major decision, as whether to switch from corn to soybeans, would be in the province of the entrepreneur. In fact, some writers believe that the major function of the entrepreneur is to introduce innovations into the operations of a business, by way of new techniques of operation, new products, or new locations. Another function of the entrepreneur, related to this one, is that of bearing the risk associated with running a business, especially a new business. For present purposes, entrepreneurship can be considered as the function of providing direction of the fundamental policy of a business, with special reference to making innovations and to bearing the risk resulting from making policy decisions.

The return to the entrepreneur is frequently designated as *pure profit*, and it is what the economist has in mind when he speaks of profit along with wages, rent, and interest, as the returns received by the four factors of production. Wages obviously include expenditures for hired workers when workers are hired. But to arrive at pure profit the operator of a business who has invested his own capital in the business and who has paid himself no wages must have been allowed the going rate of payment for personal services of the kind which he has rendered. Likewise, interest obviously must be paid on money which is borrowed. But to arrive at pure profit, not only has interest paid on borrowed money been deducted as an expense, but the owner of the business is assumed to have received the "going rate" of interest on his own investment of "capital."

The businessman thinks of capital in terms of money, and he does not differentiate between land and capital as two distinct factors in production. We shall later discuss more fully the nature of the difference between them. For the present we shall simply state that something is paid for the use of land in the sense of natural resources supplied originally by nature without cost, and that such payment is considered *economic rent*, or merely rent, in discussions of returns to the four factors of production. The going rate of rent must be allowed to the owner for the use of land owned by himself before there can be pure profit. In-

terest also will be more fully discussed later, but here we shall note that interest, as the word is used in the business world, is paid for the most part to secure the use of material goods rather than the money for the temporary possession of which it superficially paid. These material goods include land, and interest as the term is used in business includes a return for the use of land. But when capital and land are considered separate factors of production, and interest is considered the return which goes to capital, payments for the use of land as above defined are excluded. Interest, therefore, as one of the four distributive shares is not exactly the same as interest in ordinary business language. Specifically, it is what is paid for, or assignable to, the use of capital goods—considered as material goods used in production, excluding land as above defined. This is true both when it is paid to the lender of borrowed money and when it accrues to the owner of such capital goods because he makes use of his owned capital, instead of selling it and “lending the money” received for it.

From the above it should be clear that *net profit* as used in business includes interest on the entrepreneur's owned capital and usually also some degree of economic rent as that term has just been explained. In fact, businessmen are in the habit of thinking of their profits in terms of percentage on the investment. *Pure profit*, or merely profit, as the share of the entrepreneur, in contrast, is something going to the owner of the business in excess of (1) the share of all labor, including the going rate of wages for himself; (2) interest, including the normal going rate of interest on his owned “capital”; and (3) economic rent, including a return at the prevailing market rate for his own use in his business of natural resources owned by him.

Nature of Costs. Pure profit has been explained as the excess of selling price above cost, including remuneration for the entrepreneur's own capital, land, and labor. Ultimately all costs may be resolved into the *distributive shares*. Taxes, for example, are finally paid as wages to government employees, as economic rent for natural resources, as interest on government borrowings of money which are contracted in order to obtain the use of tangible capital, etc. Cost necessarily includes a charge for deterioration or depreciation in the tangible capital used in production, but depreciation charges are to reimburse those who provided funds which originally were paid out in costs for items constituting the distributive shares.

Another way of looking at costs is as the amounts of money which must be realized by representative producers if production is to be continued. There are always some producers who have losses. With continued losses any producer will be forced either to cease production or to pay less for those items which constitute his costs. Always, as some

entrepreneurs are forced out of business, others enter or expand their operations. If too many entrepreneurs have losses rather than profits, they will bid less vigorously against each other for the factors of production, and wages, economic rent, or interest will decline.

Profit and Prices. It is probable that total pure profit is more than offset by total business losses. Competition among entrepreneurs for the use of labor, capital, and land results in prices for these factors sufficiently high that pure profits are not easily and certainly attained. The possibility of obtaining pure profits is the lure which tempts entrepreneurs to engage labor and pay rent and interest, rather than to work for wages (or salary) or receive interest and rent. But hopes are far from always realized. Profits in the sense of pure profits are received only by the unusually capable or unusually fortunate businessman. If he selects his enterprise with intelligence, coordinates his labor, land, and the different kinds of equipment in proper proportions, and sees to it that day-to-day operations are carefully supervised, he should be able to get more product from the use of a given amount of cost factors than do his less able competitors. To the degree that the entrepreneur accurately anticipates prices and the volume which can be sold and produces those goods which may be sold at relatively higher prices, he improves his chances of profit. Yet the most carefully laid plans will go amiss, and the low costs of efficient production may be offset by unforeseen variations either in the prices of the goods and services which need to be bought or in the prices or volume of things sold. In this way profits come to be in a large part fortuitous, for the individual entrepreneur cannot arbitrarily control price variations, nor can he always anticipate them.

The entrepreneur, as the guide of production and the source of income of the distributive shares, finds that his profit margin in a considerable part depends on the existence of a margin between two types of prices: cost prices and selling prices. Favorable price changes may bring large profit; opposite price changes may lead to bankruptcy. Under these circumstances the study of prices of all types becomes the central part of the study of the operation of the economic system.

CONTROL OF PRODUCTION

From what force or agency does this economic system receive its guidance and control? No person or board has been empowered to determine how much land, capital, or labor shall be devoted to the production of a particular good. Nor does any such authority determine the quality of goods to be produced, the technology under which they shall be produced, or the prices which shall be paid for the services of the factors of production.

Insofar as production is carried on under private enterprise, without effective governmental or other social controls, the direction of economic activity comes through the operations of the market. If consumers desire more of a good, their increased purchasing leads to higher prices, and profit-seeking entrepreneurs have a choice of expanding production or making abnormal profit by continuing to sell at the high prices they can obtain. On the other hand, if the output is excessive, prices fall below cost and this results in a decrease in output. Entrepreneurs' judgment as to how to maximize profits determines, therefore, not only what goods shall be produced, but also the quality and quantity of the goods made, which in turn determines the demand for, and the prices paid to, the factors of production.

However, recent years have witnessed an increased scope of activity in which social action, either governmental or that of voluntary groups such as labor unions and trade associations, determines, or at least influences, the volume of output. Labor unions, by successfully bargaining for high wages in certain industries and limiting the labor performed to what can be used at these wages, affect the use of the various productive factors. Trade associations decidedly influence output, in many manufacturing industries.

The most important means, however, by which social control is exercised over production and the influence of the profit or market system decreased or modified has been through the extension of government regulation of economic activity. The tendency in this direction, apparent for the past two or three generations, was greatly intensified by the Second World War and its aftermath. The necessity of rebuilding their devastated economies caused most European countries to impose extremely close control over all phases of business activity, if not actually to take over ownership of many industries, as the British have done in the case of the railroads and coal mines.

In Russia, indeed, the more or less automatic operations of the market system have been superseded by complete government controls for the last thirty years. Though the market system operates in the United States with less interference than in any other major industrial nation, the government's policies nevertheless have a major influence on business operations and the processes of production, as will be demonstrated in the paragraphs that follow.

THE GOVERNMENT'S PLACE IN THE ECONOMY

Is the Government Productive? In the days when economists were much concerned with the distinction between productive and non-productive workers, civil servants were almost automatically placed in the latter category. In this more enlightened period, it is recognized that

production means more than purely physical production; that clerical, service, and professional workers are as truly productive as a man who makes, say, flour. There is a lingering belief, however, encouraged by those who in their own selfish interest wish to restrict the activities of the government, that government work is unproductive, that therefore the payment of taxes represents a subtraction from the spending power of the individual for which he receives little or no return. The impression is thus given that money going for taxes is money wasted. A moment's reflection will serve to show that this is a wholly unjustifiable view.

There are a great many government employees who are productive workers by any definition, those, for instance, who work in government-owned hydroelectric plants or government-owned transportation systems like the New York City subways. Then there are less obviously productive workers as firemen or policemen, whose function is in effect to protect the economic activities of others. They are productive because without them no one would be able to carry on production at all, and they are therefore highly necessary. In the same category are workers for a regulatory agency like the Federal Communications Commission, in the absence of which the air would be filled with confusing static. The government thus renders services or provides goods in return for the taxes paid, just as businesses do in return for money paid them.

The allegation that because of political pressure the government's operations are not so necessary or efficient as those of private business may have some foundation, but if government operations are inefficient (and it is questionable if government agencies, considering the size of their operations and the numbers employed, are any less efficient than very large private businesses), this means not that government work is nonproductive, but merely that it is not so productive as it ought to be.

The Place of the Government in the Economy. It is not often realized how important a part the activities of government, Federal and local, play in the total production process, how every aspect of modern economic life is influenced by governmental operations, so that indeed the government is an integral part of our economy.

In this country one way of estimating the importance of the government's role in the economic scene is to recall that the item of government's purchases of goods and services in the summary table of the Gross National Product amounted to \$30 billion, or about 15 per cent of the total, in 1946.

A segment of the economy which generates that much of the gross product is clearly of great importance, but the government's influence is much greater even than can be inferred from the major fraction of the gross product contributed by government purchases. This is so be-

cause: (1) The proportion of the national income that passes through the government's hands is much greater than 15 per cent of the total, being nearer to 25 per cent. (2) The manner in which the government's receipts are collected and paid out affects every part of the economy. (3) The government regulates directly many phases of business activity. (4) The government's own productive activities affect the location, size, and character of many private industries. (5) The government's credit policies also have great influence on business activity.

Government Receipts and Expenditures. While the government's purchases amounted to 30 billion dollars in 1946, its receipts were 50 billion and its expenditures 46 billion. The reason for the 16-billion-dollar discrepancy is that 11 billion dollars of the government's intake was not paid out for the purchase of goods and services, but consisted of unemployment, old-age, or other social-security payments, other pensions, veterans' benefits, and the like. Technically these are known as *transfer payments*, with the government acting merely to shift income from one group in the community, the taxpayers, to another, the recipients.

The other chief item which accounts for the difference between expenditures and purchases is interest, which amounts to about 5 billion dollars. Payment of interest on the government debt also represents a shift of income—in this case from the taxpayers to the bondholders—though it may be more accurate in this case, as also in the case of many social-security payments, to say that it represents the repayment at a later time of money to individuals from whom it was earlier received in the form of income or social-security taxes.

The influence of the government on economic affairs, then, is to be measured rather by the 50 billion dollars that it takes in and the 46 billion it pays out than by the 30 billion dollars spent for the purchase of goods and services.

Manner of Collection. The manner in which the government gets the money it spends is of profound importance. If its expenditures exceed its tax receipts, as was the case in this country from 1930 to 1945, and the difference is made up by borrowing, there is a tendency for the economy to be stimulated, or possibly overstimulated.

In the reverse case, with taxes exceeding government expenditures, there is a tendency for economic activity to be contracted. The greater the surplus or deficit, the greater the effect. Different groups within the economy, however, are variously affected. Thus, if a large part of the government's receipts come from borrowing, there are shifts in prices and incomes which in general affect adversely those classes in the community which have fixed incomes, like government employees and people living on pensions or life insurance.

Likewise the real-income status of different groups in the population can be and is very seriously affected by the methods of taxation. Since people in the low-income groups spend a greater part of their total incomes on articles of immediate consumption than do those enjoying large incomes, a general sales tax tends to fall heavily on people in the low-income groups. If a government used such taxes as its main source of revenue, consumption of food, clothing, and other consumer goods would be inhibited. On the other hand, it is the people with high incomes who do, leaving corporation savings aside, the bulk of the community's saving. Income taxes which take a large percentage of large incomes cut down saving by individuals. The whole pattern, then, of a community's expenditures and saving is greatly influenced by the tax system. For example, a general sales tax would reduce the purchases of men's suits or women's dresses because it would raise their price and thus make it harder for the great bulk of consumers to buy them, while a heavy tax on big incomes would greatly cut down on the sale of yachts. More seriously, such a tax would reduce the demand for machine tools because savings would be reduced, and it is from savings that the resources for investment in capital goods are obtained.

It may be noted here that the government's policy in regard to the method of obtaining and paying out its revenues is known as its *fiscal policy*. Not only do both fiscal policy and methods of taxation greatly influence the level of business activity and consumers' expenditures in general, but taxes can be levied so as to make or break individual industries. The United States government, at present, imposes a tariff, which is merely the technical name for a tax on imports, on wool. Since Australian or Argentine wools can be produced much more cheaply than American, the complete removal of the tariff would cause an increase in low-priced imports, which would take the markets away from native wools and doubtless lead to a great reduction in domestic sheep numbers. Conversely, if the tariff were radically increased to push the price of foreign wools high, imports would be reduced, more American wool would be needed in their place, and the flocks of sheep in this country would be enlarged.

Direct Government Controls. Fiscal and tax policies are only one among the many ways governments affect the conduct of business and the pattern of personal expenditure. The influence of government controls is felt in every aspect of economic activity. The Agricultural Adjustment Act limits the planting of cotton and encourages the use of fertilizer and lime. A Wagner Act strengthens the position of labor unions against that of employers and then a Taft-Hartley law is passed, intended to swing the balance back toward the employers. There are several laws like the Sherman Antitrust Act, the Clayton Act, the Pat-

man-Robinson Act, the Tydings-Miller Act, which regulate the size, organization, and pricing policies of almost every line of business. Nor is the presence of a law on the statute books necessarily a determining factor. Whether and how it is enforced are very significant. For long periods in our history the antitrust laws were treated as dead letters, and business combinations in various guises flourished unchecked. At other times the Department of Justice has put on vigorous drives to enforce these laws, but the direction of enforcement has varied considerably. Thus a generation ago, the emphasis was on the breaking up of very large corporations, and the government succeeded in obtaining court orders for the dissolution of the Standard Oil and American Tobacco companies. Recently the government's activities under the antitrust laws have not been chiefly directed to make little businesses out of big ones, but to inhibit certain practices considered unfair, like collusion among all the companies making building material for the purpose of charging consumers a higher price than would be justified by the actual costs of manufacture.

The regulations we have been discussing are more or less generally applicable. As with taxes, there are in addition any number of laws and regulations affecting particular industries, especially those called *public utilities*, which include the railroads and other forms of public transportation, the communications industries, and the suppliers of power, heat and light. To take two out of a multitude of possible examples, the profitability of the country's railroads depends largely on the rate determinations of the Interstate Commerce Commission. No new radio station can be built, nor can established ones change their wave lengths or alter their power setup without the permission of the Federal Communications Commission.

The Government's Productive Activities. The fourth in the list of ways in which the government influences the operation of the economy is through the nature of its own productive activities. Among the most important of these are its construction and operation of public works. Think of how the face of the Tennessee Valley has been changed in fifteen short years by the Tennessee Valley Authority. Great industrial works, including the enormous Oak Ridge atomic plants, have been built in what was once an exclusively rural area, floods which used to cause loss of life and property and disruption of farming operations have been checked, an entirely new source of income has been created for the region by the recreational facilities provided by the lakes which have grown up behind the dams, and the productive capacity of the farms has been greatly increased through the TVA's provision of cheap fertilizer and the encouragement of erosion-control practices. An almost equally notable transformation in the economic life of the Pacific Northwest

has been wrought by the electric power and irrigation water provided by the Bonneville, Fort Peck, and Grand Coulee dams. The cultivated area of the Central Valley of California will be enlarged and ample water assured by the Central Valley project, based on the Shasta and Friant dams and the canals and irrigation works associated with them. Nor are dams the only form of public works of economic importance. Roads, bridges, airports, and many kinds of buildings, like schools and hospitals, might also be mentioned.

This short catalogue of public works points to one of the most important economic effects of government activity, the effect of how the government spends money. Clearly, if a government builds warships, fortifications, and arsenals, rather than spending an equal amount of money on dams, roads, agricultural conservation, and education, the direction given to business and farming, not to mention less tangible entities like the state of the nation's education and health, will be very different. Likewise, if in a time of depression the government uses relief appropriations to pay out doles it will have one effect on the economic life of the community, whereas the effect will be quite different if the same money is used to dig tunnels or build hospitals and post offices. In the first case the purchasing power of the population is immediately increased and the industries supplying food and clothing feel the primary effect of the government's expenditures. In the second case, the productive capacity of the country is permanently enhanced by the construction of new facilities and the primary effect of the government's expenditure is upon industries supplying building and construction equipment.

The effect of these two different methods of relief is also quite different on the mental attitude and work habits of the recipients.

Credit Policy. Another and quite different method of government control over the general level of business activity, but which is related to fiscal policy, is provided by its credit policy, especially through the operations of what are called *central banks*. These are subjects that will be discussed in greater detail later in the book, but at this point suffice it to say that the lending power of commercial banks, which has great influence on the ability of businesses to expand or maintain their scale of operations, is affected or controlled by central-bank policy.

In this country the Federal Reserve System is the central bank, which, though not owned by the government, has its general policies and objectives set for it by Congress. A central bank does not deal with individuals or private businesses, but only with other banks, and exists, among other things, for the purpose of providing ample credit for the use of the entire business community.

Though it is the most important, the Federal Reserve System is by

no means the only government agency operating in the field of money and banking. Through the Farm Credit Administration and other agricultural credit agencies, mortgage, production, and other types of loans are made available to farmers, and the presence of the government in this field has caused interest rates for farmers to be lower than they would otherwise have been and has made credit available to many farmers who could not have obtained it from other sources.

A large part of the residential construction now under way, especially rental housing, has been undertaken because of the generous terms on loans or the guarantees provided by government agencies.

During the Great Depression, numerous large corporations, especially banks and railroads, were saved from bankruptcy by loans from the Reconstruction Finance Corporation, and that agency is still active in making loans to small businesses that cannot obtain credit elsewhere.

The preceding paragraphs are not intended to be more than the barest outline of the ways in which the government's tax, debt, regulatory, and public-works policy affects and permeates every aspect of the community's economic life. The student can with little effort greatly lengthen the list.

As has been noted, the influence of the government on economic activity has been growing steadily in the course of the last three generations, and was notably extended during the Roosevelt administration. A rough index of the growth of the government's influence in the country's economy is the relation of the Federal government's expenditures to the national income. In 1900 it was about 3 per cent; in 1929 it was about 4.5 per cent; in 1934 it jumped to 13 per cent, and stayed close to that level until 1940, except for 1937, when it fell to about 10 per cent. During the war years it rose to 53 per cent and then fell to 20 per cent in 1946. For 1947 it was about 16 per cent. It is entirely likely that this proportion will tend to increase rather than diminish.

Nonmonetary Basis of Government Policy. It is rather paradoxical that while the government's activities have that great influence on economic life which we have pointed out, the government's motivations may be, by certain standards, defined as noneconomic. The most obvious case is that of provision for national defense. Here we have a vast expenditure, which has a profound effect on a country's fiscal status and policy, as well as on its industrial organization, but which is not governed by economic considerations except in the very broad sense that a country's economic organization cannot be maintained if that country cannot defend itself. Defense activities are noneconomic in that the money expended will not be returned, since it does not go into any sort of (economically) productive use.

Another range of government activity which is uneconomic in the

same sense is expenditure for culture, recreation, or perhaps even education. A nationally or municipally supported art museum will not add anything to the money income of a community, nor may a playground, zoo, or park. This is very far from saying that these things are not worth having. It is merely to say that a state is not necessarily guided by purely economic motives, by expectations of strictly economic gains. Nor, indeed, are individuals. But states can, better than the great majority of individuals, afford to provide types of satisfactions and services which are not remunerative in purely monetary terms.

Aside from the matter of undertaking activities that are very worth while, though not on a dollar-and-cents basis, the state, in even more strictly economic matters, takes both a wider and a longer view than a private citizen, or a private corporation. Thus, if every parent had to pay for the education of his children, many would not, either because of lack of resources or because from their own selfish point of view they would not derive commensurate gain from the expenditure. The state, however, can afford to educate all its youth, partly for economic reasons, because an intelligent and educated citizenry is more productive than an ignorant, untrained one, and also, of course, out of the belief that educated people make better citizens and that it is the right of every citizen to have a certain degree of education. In even more strictly economic terms than those applicable to education, the state can afford to build a road, or a dam, the return from which in terms of enhanced productivity may be spread over so many persons or be received so far in the future that no individual could be interested in investing in it. Likewise, an individual farmer may not find it worth his while to carry out certain kinds of conservation practices, because the expenditure will not be repaid in his lifetime. The state, however, desirous of preserving the fertility of its land over the centuries, may well consider it advisable to pay for such practices.

All this suggests that the interest of the community may differ at times from that of the particular individuals composing it and that there may be even direct conflict between the interest of some individual or business firm—say a paper company whose waste pollutes a stream, which is compelled by law to spend money for a waste-disposal plant—and the government, which expresses the will of the community.

Questions and Problems

1. Distinguish between a cooperative and a private corporation.
2. Compare the three forms of entrepreneur organization given here as to (a) adaptability to large-scale production; (b) liability of owners; (c) permanence of organization; (d) management.
3. What are recent tendencies in corporate organization and management?
4. Define stocks and bonds and distinguish accurately several kinds of each.

5. Compare or contrast at least four different accounting and economic uses of the word *profit*. What are some factors determining pure profit?
6. Explain how lack of *profits* may reduce wages and interest.
7. From Moody's *Manual*, or some other source, reproduce in condensed form the balance sheet and profit and loss statements of two large corporations engaged in the same business. Compare the corporations in the following respects: (a) percentage of assets represented by funded debt; (b) percentage of assets represented by net worth; (c) book value of capital stock; (d) annual net earnings per share of stock; (e) annual net earnings as a percentage of net worth. Of which stock should the market value be the greater, and why? Give descriptions of two bond issues listed in Moody's *Manual* or elsewhere and state which you consider the safer investment and why.
8. Draw up an income statement for a farm with which you are familiar.
9. List types of government economic activity which you know about from your own experience.

Suggested Readings

1. E. H. Spengler and Jacob Klein, *Introduction to Business* (1939), provides a survey of promotional and marketing problems of business as well as the organization, management, and financing of a business concern.
2. R. N. Owen, *Business Organization and Combination* (1938), contains a more complete presentation of business organization.
3. A. S. Dewing, *Financial Policy of Corporations* (1941), is a standard work on corporate organization.
4. A. A. Berle, Jr., and G. C. Means, *The Modern Corporation and Private Property* (1932), is an interesting study of the corporation and its economic and social significance. The general theme of this book is contained in Book 1, Chap. 1.
5. Barbara Wootton, *Plan or No Plan* (1935), Chap. 1, contains a lucid and complete statement of the functioning of the price system in controlling production.
6. P. M. O'Leary and J. H. Patterson. *An Introduction to Money, Banking and Corporations* (1937), Chaps. VII-XII, gives a good elementary review of the economics of the corporation.
7. P. F. Drucker, *Concept of the Corporation* (1946), is a description of one large corporation, General Motors.

CHAPTER 7

FARM ORGANIZATION

Consideration of the organization and administration of the operations of an individual farm constitutes the central part of the subject matter of farm management. That is a special subject for study, and no attempt will be made to treat it comprehensively in this book, in which we are concerned with the relations of farmers to other parts of our economic system. Nevertheless, a few aspects of farm management, or more specifically farm organization, will be briefly considered in this chapter.

Chinese Farm Economy. Our appreciation of methods and principles of farm organization in this country may be increased by a sketch of conditions in a country as different and far removed from us as China. In a book by J. L. Buck, entitled *Chinese Farm Economy*,¹ there are presented the results of a study of 2,866 Chinese farms, utilizing in the aggregate 21,000 acres and supporting directly 17,000 persons. The following is a brief summarization of that study by F. A. Pearson. All money values therein stated are in Mexican dollars, which are one of the several kinds of money in use in China and which at the time to which the data refer (about 1929 and the immediately preceding years) had a value of about half that of American dollars. To make a rough comparison with American conditions, therefore, the reader should divide all money values by two.

Today Chinese agriculture is a system of unfenced, widely-scattered plots of land, which corresponds to the archaic strip system of Europe. The usual farm has 8.5 non-contiguous plots each less than an acre in size and the farthest average nearly two miles from the farmstead.

The average farm capital is \$1,769 (Mexican dollars), three-fourths of which is invested in land. The mortgaged land makes up only 1.2 per cent of the capital. Trees are bought and sold separately from the land, and on the average are worth \$38 per farm.

Livestock plays an unimportant role in Chinese agriculture, representing only 3.7 per cent of the capital; and livestock and its products represent only 8.1 per cent of the annual income. The average farm has 0.5 oxen, 0.4 donkeys, 0.1 mules, 6.5 chickens, 2.3 sheep, 0.2 goats, 0.9 hogs. Labor animals are much

¹ Published by the University of Chicago Press, 1930.

more important than productive animals. Three-fourths of the farmer's cash receipts, \$322 per year, are derived from the sale of crops.

After deducting expenses, Buck finds that the returns to the family for its labor are \$181 per farm [about \$90 American money, with an average of about six persons per family, which includes quite commonly relatives other than parents and children]. Only 39 of the 2,866 farm families had returns of more than \$350. These returns are closely associated with size of farm, crop yields, efficiency of labor, soils, and the like.

China is no exception to the rest of the world. They have the tenancy problem. In North China, three-fourths of the farmers own the land they operate; and in East Central China, less than one-half. The most important method of paying rent is in the form of a definite amount of grain, the "half and half" system being most common. The percentage of the total receipts that go to the landlord varies from 25 to 67 per cent. Landlords' returns on capital vary from 2.6 to 17.8 per cent. Interest rates on loans are rarely less than 20 to 30 per cent. This study indicates the importance of the problem of "fair rent payments," which is now receiving the attention of the national government in China.

On account of the small amount of livestock, hay and pasture play an unimportant role in Chinese agriculture. The crops are primarily grain, fibre, and leaf products, for direct human utilization. The by-products, straw, stalks, and fodder, are used for farm and city fuel, building, and work animals. Since relatively little of these by-products is plowed under or returned to the soil in the form of animal manure, the human feces and urine are carefully conserved. Because of the long growing season, double cropping, which is comparatively unknown in the United States, is widespread. About one-half of the total crop area is double cropped.

The student of prices will be interested in the wide variations in the prices of the same commodity for the same year in different communities and the wide variations in prices of the same commodity in the same community for different years. These differences are due largely to lack of transportation. There is a surprising similarity in price relationships in eastern China and in the United States. In China, the price of wheat is 1.45 times the price of corn (maize), and in the United States, 1.49.

Water, wind, or mechanical power are used only in irrigated areas. The muscles of man and beast are the sole source of farm power. In China, 663 hours of human labor are required to produce a hectare of corn, as compared with 47 in the United States; wheat 600 and 26; and cotton 1,620 and 289 man-hours, respectively. In China, human labor is cheap and animal labor is expensive. . . .

The standard of living must of necessity be low because of the meager income. Every time the Chinese farm family spends \$1, the American farm family spends \$17. Few farmers can read and three-fourths of the farmers' children have never attended school. Fuel represents 12.3 per cent of the value of goods consumed, compared with 5 per cent in the United States. The cause is clear; "what is put under the kettle is worth more than what is put inside."²

² Review by F. A. Pearson, *American Economic Review*, June, 1932, p. 295.

The reader will be left to draw his own conclusions as to what features of difference in the organization of economic life in this country and in China have been most important in giving to us a higher standard of living than prevails in China, and also to what extent the Malthusian principle of population explains the conditions of economic life in China. For the remainder of this chapter we shall consider a few aspects of farm organization in relation to farm efficiency which are of importance in understanding cost of production and differences in costs among producers. The aspects of farm organization to be most especially considered are: (1) the farmer's selection of the grades of the factors of production; (2) the planning of the farm to make the best use of labor and equipment; (3) the adjustment of farm enterprises in order to meet changes in prices of the different farm commodities.

SELECTION OF THE GRADES OF FACTORS OF PRODUCTION

In attempting to arrive at the lowest cost per unit and the highest profit combination of the factors of production, the farmer is confronted with the fact that different areas of land, different kinds of machinery, different dairy cows, and different workmen are quite different in their ability to produce. This raises the question, should the farmer hire the best labor, obtain the best land, and secure the highest producing cows, or will he find the second-grade units of these factors of production more profitable? The effort to answer that question, as well as an understanding of other aspects of highest profit combinations, will be promoted by a discussion of the concepts of *capacity* and *efficiency* (often referred to as the two dimensions of productivity) and the relation of these to net returns.

Capacity. In current speech, *capacity* is said to be the maximum output possible, as, for example, the capacity of a fruit cannery is 2,000 cases a day, or the capacity of an elevator is 500,000 bushels. As used technically by economists, the word *capacity* has a somewhat different meaning. It refers not to output but to input, or the reception by one factor of other factors of production. In purely physical terms a tractor which can, with a plow of a given size, cover in one hour twice as much acreage as another has twice the capacity. Likewise a dairy hand who can successfully handle ten cows has that much more capacity than one who can only adequately handle five cows. Physical conditions and capabilities, however, are not the sole determinants of economic capacity. In the business world and the world of economic theory as well, the profitability of combining other factors with the given factor, which is of course related to its physical structure, is the ultimate determinant.

The more of other factors of production which may be profitably combined with a given factor, the greater the economic capacity of the given factor. Fertile, well-watered land near a city has great capacity, because a large amount of labor and considerable capital may be profitably spent on that land in raising truck crops, producing fluid milk, and the like. Less fertile soil in the same locality will have lower capacity, though perhaps higher than somewhat richer soil at a great distance from markets, for the latter, being limited in profitable use to crops which can be shipped great distances, may not be profitably combined with as much labor and capital.

Let us consider the other factors. A strong, mentally alert laborer can be successfully ~~used~~ with more acres of land or more equipment than a man with opposite characteristics. As an example of the capacity of livestock and equipment, we find that some cows can profitably be fed more feed than others. Some types of machinery, such as combined harvesters, can under certain circumstances be economically used with more land than other harvesting machinery. Farmer entrepreneurs of keen foresight, progressive methods, and ability as day-to-day managers can successfully manage more land, labor, and capital than less effective competitors. In other words, the economical size of the producing unit is affected by the capacity of the entrepreneurs.

In the words of Dr. C. L. Holmes:

The capacity of any productive factor such as labor, land, equipment, or management, may be defined as the relative amount of the other factors which, under a given set of economical and technical conditions, can be combined with it in productive processes to result in maximum profit to the proprietor.³

In other words, capacity is measured at the point of the highest profit combination. And since this point shifts as the costs of the factors or the prices received for the product change, the capacity of any factor cannot be stated as an absolute, but as Dr. Holmes puts it, in terms of "a given set of economical and technical conditions." A given set of economical conditions refers to a given set of prices for cost factors and for the resulting product. Obviously, if wages rise when there is no corresponding rise in the price of the product, it will not be profitable to use as much labor as formerly on a given piece of land. This represents a change in the capacity of the land for labor, due to a change in the economical conditions. Conversely, if the price of the product rose so that the value of the output increased, it would be profitable to

³ *Economics of Farm Organization and Management* (D. C. Heath & Co., 1928), p. 227.

use more labor on the same land (wages constant), which again is a change in capacity with the new "economical conditions."

The "given set of technical conditions" refers to the methods of production and condition of weather, soil, and so on. In the growing of corn, the amount of cultivation which will be the most profitable varies with the type of soil and amount of rainfall. The introduction of a labor-saving machine may reduce the amount of labor but increase the amount of capital which may be profitably combined with the land. This would represent a change in the capacity of the land due to a change in "technical conditions."

Applications of the Concept of Capacity. The efficient farmer will use each acre, laborer, and piece of equipment as nearly as possible to its maximum capacity. It is not easy to determine objectively what is this maximum capacity. To illustrate, the amount of cultivation which should be applied to a given crop to yield the maximum profit to the proprietor will vary according to weather conditions, the costs of the labor, and other factors which are to be applied, and, also, according to the price of the product. Furthermore, not only the amount of cultivation but the timeliness with which it is applied is of high importance. Some farmers get twice as much result from the same amount of cultivation as others, because they do it at exactly the right time. Nevertheless, he who does succeed in using each factor of production—in other words, each element of cost—most nearly to its capacity will be most likely to have profits at the end of the year.

The efficient farmer will not have any avoidable *idle overhead*, by which is meant outlay for land, labor, equipment, or materials not being used to full capacity, for its presence indicates that the maximum profits are not being made. To put a good-sized combined harvester on a 100-acre wheat enterprise means that this large investment in equipment will not be used sufficiently unless the farmer does custom work. To farm land that is very high priced on account of its desirability for urban uses means that the interest on its value cannot ordinarily be earned in agricultural uses. To have a truck on a farm that has relatively little hauling to do may be less profitable than to hire trucking services. Wherever there is *idle overhead* or *unused capacity* there is opportunity to profit by using the investment more fully by applying more of other factors to the one in which the unused capacity is present. Unused capacity always involves expenses for interest and taxes, and usually also for repairs, depreciation, and obsolescence. In planning ahead, the purpose should be to provide such a balance in the productive organization that there will be no unnecessary idle overhead.

Economic Efficiency. Capacity measures the ability of a given factor

to combine with a quantity of other factors at the highest profit point. The greater the quantity of the other factors, the greater the capacity. It will be remembered, however, that capacity is only one of the two dimensions of productivity. To say that a plot of land is very long is not to say anything about its total area. Though a cow may be more profitable if fed a large quantity of nutrients than if she gets a smaller quantity, indicating a high capacity, yet her output of milk per unit of nutrients consumed may not be high. Another cow may require less feed to arrive at her highest profit point and may produce much more milk per unit of feed. The ability of the second cow to turn feed into

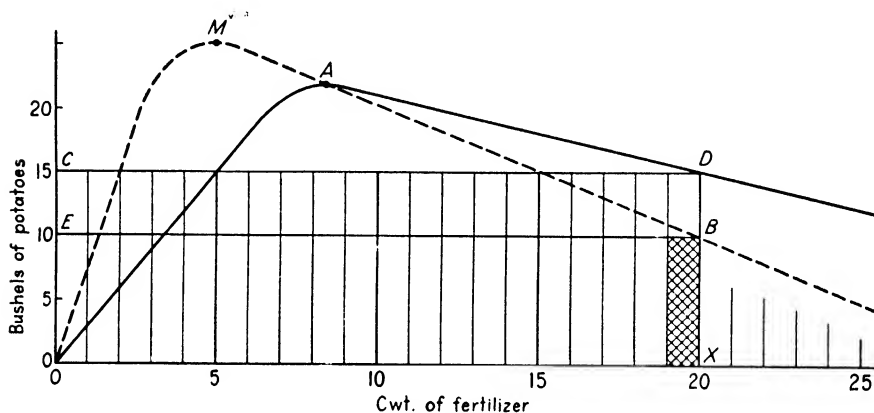


FIG. 8. The two dimensions of an acre of Aroostook potato land using fertilizer in producing potatoes. (From Black, et al., "Farm Management," p. 408, chart 61. Copyright 1947 by the Macmillan Company and used with their permission.)

milk is greater; she is more efficient. Efficiency is the test of the effectiveness of a given factor in using other factors. As such it has a meaning quite similar to that of everyday speech but it may be more precisely defined as follows: Efficiency is the ratio of value of output to value of input, or cost, when the productive factor whose efficiency we are studying is being used to capacity. These concepts may be made clearer by study of Fig. 8.

Curve A gives the average yield of potatoes per unit of fertilizer as fertilizer is added to the acre; curve M shows the additional (marginal) product for each hundredweight of fertilizer. At the highest profit combination, this land will take 20 hundredweight of fertilizer, so that is its capacity for fertilizer. The last application of fertilizer increased the output of potatoes by 10 bushels, as measured by line M. "Since all the units of fertilizer are exactly the same material, [and] all contribute exactly the same to the product at this point," we can perhaps appropri-

ately speak of the net efficiency of fertilizer under these conditions as being 10 bushels of potatoes per hundredweight. The net product of the fertilizer application measured by rectangle *OEBX* may be counted as 200 bushels, the remaining 100 bushels being considered the product of the land and other productive factors. On some other acre of potato land, the rectangle *OEBX* might be shorter but higher, indicating less capacity for fertilizer but higher efficiency in making use of it. The total area of the rectangle would indicate whether that land in combination with fertilizer was more or less productive than the Aroostook area.

Efficiency, Capacity, and Net Returns. From the above it should be clear that neither capacity nor efficiency alone determines net profit, but that this depends on a combination of the two. That is only another way of saying that business profits depend as much on the volume of the business as on the profit per unit of business done.⁴ A small net profit from each dollar of sales on a large volume of sales may be more profitable than a large profit per unit on a small volume of sales. But both the volume and the profit per unit are important.

What Grades of the Factors Should Be Used. Dr. H. C. Taylor⁵ contends that high-grade units (efficient) of any factor should be combined with high-grade units of the other factors for maximum profits. A studied statement of this principle, with some qualifications, has been made by Dr. L. C. Gray as follows:

Let us consider this problem concretely. In the first place we may ask whether we should use good seed with good land or poor seed with poor land. It is true, of course, that to use poor seed with high-quality land and labor does result in greater loss than to use it with poor-quality land and labor. However, there is no particular reason for employing poor seed at all, for it is not generally cheaper than good seed, and it is principally a question of knowing how to determine the quality.

Should good managers be used on good land and poor managers on poor land? In the long run it is probable that the values of land and labor will be so adjusted that good managers can afford to pay more for good land than poor managers could pay and still make larger profits than they could make on poor land. However, it is entirely possible that what makes land poor is lack of some element that would be supplied by proper management, and the good manager, knowing how to overcome the difficulty and being able to get the land relatively cheap because the inefficient managers do not know how to make it productive, can sometimes make a larger profit on the poor land than on the more valuable land. Similarly, a good manager may sometimes be able to employ low-grade labor

⁴ For further discussion of capacity, efficiency, and productivity, and their relation to net returns, the reader is referred to H. C. Taylor, *Agricultural Economics*, Black and Black, *Production Economics*, and Black, *et al.*, *Farm Management*.

⁵ *Outlines of Agricultural Economics* (Macmillan, 1928), Chap. XI.

more effectively than poor managers can and, if the low-grade labor is comparatively cheap, may be able to make larger profits than they could by employing the more efficient but higher priced labor.

When one has a high quality of live stock, it is probable that it is usually economical to employ a higher quality of labor than one could afford to employ for poor quality live stock. Generally it pays to put good improvements on good land rather than on poor land. In all cases, however, values of the high-grade and low-grade factors have to be considered. If the low-grade factor is valued relatively cheaper to its quality than the high-grade factor, it may frequently pay to employ it in association with other factors of high quality.

It must be recognized also that there is a certain degree of interchangeability between quality and quantity of factors employed. Not infrequently quality is a substitute for quantity. This is especially the case where quality takes the form of a larger amount of accomplishment. For instance, a laborer who can plow two acres a day is much more than equivalent to two men each of whom can plow one acre a day; for not only will he accomplish the same result as the two men, but he will accomplish it with one team and plow rather than two. Sometimes the high quality of one factor economizes the quantity required of another factor. For instance, a good machine is less likely to break than poor machinery and therefore will require less labor for repairs and for delays incident to breakdowns than is necessary in the case of machinery of poor quality.⁹

The grades of the factors which a farmer should employ depend usually on the prices which he will have to pay for them. Good cows are under almost all conditions so much more profitable than poor cows that it rarely pays to keep a poor cow. Nevertheless, the best cow may cost so much more than one not quite so good that the second best may be the most profitable at the prices prevailing. The same principle applies to land, machinery, and all the other factors of production. As has already been emphasized in our discussion of the highest profit combination under the law of proportions, it is not an easy matter to decide in any particular case which is absolutely the best, in the sense of most profitable. Nevertheless, some farmers will come close to it and for that reason make profits, whereas others will go far astray and for that reason have losses.

THE SIZE OF THE FARM OR FARM BUSINESS

Methods of Measuring Size. The most widely used basis of indicating the size of a farm is the number of acres. Sometimes the reference is to the number of acres owned by one person in a plot, but more generally the reference is to the number of acres actively supervised by

⁹ L. C. Gray, *Introduction to Agricultural Economics* (Macmillan, 1924), pp. 156-159.

one man and operated as a coordinated unit, whether land be owned or leased.

Yet the acreage basis of indicating the size of farms may be very misleading as to the capital investment, number of laborers, and value of product, particularly when comparing intensive and extensive farming. A 20-acre orange orchard in southern California valued at \$3,000 per acre represents an investment in land and improvements totaling \$60,000, which is equal to 1,200 acres of wheat land valued at \$50 per acre. Similarly, a grape vineyard may yield a per acre product selling for \$400 to \$600, whereas a wheat farm with average yields of 30 bushels per acre selling at \$2 brings \$60 per acre gross receipts. Again, intensive agriculture, such as that involved in fruit and vegetable production, generally requires the employment of many times the amount of labor per acre used on grain farming.

TABLE 18. AREA IN FARMS AND AVERAGE SIZE OF FARMS IN THE UNITED STATES
1900 TO 1945
(In Acres)

Census year	Farmed area	Average size of farms	Improved land	Improved land per farm	Cropped area	Cropped land per farm
1900	838,591,774	146.2	414,498,487	72.2		
1910	878,798,325	138.1	478,451,750	75.2		
1920	955,883,715	148.2	503,073,007	78.6		
1925	924,319,352	145.1	.....	....	291,459,902	61.4
1930	986,771,016	156.9	.....	....	413,235,890	65.7
1935	1,054,515,111	154.8	.....	....	415,335,000	61.0
1940	1,060,852,374	174.0	.....	....	398,751,103	65.4
1945	1,141,515,364	194.8	.....	....	403,245,042	68.8

SOURCE: United States Census for the various years.

The acreage basis is itself misleading as to area, first because the proportion of the land cropped varies from farm to farm. Second, the Census usage of the word *farm* does not always correspond with what is ordinarily thought of as a farm. With these limitations in mind the reader is referred to the Census data on farm area and size of the average farm presented in Table 18.

Factors Affecting the Size of Farms. In setting up the original farms in this country, the land policy of the government was a potent factor influencing the area brought into one unit. Throughout the region settled after the Homestead Law of 1862, the provision in that law for homesteading 160-acre tracts materially influenced the size of the unit

upon which farm buildings were built and which was organized into an independent producing unit.

Such original influences as the government's land policy will not be permanent if a different size of farm proves to be more economical. When one compares the size of farms in different parts of the country, he will immediately notice the tendency for the size to vary with the type of production, in general being larger where extensive agriculture is practiced and smaller in the dairy, fruit, and truck-gardening regions. This may be illustrated in the state of Washington by three counties, Whitman, Franklin, and Whatcom. Whitman County is in the region best adapted to wheat production. The land is very fertile, though rolling, and has a moderate amount of rainfall. The average size of farms in 1945 was 610 acres, having increased since 1925 from 413 acres. Franklin County is in a region where the soil is lighter and more level, and there is less rainfall. Whereas about 85 per cent of cropland is in wheat in Whitman County, over 95 per cent of cropland is in wheat in Franklin County. In Franklin County the average size of the farm in 1945 was 1,849 acres, as compared with 1,120 acres in 1925. Whatcom County is in a region devoted almost entirely to dairying and the production of eggs and poultry and small fruit. In this county the average farm in 1945 contained 42 acres, and this represented a decrease from an average size in 1925 of 47.8. The average Whitman County farmer had invested in 1945 in land and buildings \$48,280, which was an average of \$79 per acre; the average Franklin County farmer \$33,429, which was an average of about \$18 per acre; and the average Whatcom County farmer \$7,227, which was an average of \$170 per acre.

Farming in general has not yet shown itself to be adapted to large-scale operation in the sense of being conducted in large operating units employing a great number of hired workers. There are some successful farms thus conducted, but they are rare, and most of the efforts at farming in that manner have thus far proved failures. At least one contributing factor to this is that agricultural work cannot be easily standardized and supervised. The variations in weather as affecting soil, crops, and livestock call for the constant attention of the farmer to adapt his plans for cultivation, feeding, etc., to new conditions. The fact that laborers are not in one building but scattered over the farm increases the problem of supervision. Successful farming usually involves the doing of many little odd jobs and tasks not in a regular schedule, which an operator is more likely to look after than hired laborers. The person with unusual ability to organize and direct the labor of hired employees has in general had a better opportunity to make profits in other kinds of business undertakings. In general, the successful farm has tended

to conform to a family-sized farm, employing perhaps one or a few hired laborers. Conditions which have changed the size in acres of such a family farm have been mostly changes in the technique of farming, especially in the use of machinery. The replacement of horses and mules by tractors was an important cause of the increase in the size of the average farm in Whitman and Franklin counties, Washington, between 1925 and 1945.

The Size of the Individual Farm. From the point of view of the business success of the individual entrepreneur, what is the best sized farm? To this no answer which applies universally can be given in terms either of acres, or of capital invested, or workers employed. This much, however, can be said, that studies of costs and profits of farming show that in general the most profitable farms have been of more than average size for the type of farming which they represent. Not all large farms succeed, nor all small farms fail, but in any given type of farming the proportion of successes to failures is always greater on the larger farms. Some persons are disposed to become poetical about "a little farm well tilled." But G. F. Warren, one of the founders of the science of farm management, has well said that "there is less poetry but a better living in a large farm well managed."

The causes of the greater success of the farm of more than average size are well illustrated in the results of an economic study of irrigated farming in Twin Falls County, Idaho. The sizes of the farms most frequently operated were 40 and 80 acres. The study covered four years, and the net returns on the invested capital after allowing wages to the operator for his labor were considerably more than twice as great for the 80-acre farms as for the 40-acre farms in every year. For one year, after allowing the operators \$712 for their labor on the 40-acre farms and \$861 on the 80-acre farms, there remained as a return to capital an average of \$1,253, or 5.8 per cent, on the investment for the 80-acre farms and only \$296, or 2.4 per cent, on the investment for the 40-acre farms. The value of the output per acre was greater each year on the 40-acre farms, their output having a value of \$54 per acre against \$48 per acre for the 80-acre farms. But expenses per unit of output were greater also for the 40-acre farms. This is well illustrated merely by the number of horses per farm and the crop acres handled per work horse and per month of man labor. The 40-acre farms averaged 4 horses per farm and the 80-acre farms 4.4 horses per farm. On the 40-acre farms 10 crop acres were handled per work horse, and on the 80-acre farms 16 crop acres. On the 40-acre farms 2.6 crop acres were handled per month of man labor, and on the 80-acre farms 4.2 crop acres.

The difficulty of getting the nearest possible to *capacity* utilization of

horse power on a very small farm, as above shown, is equally present in the case of machinery. The operator of a very small farm is likely either to be so lacking in the proper kind of equipment that his labor costs per unit of product are too high, or his equipment will lack so much of being used to capacity that expenses for interest, taxes, and depreciation on equipment become excessive per unit of product.

The greater cost of labor for the results secured on the very small farm should be further emphasized. In a survey of 578 farms in Livingston County, N. Y., it was found that small farms of 30 acres or less in size were able to farm only 4.4 acres with every \$100 spent for labor, whereas with every \$100 spent for labor on farms of over 200 acres 21.8 acres were farmed. Although part of this difference was due to different kinds of farming, part of it was due to more effective use of labor on the larger farms. Every farmer knows that there are many jobs around a farm which can be performed to better advantage by using at least two men. The farm which, because of its size, keeps two or more men busy the year round capitalizes on these short cuts in labor and thus gains an advantage over the man laboring alone. Small farms generally mean small fields, which are always extravagant in the use of labor. In plowing, more time is wasted in turning. The direct saving in human labor in such matters is important, as well as the fact that one man can often keep all the horse power or tractor power employed while the other does the odd jobs, thus holding down the overhead.

Among the most important factors affecting the size of an individual farm are the following:

1. *Type of Farming.* Grain production calls for larger farms from the point of view of either acres or total investment than does commercial poultry production.

2. *The Financial Resources of the Operator.* Many a young farmer starts with a farm smaller than he knows to be of the most economic size for the reason that he has not the financial means to secure and operate a larger farm, and he expects by industry and frugal living to acquire the means and secure a larger farm in the future.

3. *Managerial Ability and Mental Attitude of the Operator.* Some farmers have greater capacity to organize and direct operations involving relatively large expenditures for land, equipment, or labor than have others. Those especially so gifted tend to operate larger farms than those who are less effective in such managerial ability, including the direction of the work of others.

Small farms are often the result of persons looking upon farming as a way of living, rather than as a business, and preferring to take a small return for their labor and the use of their capital and be their own em-

ployers rather than to work under the direction of someone else, even for a greater financial return.

THE COORDINATION OF FARM ENTERPRISES

A question in connection with farm management which is much debated is that of specialized *vs.* diversified farming. Specialized farming may be defined as a system of farming devoted entirely, or almost entirely, to the production of one crop or type of product. Diversified farming may be defined as a system devoted to the production of a wide variety of products. The difference between specialized and diversified farming is, of course, all a matter of degree. One-crop farming has been especially criticized. Its principal weaknesses have been pointed out as follows: (1) In the case of crop production it tends to exhaust soil fertility more than does diversified farming. (2) It increases the risks assumed by the farmer, both because one crop is more likely to fail than all of a wide variety of crops, or types of production, and because prices for one product are more likely to be unusually low than prices for all of a variety of products. (3) It is uneconomic in the use of labor and equipment. In considering the degree of validity of such charges, especially the third, we shall first define a few terms.

Farm Enterprise. This term is used in the language of farm management to refer not to the farm or the farm business as a whole but to a particular kind of production carried on. Thus, dairying and apple production on the same farm would be two distinct farm enterprises.

Competitive and Supplementary Enterprises. Farm enterprises which demand the use of productive factors at the same time are *competitive*. Enterprises which make demands for labor and equipment at such times as not seriously to conflict are called *supplementary*. The nature of competitive and supplementary enterprises is well illustrated in Fig. 9, which shows the time distribution of man labor in the growing of 10 acres each of six different crops, according to actual records on six farms in Clinton County, Ill.

In the spring of the year the first crop demanding attention is oats, for which the ground is prepared and the crop seeded in early April, or as early in the spring as the ground may be worked. The next crop to demand attention is corn. There is a certain amount of competition between oats and corn, because the seeding of oats is not fully completed before the plowing and preparation of the land for corn begin. The competition of the two crops for time, however, is not very serious. While the cultivation of the corn still makes great demands for time, however, the harvesting of alfalfa and clover hay demands attention.

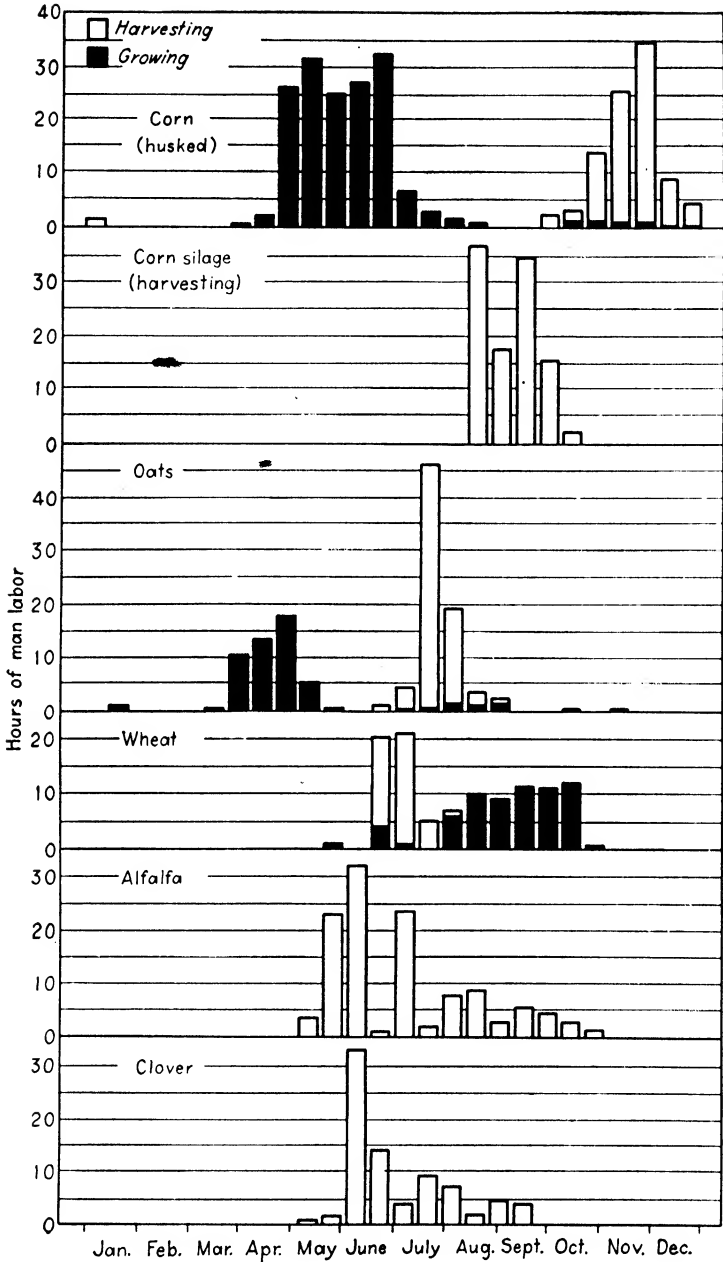


FIG. 9. Distribution of man labor in growing and harvesting 10 acres of six different crops. (Illinois Agricultural Experimental Station Bulletin 374, p. 442.)

These make truly competitive demands. There is also some competition between the cultivation of corn and the harvesting of wheat. The harvesting of oats, however, does not conflict appreciably with any of the five other crops. Oats, in the demand both for planting and for harvesting, may be regarded as supplementary to all the other crops. Corn harvesting for silage conflicts with preparing the land for wheat, but corn may be regarded as supplementary to oats, alfalfa, and clover. Corn husking conflicts with no other labor on crops. In general, the crops shown in the illustration are not seriously competitive except during the period of hay harvest. They are for the most part supplementary.

Livestock also may be supplementary to crops. The winter feeding of cattle in the Corn Belt is a good example of such an enterprise. Dairy cows, on the other hand, are competitive with crop production during the busy months, in spite of the fact that they do not demand so much attention during that time as during the winter months.

Complementary Enterprises. Enterprises such that one definitely makes a contribution to the other are *complementary*. Feed crops and livestock are mutually complementary. The crops furnish feed to the livestock, and the livestock furnishes fertility to the crops. Legume crops, such as clover and alfalfa, are complementary to most other crops in that they build up the soil. Other crops in turn may be complementary to them in that they may furnish a nurse crop to these in their early stages of growth.

A system of complementary enterprises used with profit in the Palouse region of eastern Washington and northern Idaho involves spring wheat, sweet clover and sheep, and winter wheat, used in a three-year rotation. In the first year clover is seeded with spring wheat. The clover is used as a pasture for sheep, occupying the second year, but is plowed up and the land seeded to winter wheat, the third-year crop, which then again is followed by spring wheat, with sweet clover. The sweet clover and sheep enterprises are complementary to each other, and they jointly are complementary to wheat for the reason that the clover is introduced into the rotation largely in order to restore and maintain the fertility of the soil.

Balanced Farming. The expression *diversified farming* is an unfortunate one. It is intended to be applied to a combination of farm enterprises, which, if the enterprises are properly selected, represents highly desirable farming practice. But it has come to be often used in a manner such as to convey the impression that there is merit in diversification of farming operations and activities of any sort, which is not good farming practice. A much more fitting expression for the desirable

farming practice, though perhaps one lacking in popular appeal, would be *balanced farming*.

Such a combination of supplementary and complementary farm enterprises as will reduce to a minimum unemployed labor, land, and equipment, and will maintain soil fertility, is highly desirable. In some sections of the country successful farming is hardly possible unless a considerable variety of enterprises is operated. Peculiar soil, climatic, or market conditions adapt other areas to more specialized farming. Though in the great majority of all cases some improvement in the balancing of farming enterprises is possible, it is also true that there are cases where too much diversification which is mere diversification is being practiced. The farmer who has a few ducks, a few geese, a few guineas, and a few turkeys, a few Plymouth Rock chickens and a few white Leghorns, and "swaps" eggs with a neighbor who has some other breed, while also he has a few goats and a few sheep and a few hound dogs, may be practicing diversified farming, but it is not likely to be very profitable diversified farming.

Especially with specialized orchard crops and livestock, the highest degree of success demands an amount of technical information about spraying, pruning, feeding, and the like which is not likely to be attained without some degree of specialization. Furthermore, a certain amount of community specialization is desirable. A community in which dairying is important will prosper most, and the individual farmers will prosper most, if instead of each farmer keeping a different breed of dairy cattle, the farmers will determine which breed is best adapted to their conditions, and then all as far as possible will keep that breed. This is true for three reasons:

1. A higher degree of skill in producing and handling the product is developed, because more people are working on the same problem and more valuable points of skill and knowledge are acquired and passed on from the first discoverer to others.

2. There is greater economy in production. An individual living in a community where all have the same breed of cattle can secure the use of a high-grade sire more cheaply than where he alone has a particular breed. Where all produce market milk or cream, the hauling costs and other expenses can be reduced.

3. Better prices are secured for products of equal quality, because it is possible to have a large volume of uniformly standardized products, which attracts buyers, both middlemen and consumers, and holds marketing costs to a minimum.

A greater degree of diversification is justified for that part of the production which is for home consumption than for the part which is being

produced for sale. Many a highly specialized farm does not have a family garden when such a garden would be highly profitable. Many a farm which could economically produce its own supply of milk and pork or a part thereof does not do so. Production of as large a part of the feed supply to be fed on the farm as possible is a practice which should generally be encouraged. But when it comes to the production of crops or livestock products for sale, a different problem is presented. Too much diversification both increases production costs and makes more difficult and costly the matter of marketing.

The practice which appears to offer greatest possibilities for profit under most circumstances is for each farmer to select one or a limited number of enterprises as the central feature or features of his farming system and then select his other activities as supplementary and complementary to such leading enterprises, rather than to practice diversification for the sake of diversification.

PRICE OUTLOOK, BUDGETING, AND COST RECORDS

Farmers and Price Changes. Do farmers change their plans in response to changes in the prices of certain farm products? Wheat farmers in the major wheat-producing sections continue production regardless of most price changes. The same applies to those producers of cotton, corn, and other staple products who are located in the region best adapted for their product. But comprehensive data demonstrate that producers as a whole do change to the more profitable from the less profitable enterprises, even when the current price of the product is used as the only indicator of profitability. Changes in the potato acreage can be anticipated quite accurately by considering the potato price of the preceding and of the second preceding season. Before government control the same could have been done for cotton acreage. Changes in hog production can be forecast by a consideration of hog and corn prices in the recent past. Illustrations might be multiplied.

The change in production is made by those producers who are on the margin of changing to some alternative enterprise, which the price changes promise to make more profitable.

The fundamental difficulty with the changes in farm enterprises is that they are generally based on a consideration of prices of the present and immediate past, instead of the probable future prices. In the typical situation the adjustment of enterprises on this basis is not profitable. By the time the farmer has left bean production to enter potato production, he finds that so many other farmers have done likewise that the potato price is low. Changes in farm plans should be based on future

prices, not present prices. How can farmers know future prices with sufficient accuracy to form the basis of their farm plans?

Price Information. Obviously farmers cannot themselves anticipate prices accurately. They do not have the necessary information on supply-and-demand changes at hand nor do they have the necessary technical training for the interpretation of such information. The collection, interpretation, and dissemination of price information are the function of governmental agencies and farmers' organizations. The U.S. Department of Agriculture and some state experiment stations have pioneered in this work. Since 1924 the Department of Agriculture has published information on farmers' "intentions to plant." These data are now available in preliminary form in January, with a more complete form in March. Data are also gathered on intentions to farrow sows. In recent years the Department has held annual *outlook conferences* in the fall at which representatives of the agricultural colleges meet with representatives of the Department and prominent public figures from other government and private agencies to consider the general economic outlook, particularly the prospects for farm products. The conclusions of these conferences have been given wide publicity in the press and through the Extension Service. Experiment stations have done additional work on the problems of their respective states.

Goals. With the passage of the AAA Act in 1933 the government specified the desirable acreages of the so-called *basic crops*, wheat, cotton, corn, rice, and tobacco (to which list peanuts were added later) and offered financial inducements to farmers to plant within their allotments, which were broken down on a state, county, and individual farm basis, and sometimes put positive penalties on overplanting. The planting of legumes and the turning of land to hay or pasture from row crops was encouraged by making conservation payments to farmers for these practices.

In order to indicate to farmers which crops were most needed first in the defense and then in the war effort, the Department of Agriculture adopted in 1941 and has since continued the policy of publishing acreage goals for all crops of any importance as well as for the six basic ones. In addition goals are set up for the number of hogs, cattle, and other livestock to be slaughtered and for the production of milk and eggs.

In addition to the outlook and goal material which becomes available in the fall, the U.S. Department of Agriculture and the state agricultural colleges and experiment stations pour out a continuous stream of information regarding prices, supplies, production, and marketing conditions for all the principal as well as many of the minor crops. Besides all this material from Federal and local government agencies, there are

numerous national and local farm magazines and newspapers which disseminate the information put out by the government and contribute analyses and information of their own.

The farmer sitting down to plan his operations for one or more seasons has thus available to him a great mass of information. In the case of certain crops, tobacco, for example, the maximum he can plant is set by government regulation. Of course, he may think it more profitable to adopt some alternative plan than to plant up to the limit allowed by the government crop-control regulations.⁷ On the other hand, for certain crops, of which potatoes are a good example, the government support price may be so attractive that the producer is impelled to plant as large an acreage as is feasible or the regulations will allow.

The influence of government regulation should not be exaggerated, especially for the years during and since the Second World War when, except for potatoes, tobacco, and cotton in certain areas, the Department of Agriculture did not in general attempt to limit crop acreage. In fact its influence was on the side of increase. The whole tendency, indeed, of the Administration, even before the war, was to give farmers greater freedom of choice than was the case in the early and middle thirties.

Subject to the limitations mentioned above, the farmer will be guided by forecasts of prices and costs, either his own or those derived from the informational material available to him. Too many are still unthinkingly prone to regard the past price as likely to continue, especially the price for the season just past, though farm prices are among the most flexible of all major price groups. For this reason official and unofficial price forecasts, estimates of demand for farm products, and information on goals and general economic conditions should be heeded, although price forecasting is still far from an exact science, even in the hands of the most experienced and skilled practitioners.

The intentions-to-plant reports also contain very useful information. If a farmer notes from these that there is apparently to be a large increase in the seeding of a particular crop, say soybeans, he can decide that, if everybody's doing it, it would be a wise thing for him to do it too. Or on the contrary, if there is to be a big crop of soybeans, a foresighted farmer may decide that the price will go down, so he will avoid that crop. Whichever decision he makes will probably be better, however, if he sizes up intelligently what the price situation will be at the time he expects to market his crop than if he makes plans on the basis of the past season's prices.

⁷ It should be noted, under the AAA law of 1938, that strict quotas on the sales of basic crops, which in turn will cause a farmer to limit his plantings, are not imposed unless two-thirds of the growers of the crop vote for them.

Farm Budgeting. The individual farmer in reaching a decision on what is likely to be his most profitable program of production will be assisted by the process known as *budgeting*. This involves balancing the probable costs of the various enterprises against the probable output and prices of the products in order to determine what enterprise or enterprises will enable him to obtain the highest net return from the farm. More exactly, budgeting calls for a consideration of the yields which can be expected from the various enterprises on this particular farm in relation to the costs involved and the probable prices of products. Incidentally, the farm owner must consider a system which will maintain the fertility of his soil. He must base his comparison on the average yields which he and his neighbors have experienced, since he has no accurate method of anticipating yields for the coming year. He must anticipate the prices of the cost factors which, however, rarely change greatly from year to year except at times of radical changes in the general level of all prices. Knowing average yields and the costs involved in the various enterprises, the farmer must compare these with probable prices and then decide on the combination of enterprises which will be most likely to be profitable.

Only unusually large price changes will encourage farmers to change from a product to which their farm is well adapted. Except in the face of unusually low prices, the typical Iowa farmer will continue to grow corn, although he should study the relation of corn to hog prices, of which more will be said in a later chapter, and in that way intelligently decide whether it will be more profitable to raise hogs or to sell his corn. Likewise, the Texas farmer of the black-soil belt will not change his cotton acreage much when its price falls, nor will the dairyman of southern Wisconsin cease to produce market milk when its price changes slightly. It is the marginal farmer, the one on the verge of producing one article or another, who will adjust his production plans with price changes.

A Sample Budget. The U.S. Department of Agriculture *Farmers' Bulletin* 1965 presents a sample of a farm budget. It has a worksheet (Table 19) showing the layout of the costs and expenses of a small cotton-livestock farm in Texas as an example. Filling out such a worksheet (in this case based on prices prevailing before the Second World War) on the basis of the current farm organization is the first step in making a plan or budget for future operations. This worksheet shows income and expenses for the current season.

Using this as a basis, several plans can be drawn up illustrating the effect of a change in the system. Thus alternate Plan I would involve almost complete concentration on cotton, while Plan III would emphasize

FARM ORGANIZATION

TABLE 19. WORKSHEET FOR FARM PLANNING

Item	Acres or head	Production		Amount kept for			Cash income			Farm expenses		
		Unit	Per acre or head	Total	Feed	Seed	Household	Amount sold	Price (dollars)	Value (dollars)	Cash operating expense	Value (dollars)
<i>Crops</i>												
Cotton:												
Lint.....	16	Pound	208	3,328	.....	...	...	0.16	532.48	Seed.....	30.30
Seed.....	16	Pound	.....	5,568	3,556	461	.....	0.015	23.27	Fertilizer and lime.....	16.26
Corn.....	10	Bushel	25	250	249	1	.....			Other supplies.....	185.75
Oats.....	7	Bushel	35	245	224	21	.....			Seasonal labor.....	
Cane.....	3	Pound	6,000	18,000	18,000		.....			<i>Livestock expense</i>	
Rotation pasture.....	8									Purchased feeds.....	86.31	
										Other supplies.....	19.75	
										Veterinary.....		
										Service fees.....		
										Seasonal labor.....		
<i>Livestock and livestock Products</i>												
Work stock.....	2											
Dairy cows.....	4											
Butterfat.....	...	Pound	250	1,000	52*	237	711	0.36	255.96	Monthly labor.....	68.00	
Cull cow.....	1/4	Pound	560	280	.....	...	280	0.04	11.20	Machinery repair.....	68.00
Veal.....	...	Pound	.....	300	.....	...	300	0.08	24.00	Building and fence repair..	60.00
Hogs (sows).....	3	Pound	.....	600	.....	...	150	0.09	13.50	Gas and oil.....	20.00
Pork.....	...	Pound	.....	600	.....	...	450			Automobile, tractor, and truck	
Poultry.....	150	Dozen	8 1/4	1,250	.....	45†	1,023	0.27	276.21	Property insurance.....	
Eggs.....	...	Pound	.....	600	.....	...	350	0.216	75.50	Cash rent.....	21.00
Meat.....	...									Current interest.....		
										Farm taxes.....		
										Irrigation and drainage charges		
<i>Other farm income</i>												
Total cash income (a).....												(b) 575.37
Total cash operating expense (b).....									(a) 1,212.12			636.75
Net cash income (a-b).....												

* Calves allowed to suck cows to equivalent of 52 pounds butterfat.

† Used for hatching.

livestock more and cotton less. Plan IV would involve conversion to a dairy farm with all the needed equipment. Using the costs and price figures on the worksheet, the net income can be calculated, as shown in Table 20.

TABLE 20. DIFFERENT WAYS OF ORGANIZING A SMALL COTTON-LIVESTOCK FARM IN TEXAS AND THE PROBABLE RESULTING CASH INCOME FROM EACH SYSTEM*

Item	Plan in use	Alternative plans			
		I	II	III	IV
	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>
Acres in crops:					
Cotton.....	16	44	22	11	6
Corn.....	10	...	8.5	12	14
Oats.....	7	...	5	7.5	8
Cane hay.....	3	...	2.5	3.5	4
Sudan Pasture.....	8	4	6	10	12
Permanent pasture.....	4	...	4	4	4
Total.....	48	48	48	48	48
Livestock:					
Work stock.....	2	2	2	2	2
Dairy cows.....	4	...	3	5	9
Hogs.....	3	...	3	7	1
Poultry.....	150	20	100	150	150
Net cash income (dollars).....	637	600	622	654	568

* Data given are adapted from a study in the Black Wax Prairie Belt of Texas. Prices and costs are at pre-war levels and not indicative of current income expectations.

SOURCE: *Farmers' Bulletin* 1965, p. 23.

Realistically, in budgeting a farmer should make the best estimate of the prices and costs likely to prevail when he expects to sell his crops and calculate his income accordingly. Thus, while on the basis of cash returns at prevailing prices, Plan III seems the best, if a farmer expected cotton prices to double while all other prices remained the same, Plan I would obviously be the best. Plan IV would be chosen, however, if dairy-product prices were expected to rise much faster than cotton prices.

For short-range, year-by-year farm planning, the cash-cost and cash-return basis will serve very well, and it may not be necessary to figure many alternative plans to get the guidance that is needed. The experience of the current year as one basing point and one or two possible alternative plans (keeping in mind the long-time farm plan) should be adequate. That Texas farmer, for instance,

would be doing the more usual kind of farm planning if Plans II and III were all he compared with his present system.⁸

Even for short-range planning, however, certain other factors besides cash income should be considered. Important among these are the products grown for home use and the amount of labor required. These are shown in Table 21. Plan I provides very little for home use and thus suffers in comparison with the other alternatives. On the other hand, it requires far less labor and for that reason might be preferred if the farmer had good work opportunities off the farm.

TABLE 21. INVESTMENT NEEDED IN DOLLARS AND LABOR UNDER DIFFERENT FARMING PLANS FOR THE SAME TEXAS FARM

Item	Plan in use	Alternative plans			
		I	II	III	IV
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Value of land	7,000	7,000	7,000	7,000	7,000
Value of farm buildings	450	180	350	470	500
Value of farm machinery	280	110	270	290	300
Value of livestock	665	265	555	755	820
	<i>Hours</i>	<i>Hours</i>	<i>Hours</i>	<i>Hours</i>	<i>Hours</i>
Man labor on crops*	1,035	1,320	1,108	983	930
Man labor on livestock	1,240	180	930	1,440	1,630
Total labor	2,275	1,500	2,038	2,423	2,560
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Value of products used in the home . . .	250	94	250	250	250

* Exclusive of picking cotton, which is included as a cash expense.

SOURCE: *Farmers' Bulletin* 1965, p. 23.

Table 21 brings out another factor of extreme importance in long-range planning, the changes in investment that would be required if the farm plan were altered. Plan IV would involve a significant increase in investment in buildings and livestock, with the accompanying higher depreciation and interest charges, and would only be undertaken if there were confidence of a favorable trend in dairy prices.

In a similar manner, the budget for any farm may be prepared. Obviously, where the growing of fruit trees or the building up of a herd of beef cattle is involved, the difficulty of looking ahead many years

⁸ U.S. Department of Agriculture *Farmers' Bulletin* 1965, pp. 24, 25.

complicates the budget making. Even in these cases the same general procedure applies.

Farm Cost Records. Budgeting necessitates that the farmer must know something about the time and costs involved in the production of different crops and in carrying on of different farm enterprises which are being considered. To do this fairly accurately requires that the farmer must keep some sort of operating records. Of necessity such records to be practicable must be simple and not require too much time to keep. The advantage in keeping records is that it encourages the farmer to analyze his business and compare actual results with what might have been accomplished. Budgeting carries the matter of analysis of costs forward to the point of comparing in the greatest detail economically possible the probable results from various alternative methods of organizing the farm. It provides a definite plan and sets up goals with which actual results may be compared. In working out budgets, farmers will find of assistance the typical budgets for different farming areas, worked out by the investigators of the U.S. Department of Agriculture and the state experiment stations. They will also find it useful to take advantage of the experience of other farmers with crops or enterprises with which their own experience is limited.

THE EFFICIENCY OF THE FARMER

The test of the efficiency of the farmer is the effectiveness of his planning and operation of the farm as measured by the ratio of input (including his own physical labor) to output. Another way of stating efficiency would be the rate of return earned on funds involved in investment in land, improvements, equipment, materials, labor hire, and foregone earnings for his own labor. In this chapter there have been considered several factors which affect this rate of return, causing it to vary widely from farmer to farmer and from year to year for the same farmer.

From the viewpoint of internal management we have noted, first, that there must be proper proportioning of the factors of production so as to avoid idle overhead which affects cost. Second, the selection of the grades for the various factors, considering their cost and their productivity, must be such as will prove most profitable under the circumstances facing the individual farmer. Third, as a particular application of the principles already mentioned, the farm business itself must be of a size which will permit proper proportioning of the factors and the avoidance of unnecessary overhead and labor. Fourth, the enterprises selected for the farm must be supplementary and complementary to such a degree as to contribute to the same result. Fifth, the farmer must plan his operations with consideration of the price outlook, and in such planning and

in the executing of the plans he will be assisted by budgeting and keeping cost records.

To carry out the foregoing principles is not easy, nor will doing so alone assure success. There must also be knowledge of the technique of farming, which it will be impossible to present in this volume. And, when all that has been attended to, there are still other factors which will tremendously influence the profitableness of the farmer's operations. A great number of these are involved in his relations to the other parts of the economic system. To influence these relations to their advantage most effectively, farmers must act in some collective manner. But to do that intelligently, they must understand the forces with which they are dealing. To contribute to a better understanding of those forces is the primary purpose of the pages to follow.

Questions and Problems

1. Are dairy-testing-association records primarily records of the efficiency or of the capacity of individual cows? Explain.
2. Give examples from your own observation of farms on which a factor of production was not being used to capacity.
3. What should be the size of the individual farm? Discuss.
4. What are the trends of the size of farms in the major sections of your state? Refer to the Census for information if necessary. Why are these changes taking place?
5. Distinguish between complementary and supplementary farm enterprises.
6. Give an example of a farm organized to include distinctly competing enterprises. Suggest changes which would be advisable in the organization of this farm.
7. Name and discuss the advantages and disadvantages of specialized farming as compared with diversified farming.
8. Give the best illustrations you can of conditions under which each of the two (specialized or diversified farming) is most profitable.
9. What is the purpose of farm-budget studies? Have any farm-budget studies been made in your state? If so, state what they show concerning the profitable character of the various farming systems compared, using the prices actually being received for the various farm products.
10. Compare the price forecasts given in the agricultural outlook of last year with the prices actually being received this year. If marked differences occur between the forecast and the actual price for particular products, investigate to determine the explanation of the difference.
11. According to your observation, do farmers adjust their plans according to the outlook information? If not, why not?
12. What effect do U.S. Department of Agriculture goals have on planted acreages, according to your own observations?

Suggested Readings

1. Frank App and Allen G. Waller, *Farm Economics* (1938), G. W. Forster, *Farm Organization and Management* (1938), Robert R. Hudleson, *Farm Management* (1939), and John A. Hopkins, *Elements of Farm Management* (1940), are recognized treatises on general farm management. Black, *et al.*, *Farm Management*, previously cited, is the latest and most comprehensive treatment of the subject.

2. John A. Hopkins, *Farm Records* (1936), treats specifically farm records and their use.

3. Neil W. Johnson, "Planning the Farm for Profit and Stability," U.S. Department of Agriculture, *Farmers' Bulletin* 1965 (1946), is a clear, simple exposition.

4. "Useful Records for Family Farms," U.S. Department of Agriculture, *Farmers' Bulletin* 1962. The title is self-explanatory.

CHAPTER 8

EXCHANGE VALUE AND THE MARKET

In Chap. 6 it was noted that production in a free-enterprise system is governed by the forces of the market, which find their expression in the prices entrepreneurs receive and pay and the profits they make. If prices and profits are favorable in a particular industry, production is expanded, more labor hired, more materials bought. Within limits, it is true, the entrepreneur has the alternative of expanding production or increasing his profit, but his freedom is limited by the extent of the competition prevailing in the market. In any case, whether he will make profits or not, whether he will have the opportunity of choosing to increase his profit or production rate, depends on the price situation and the nature of the market, that is, whether it is competitive or not. Since the impersonal, largely automatic, operations of the market limit entrepreneurs' choices and guide their actions and thus direct production, the study of the market is of key importance. Before proceeding to our analysis of markets, however, we shall define the concept of value as it is understood in economics.

VALUE IN ECONOMICS

The word *value* is a much abused word, carrying a variety of meanings, many of them rather vague. It has different meanings, for example, in philosophy, art, and music. By the term *aesthetic value* in art, reference is made to the significance placed upon certain combinations of lines or colors. These aesthetic values vary among different schools or groups of artists and to a certain extent among individuals. *Cultural value* is a term used in education to refer to the effect of certain forces, objects, or events conducive to the development of a better self or the advance of a desirable civilization. Extensive reading on a variety of subjects is generally considered to be of cultural value. *Ethical value* refers to a person's code of conduct, the significance as to right and wrong he places on various activities that are open to him. In a modern civilization the thief and racketeer are lacking in socially approved ethical values. These are but a few of many different uses of the term *value*, and the word is quite commonly used in some limited sense, as above illustrated, with the qualifying adjective omitted and expected to

be understood from the context. This results in frequent misunderstanding.

Utility. In order to understand the meaning of *value* as the word is used by economists, it is necessary to say a word or two more about utility, which was defined on page 75 as the power of a good or service to satisfy human needs and wants. Utility, of course, may be an attribute of a free good like sunlight, as well as of an economic good. Economic goods are characterized both by utility and scarcity, as was pointed out in Chap. 1. These two characteristics, indeed, typify the forces that are the basis of economic activity. Goods are desired because of their utility and men have to work to obtain and produce them because of their scarcity. In addition to possessing utility and scarcity, however, goods to be economic goods must also be under human control. For some people moonlight may be characterized by both scarcity and utility. Nevertheless, it is not an economic good because it is not under human control.

Economic Value. An economist may use the word *value* in any of its wide range of meanings. Usually, however, in economic literature the word is used to refer to some aspect of *economic value*, a term which may be defined as the significance of any good in directing human economic activity. Some economists make no distinction between economic value and *exchange value*, which latter term may be defined as the power of a good to command other economic goods in exchange. Careful consideration, however, will show that economic value is a term somewhat broader in scope than is exchange value. A state capitol building or the harbor of a port city, as examples, may have large economic value, in directing human economic activity, and yet have little or no exchange value, as that term is ordinarily used.

Subjective and Exchange Value. In economics the term *subjective value* is frequently used. This refers to the significance placed upon a good within the mind of an individual. It may perhaps be best defined as the utility of a good to an individual. To one person music has a great subjective value; to another its subjective value is very small. Free goods as well as economic goods have subjective value.

When the term *value* is used in economics without qualification, its most usual meaning is *exchange value*, or the power of the good to command other economic goods in exchange. The reader of economic literature, however, needs to be constantly on his guard, as the reference may be to subjective value or some other concept of value.

There are two sharp distinctions between subjective value and exchange value. First, since the former exists only in the mind of an individual, it cannot be measured. The latter, in contrast, is objective. It shows itself in actual transactions in the market, and hence the ex-

change value possessed by a commodity may be seen by any observer and expressed in definite quantities. Thus, a bushel of wheat may be observed to have an exchange value equal to a bushel and a half of corn, or three dozen eggs, or ten gallons of gasoline, or a certain amount of money. Second, exchange value is not an individual matter, but a market phenomenon. It reflects in a measure the subjective valuation of a wide variety and a large number of people.

In the wholesale market for consumers' goods, where the goods are bought for resale, the attitude of the buyers is not based on their subjective valuation but depends upon their estimate of the objective valuation which will occur in the retail market for those goods, and this objective valuation in turn is dependent upon the subjective valuation of consumers. When attention is turned to the market for raw materials and agents of production, the relation of exchange value to subjective value becomes still more distant. Yet buyers in all these markets are looking ultimately to the consumers' purchases, and hence these more distant valuation processes cannot be divorced from subjective valuation and the influences affecting it.

Exchange Value and Price. Exchange value refers to the power of a particular good to command in exchange not simply one other good but every other kind of good. To express the value of any particular good concretely in this way involves difficulties. It is possible to say that the value of a bushel of wheat is two bushels of corn, but to express the quantity of each kind of good which a bushel of wheat will command in exchange is impossible. Value, therefore, is ordinarily expressed in terms of money, and value so expressed is called *price*. Thus it has come about that the terms *value* and *price* are commonly used interchangeably, even by economists. But because value is defined as the capacity of a particular good to command in exchange other goods in general, it is important to recognize one assumption which is made when value is expressed in terms of money, or price. This is that changes in the value of a good are accurately reflected by changes in price only to the extent that the value of money does not change. Money, of course, has a value, or capacity to command other goods in exchange, as does any other good. And the value of money changes, as does that of other goods. With a great increase in the quantity of money in a country, the quantity of other goods remaining essentially the same, there will occur a great increase in prices. It may take twice as much money to buy the same quantity of other goods in general. The value of a dollar will then be only half as great as it was. Under these conditions, if a bushel of wheat sells for double the price at which it previously sold, its value, or power to command other goods *in general* in exchange, is the same as it was, because this higher price will buy only the same quantity of other

goods as previously. Because it is customary in economic discussions to use the terms *value* and *price* interchangeably, it is customary when the price of wheat has declined from \$3.00 to \$1.50 per bushel to say that wheat has declined to half its former value. This is accurate only if the value of money has not in the meantime changed, or, otherwise expressed, it is accurate only if the general level of all prices has not in the meantime changed.

In analyzing the causes which determine exchange value we shall first use *price*, that is, the amount of money for which a commodity will exchange, as representing the value of that commodity. In so doing the assumption is always made that during the period covered by the analysis the value of money, as represented by the general level of all prices, has not changed. Later it will be necessary to examine the causes which result in changes in the value of money, or general level of all prices. And because changes in the general level of prices affect the prices of different kinds or classes of goods differently, some kinds changing more quickly than others, our analysis of the causes of the values of different kinds of goods over a period of time will not be complete until the effects of changes in the general level of prices upon the relative prices of different kinds of goods, one in relation to another, have been considered.

THE MARKET

Market Defined. Since value or price in one market may be different from that in another, it is necessary to understand what is meant by a *market*. This word, like value, is used with a variety of meanings. Sometimes the producer speaks of the market as the demand of consumers or buyers which he is seeking to satisfy, as for instance when he says, "the market desires quality now, rather than a large quantity at a low price." Second, a *market* may refer to a place where a transfer of title takes place, even though the goods need not be present. The New York Stock Exchange furnishes such a market, as on its trading floor title is transferred to a tremendous amount of property which is not present and much of which is not even within the city. No usage of the word *market* is better understood or more widely applied than that indicating a place where buyers and sellers meet. Next, the term *market* may refer to the direction of price movements, as when it is said that the market is strong, or the market is weak. The word is used with various other shades of meaning, depending on the purpose of the discussion. As our purpose at present is to analyze the factors which influence or determine price, we shall define a market briefly as the area within which the factors affecting the price of a particular good act in the same way and have the same influence, throughout which, therefore, the prices of all specimens of that good tend to be equal, moving up and

down together. This definition will be made clearer and more exact by a quotation from Alfred Marshall:

As Cournot says, "Economists understand by the term *Market*, not any particular market place in which things are bought and sold, but the whole of any region in which buyers and sellers are in such free intercourse with one another that the prices of the same goods tend to equality easily and quickly." Or again as Jevons says: "Originally a market was a public place in a town where provisions and other objects were exposed for sale; but the word has been generalized, so as to mean any body of persons who are in intimate business relations and carry on extensive transactions in any commodity. A great city may contain as many markets as there are important branches of trade, and these markets may or may not be localized. The central point of a market is the public exchange, mart or auction rooms, where the traders agree to meet and transact business. In London the Stock Market, the Corn Market, the Coal Market, the Sugar Market, and many others are distinctly localized; in Manchester the Cotton Market, the Cotton Waste Market, and others. But this distinction of locality is not necessary. The traders may be spread over a whole town, or region of country, and yet make a market, if they are, by means of fairs, meetings, published price lists, and the post-office or otherwise, in close communication with each other."

Thus the more nearly perfect a market is, the stronger is the tendency for the same price to be paid for the same thing at the same time in all parts of the market: but, of course, if the market is large, allowance must be made for the expense of delivering the goods to different purchasers; each of whom must be supposed to pay in addition to the market price a special charge on account of delivery.

In applying economic reasonings in practice, it is often difficult to ascertain how far the movements of supply and demand in any one place are influenced by those in another. It is clear that the general tendency of the telegraph, the printing-press and steam traffic is to extend the area over which such influences act and to increase their force. The whole Western World may, in a sense, be regarded as one market for many kinds of stock exchange securities, for the more valuable metals, and to a less extent for wool and cotton and even wheat; proper allowance being made for expenses of transport, in which may be included taxes levied by any customs houses through which the goods have to pass. For in all these cases the expenses of transport, including customs duties, are not sufficient to prevent buyers from all parts of the Western World from competing with one another for the same supplies.¹

Limits to Extent of the Market. Since the market for our present purposes has been defined as an area, it is proper next to inquire: What are the conditions which determine the extent of the market? For all commodities in general that which is most important is the degree of development of means of transportation and communication. Cheap, safe, and rapid transportation are prerequisites to any market of wide extent. Rapid communication, as by telegraph or telephone, is of great

¹ Alfred Marshall, *Principles of Economics*, 8th ed. (Macmillan, 1920), p. 324.

assistance. For a particular commodity the important factors which will affect the width of its market may be conveniently summarized under four general heads, *viz.*: (1) the extent of the demand; (2) portability; (3) cognizability; (4) government restrictions.

No market can be wider than the area within which the commodity is in demand. This may not seem an important point in connection with agricultural staples, because the demand for them is widespread. Nevertheless, certain articles of food highly esteemed in some European and Oriental countries would find little demand in the United States. The discrimination of the people of Boston against white-shelled eggs in favor of brown-shelled ones may be considered as a slight limitation in demand for eggs with a white shell. For goods such as machinery and many kinds of clothing there are distinct regional limitations in demand. There is no demand for furs in the tropics, for polo suits in a rural village, or for mining machinery where there are no mines. For many kinds of manufactured goods demand must be developed, and the same is true of at least a few agricultural products, for example, some particular kinds of California fruits. Advertising is credited with having greatly enlarged the market for California oranges. An important aspect of limits in demand is lack of purchasing power. An effective demand requires not only a desire for the good but the purchasing power with which to buy it. The market for certain agricultural products is limited because of lack of purchasing power in areas which might otherwise buy them—for example, the market for American wheat in parts of the Orient.

Portability is the greatest single factor in determining the differences in the extent of the market for different agricultural products. Under portability is included the relation of value to bulk or weight of the commodity. Butter is sufficiently valuable in relation to bulk that, with modern transportation facilities, it can stand the cost of being shipped around the world. "Since charges for long distance transportation are estimated at only a half cent per pound of all butter"² the market area for butter of standardized quality is certainly nationwide. Hay even at \$25 per ton, in contrast, has such a low value in relation to bulk that the market for it lacks much of being nationwide. Bulk in relation to value for straw is so great that the market for it is quite local, and in most places where it is plentiful there is "no market" for it. Among nonagricultural products, bricks and fuel wood are good examples of commodities for which the market area is relatively limited because of great bulk in relation to value. The market for coal is far

²C. B. Howe, "*Marketing Margins and Costs for Dairy Products*," U.S. Department of Agriculture, *Technical Bulletin* 936, November, 1946, p. 41.

from nationwide for the same reason, and the market for sand and gravel is generally local.

A second aspect of portability is perishability. The best illustration of an important agricultural product which has a relatively limited local market on account of perishability is fluid market milk. Accordingly, the farmers supplying milk to any large city form, generally speaking, a distinct market area, and prices received by farmers may vary considerably for different city milk sheds. Farmers supplying milk to New England cities receive over extended periods of time prices twice as high as those supplying cities of similar size in the Middle West. Improved transportation methods, however, are continuously widening the market for highly perishable agricultural products. Sweet cream from Minnesota is marketed in Philadelphia. Australian lamb is frozen and shipped to England. California, Florida, Texas, and Cuba, sometimes by air express, supply fresh fruits and vegetables to the urban centers of the East. New extensions in the area of the market for highly perishable products are taking place every year.

Cognizability of the product is essential along with portability in order that there may be a free, wide market. The prices of rugs in different cities do not move up and down together in as close correspondence as does the price of wheat. Pure-bred cattle for breeding purposes do not all vary together in price as do steers of a particular grade ready for the packer. The explanation lies in the fact that rugs and pure-bred stock have individual qualities which are not easily recognized, or cognizable. The more nearly all the various parts of the supply of a commodity are alike in quality, the wider is the extent of the market likely to be. It is ease of cognizability along with portability which causes the market for the precious metals and securities such as those listed on the New York Stock Exchange to be practically world-wide. Because of differences in degree of ease of cognizability and uniformity, there have developed three methods of sale: (1) by description, (2) by sample, and (3) by inspection. Goods with the greatest degree of cognizability and uniformity are sold by description, and it is for these that the market area is the widest. Commodities with a somewhat lesser degree of cognizability and uniformity are sold by sample, and for these the market area is less wide than for those which may be sold by description. Commodities with the least degree of cognizability and uniformity, those possessing the highest degree of individual qualities, are sold by inspection, and for these the market area is the most limited.

Government restrictions represent limitations of a different type to the extent of the market. Because of the fact that Germany had in 1931 a tariff of \$1.62 per bushel, France one of 85 cents per bushel, and

Italy one of \$1.08 per bushel on the importation of wheat, the market area for wheat was distinctly interfered with. Such tariffs, when they become substantially prohibitive, as many of them do, result in setting up more limited market areas, in which prices often do not move at all closely together. The United States tariff on butter has caused butter prices in this country to move differently in relation to the rest of the world from what they would do if this tariff were not in force. Some countries have put absolute embargoes on commodities which would otherwise be imported in considerable quantities. The effect of such an embargo, where the commodity would otherwise be imported, is to constitute of the region to which the embargo applies practically a separate market, shut off from the balance of the world.

Examples of Width of the Market. In the current disturbed state of international economic and political affairs, it is probably safe to say that there is no important commodity for which there is a true world market. Possibly a few raw materials, like rubber and tin, may be exceptions to this statement, but only after allowance is made for the fact that their prices at the point of origin are strictly controlled.

In the years before the First World War, however, and to a somewhat lesser extent in the decade following, the markets for a great many important commodities, notably wheat and cotton, were essentially world-wide. This was so because cotton is used by all classes of people in practically all parts of the world except in the very cold regions and wheat is an important part of the diet in most nations. Both are among the most nonperishable of agricultural products. Cotton and wheat are not bulky in relation to value, particularly when it is realized that much of the transportation is by ships over large bodies of water. Baled cotton is easily handled and does not suffer from ocean transportation, whereas wheat can be handled in bulk cheaply and withstands ocean shipment better than most grains.

Price quotations from different market centers in the same market area should fluctuate together. If prices in one market center become higher than in others in the same market area, the quantity of product flowing to, and offered for sale in, the place where prices are high will increase. Sales will decrease or cease to be made where prices are lower, and the goods will be moved to points where they are higher until prices at the various points where goods are bought and sold are in their normal relationship again. In the case of butter, for example, if Los Angeles prices should happen to be 3 cents higher than New York prices, butter from points in Minnesota, from which shipments were previously made to New York, would now be shipped to Los Angeles until New York and Los Angeles prices came closer together again. With staple farm products the work of keeping prices in line in various centers is in part

performed by speculators, who are constantly on the watch for an opportunity to buy products where prices are low and sell where they are high.

Price quotations for wheat at Kansas City and New York for a recent period of years are shown in Fig. 10. New York prices are higher because grain must be transported from the surplus-producing area in the middle of the country to the East for consumption or export. It is clear from the similarity of the movement of prices at both cities that they form part of the same market.

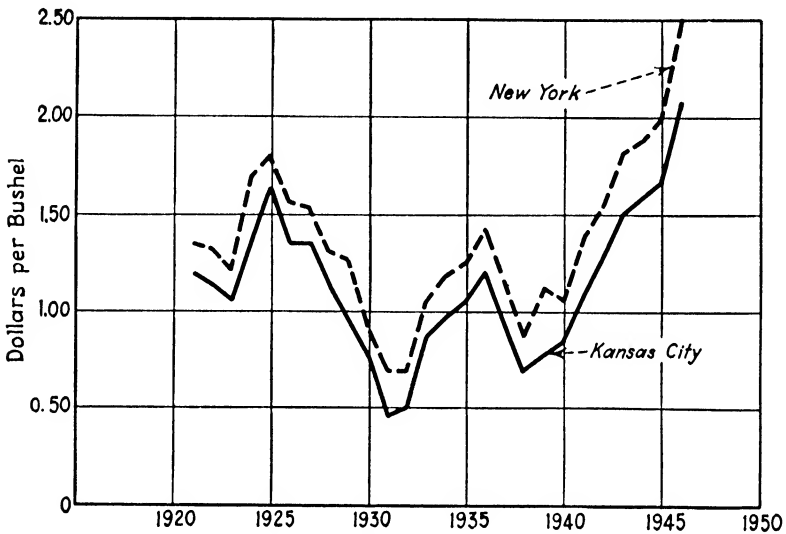


Fig. 10. Average price No. 2 hard winter wheat, Kansas City and New York, 1921-1946. Source: *Agricultural Statistics*, 1939, p. 24, and 1947, p. 20.

In earlier editions of this book a similar chart showing a similar relationship between wheat prices in Kansas City and Liverpool was used, illustrative of the fact that once wheat had a world-wide market. For the past twenty years, however, restrictions on imports into foreign countries and price-raising measures in this country have broken this international market, where wheat prices all over the world were simultaneously affected by the same factors, into a collection of partially connected national markets.

Because great quantities of wheat still travel across national boundaries, the wheat situation in one country still affects that in others, though the impact of the foreign wheat position is muffled and distorted by tariffs, import quotas, and government price-control measures. The market for potatoes is definitely no more than nationwide, for the United States has little export or import trade in this commodity. It is not

clear, however, that the potato market is always fully nationwide, for at times major regions of the United States appear to be separate markets. Potatoes are used in all parts of the United States by nearly all of the population and are sufficiently nonperishable to withstand transportation to any part of the country. However, their value in relation to bulk is lower than is the case with wheat, and they must be protected from extreme temperatures. All in all, potatoes are less transportable than is wheat.

The annual average price of potatoes in Idaho and Maine, the two most important producing states, are presented in Fig. 11. As a rule,

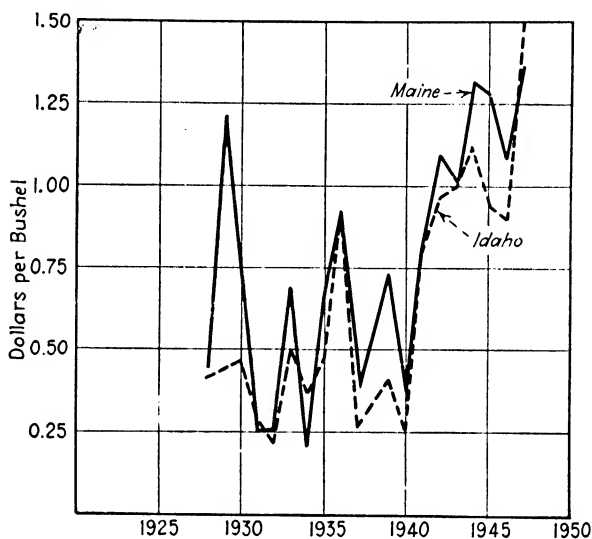


FIG. 11. Potato prices, crop season average price received by farmers in Idaho and Maine, 1928-1947. Source: BAE, USDA.

prices move up or down at the same time in both states, a fact tending to show that both states are included in the same general market area. During some seasons, however, the amount of price change from the previous year is considerably different in these two states. For instance, in 1938, the farm price for potatoes in Maine was 55 cents per bushel, a very large gain over the 1937 price of 37 cents, while in Idaho in the same two years, the price went up only 7 cents, from 26 to 33 per bushel. What happened was that the 1938 crop in Maine was much smaller than that of 1937, while the supply of Idaho was about the same in both years. Total potato production in the United States was less in 1938 than in 1937, tending to push up the price, but the relatively shorter supply in the East, because of the small Maine crop, affected the price in that state with especial force. In 1942, on the contrary, the Idaho

price went up, while the Maine price went down. While the market forces affecting potatoes are largely region-wide rather than national, yet unusual differences in prices in different parts of the United States will lead to interregional shipments, which tends to tie together the market situation in all parts of the country.

Hay is a good example of a commodity with a relatively local market. Although hay is nonperishable and is used in all rural parts of the country, its value in relation to bulk is so low that transportation for long

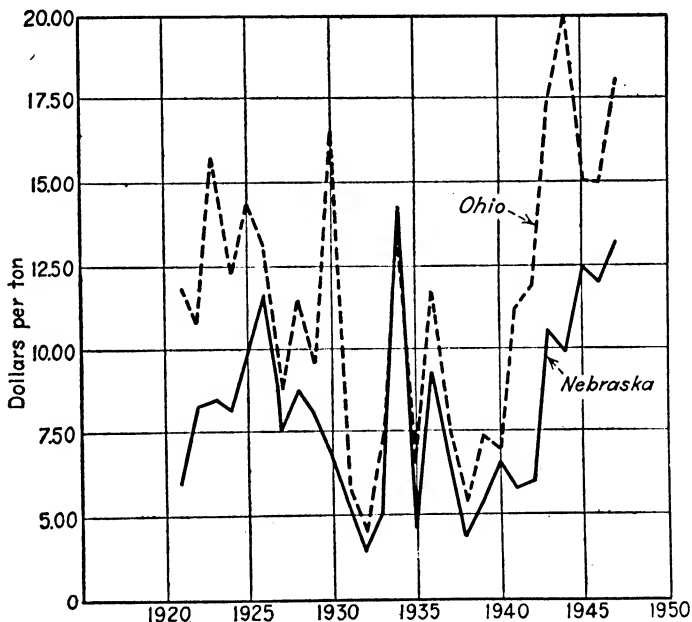


FIG. 12. Hay: Season average price received by producers in Ohio and Nebraska, 1921-1947. Source: BAE, USDA.

distances will take place only under unusual circumstances. Quarantines, such as against the alfalfa weevil, further hamper the transportation of hay. The annual average prices of tame hay in Ohio and in Nebraska are presented in Fig. 12. There does not seem to be a close relationship between the changes in the prices of hay in these two states. First the price is higher in one state and then in the other. In 1930 in particular, whereas hay rose to \$16.50 a ton in Ohio, it fell to \$6.80 a ton in Nebraska. Again, between 1940 and 1941, hay prices rose in Ohio, but fell in Nebraska.

Significance of Width of Market. If a farmer produces crops like wheat, sugar, wool, or cotton, which are affected by conditions abroad even though the United States market has been insulated to a consider-

able extent from outside influences, he must obviously keep his eye on what goes on in other countries. Expansion of the cotton area in Brazil and of sugar production in Cuba are of patent interest to him. Droughts in Western Europe increase the demand for American wheat. More important than variations in production, as we have had ample cause to observe, are political events abroad; for instance, a foreign government may impose restrictions on United States agricultural products which materially narrow the export market, as happened in the 1930's, when German tariffs and import quotas reduced nearly to zero our formerly large shipments of lard to that country. The most important political events which affect world trade, of course, are wars. At the beginning of each world war, foreign trade in agricultural products was stifled, but as the war continued, the belligerents purchased vast quantities of food and clothing materials to the profit of the American farmer. In both instances, this demand, because of the time it takes for recovery from the devastation wrought by a modern war, continued for many years after the end of hostilities.

One of the notable characteristics of a market covering a wide area is that there is a tendency toward stability of supply. Crop failures in one part, as in the case of Western European wheat in the winter of 1946-1947, may be offset by bumper crops elsewhere, as happened in the United States at the same time. This does not hold true of local markets. An unusual production of strawberries in one locality cannot be relieved completely by shipments to distant consuming centers. A light local hay crop may force prices to unusual heights. The prices of products with only a local market do not have the stabilizing influence of differences in conditions of production within different parts of the market supply area. If one local producer has high yields, most of his neighbors will under the same conditions also have high yields, to their mutual loss through the resulting depressed prices.

Commodities, Standardization, and Substitution. Before an analysis of the price of a commodity or a service can be made, a number of terms and ideas must be delimited. In ordinary conversation broad commodity names are used without a realization of the significance of differences in grades or types of the commodity. Thus, the term *wheat* is often used as though it were a homogeneous commodity. Yet the milling quality of wheat, as shown by its protein content, as well as other characteristics, separates wheat into many subclasses, for which somewhat different prices prevail. And the spreads between these prices vary according to the relative supplies of and demands for these types of wheat. For example, in the drought years of 1934 and 1935, which so drastically reduced the yields of high-protein wheats in the Great Plains area, premiums on this type of wheat advanced greatly.

For the great agricultural staples, fairly definite grades, based on scientific analysis or the judgment of experts, have been established. In contrast, in the great bulk of the commodities sold at retail, widely recognized grades are rare. For these, consumers tend to rely on the goods sold under particular brands which they think are of the desired quality. In the discussion in later chapters of the effect of advertising and branding on prices for these goods, it must be remembered that such branding does provide a degree of standardization upon which the inexperienced consumer may rely. In fact, in cases even of goods which are graded according to accepted standards, such as butter, many consumers come to prefer such brands as Land O'Lakes or Meadowbrook. Whether such brand preference, *in addition to careful grading*, aids the consumer or the economic order is questionable. That it adds to the profits of some sellers is evident.

In the analysis of prices, it is necessary to consider the supplies of goods and the substitution of one for another. Careful thought here will lead us to qualify our usual concept of a commodity. Is not low-grade wheat used chiefly for animal feed more in competition with corn and barley than with high-protein, milling wheats? Is it not possible that, in the purchase attitude of a moderately well-to-do housewife, sirloin steak is in more competition with Armour's Star Ham than is a low-priced, unbranded ham? To carry this point a step further, may not the sellers of different commodities which are bought by people in the same income class be much more strongly in competition than the sellers of different grades of a single commodity. Thus Rolls-Royces and large diamonds are probably much more competitive with each other than they are with cheap used cars on the one hand and rhinestones on the other. Illustrations of this type all point to an important principle, *viz.*, that substitution of one good for another may be as often between what we call commodities as between different grades, or between well-known and little-known brands, of the same commodity.³

Competitive and Monopolistic Markets. Up to now we have been distinguishing between markets on what might be called a spatial basis; asking the question, "How far does it extend?" Another way of distinguishing between markets which cuts across the spatial classification is by the amount of competition which prevails in them.

A competitive market is one in which there are many buyers and sellers, where the goods sold are so standardized that the buyer has no preference for the product of any particular seller, and most important, where the price is not perceptibly affected by the amount sold by any one seller or bought by any one buyer. The price is beyond the influ-

³ Cf. Robert Triffin, *Monopolistic Competition and General Equilibrium Theory*, (Harvard University Press, 1940), p. 82.

ence of an one buyer or seller in any measurable degree. Such a situation used to be approximated in the markets for wheat and cotton before the days of government programs and still is somewhat true of them when their prices are so high above the support price level that they are not influenced by it.

Another characteristic of a competitive market is freedom of entry. This means in effect that large numbers of new buyers and sellers can come into the market without being hindered in any way by legal regulation, by the necessity of providing large amounts of capital or of overcoming consumer resistance.

In contrast, under pure monopoly there is only one seller. Therefore, by controlling the quantity offered for sale, the seller can control the price at any point he desires within the range at which buyers will buy. Such complete or pure monopoly is rare. In fact, illustrations must be drawn almost exclusively from the field of privileges granted by the government to certain persons, such as under the patent laws.

Most of our actual markets are neither purely competitive nor purely monopolistic. Most goods are sold under conditions of *monopolistic competition*, in which both competitive and monopolistic tendencies are present. In any case in which the seller finds that he must consider the effect of his volume on the price or in which the buyer will pay more for an article with a well-known brand rather than for a similar good sold by another firm, monopolistic competition, not pure competition, exists. There are two major contributing factors to the widespread existence of monopolistic competition.

First, there is a widespread, and probably growing, number of markets in which there are so few sellers that each must consider the probable effect of his volume on the price. Such fewness of sellers is known as *oligopoly*. In case there are ten sellers, the increased volume obtained by one seller through price cutting may make such a reduction in the sales of the remaining nine that they will meet the cut. If so, the original price cutter will have gained nothing. Therefore, he would, if wise, include in his calculations the effect of his price cut on the price quotations of the other firms in the industry. Certainly one major steel company cannot cut the price on steel sheets without expecting that the industry will follow. Again, if one of three taxi companies *giving equal service* in a small town cuts fees, it may expect like cuts shortly by the others.

The second influence tending to make for monopolistic competition is the lack of standardization of the good, *as viewed by the buyer*. It makes no difference whether two cans of peaches carrying different labels are physically identical, or whether two lawyers are equally able; if the buyers of these commodities or services think they are different, elements

of monopoly are present and they will command different prices. *Product differentiation* is the term which is applied in economic literature to such real or imagined differences among the goods offered by different sellers. *Such differentiation is most frequently created by the seller for the purpose of escaping from competition.* If he makes the product slightly different physically it is most often to convince the buyer of the superiority of his good. Frequently, branded goods are identical with unbranded goods or with those sold under other brands, but if a great number of consumers are convinced of the superiority of a given brand, they will prefer this brand even at a higher price. Such are the motivation and economic effects of "brand advertising." In fact, on occasion, the substitution by the buyer of an inferior (to him) brand for a well-known brand may be less frequent than the substitution of what we think of as a distinct commodity. All this reasoning leads to the conclusion that for many purposes in economics a successfully differentiated article is a distinct commodity. Its producer has to that extent a monopoly. Certainly he has to consider the effect of *his volume* on *his price*. And he must concern himself with substitution of other brands also insofar as price concessions or renewed vigor in salesmanship by other sellers will wean his customers from his brand.

Branding and advertising are not the only means by which the product of one firm, actually no different than that of another, becomes differentiated in the eyes of consumers. In the case of small shops, for instance, the personality of the owner or salesman will influence consumer preferences and so will the reputation of the firm.

A third, but minor source of monopolistic power might be called locational. If there is one store in a town, it can raise its prices till they become so much higher than those in nearby towns that customers find it worth while to go the extra distance to shop.

While the firm selling in the markets just described resembles a monopoly in that it has a market peculiar to it, it is far from enjoying the power of a monopoly, because its exclusive market is very narrow. In contrast to a true monopoly the area in which it can act freely without fear of competition is generally small.

Monopsonies. A purely competitive market is one where there are a great many buyers and sellers and where the action of no one in either class can affect the situation materially. A monopolistic market is one where there is but one seller, though the word is often also used in a general sense to mean a market where there are one or few buyers. More accurately a market with one buyer and many sellers is *monopsonistic*.

Like pure monopoly, pure monopsony is rare and usually exists only

by virtue of government regulation. Thus the U.S. Atomic Energy Commission is the sole lawful buyer of uranium-bearing materials in the United States.

There are, however, many examples of monopsonistic competition. Thus, since there are only about seven manufacturers of passenger cars in the United States, it is fairly clear that a firm making car bodies is facing such a market. On the whole, though there are many of them, markets with monopsonistic elements are not so important or so numerous as those with monopoly elements on the selling side. That is so because almost everything that is sold in finished form is bought by many consumers. If one ordinary consumer cuts his weekly purchases of bread or his yearly purchases of suits of clothing, the effect on the price is imperceptible. It is different, however, if one of the three producers of aluminum ingots in the United States, one of the half-dozen large makers of farm implements, or one of the four large tire manufacturers radically changes its price or production policies. There is nevertheless one form of monopsonistic market that is quite widespread and deserves mention because it is an example of monopsony due to location. That is the case of the one large employer in a small town. He is, in effect, the sole buyer of labor in that area.

It is often said that the markets for raw farm materials approximate the conditions of pure competition. This is largely true for cotton and wheat where there are many sellers and many buyers with no single one (except perhaps the government) important enough to influence prices by its own actions. It has often been alleged, however, that the market for tobacco is dominated by a few large makers of cigarettes and other tobacco products and, for livestock, by a few large meat packers. Indeed the markets for manufactured goods, including many processed farm products, for professional services, and in fact for the major part of what we as a nation produce and consume involve monopolistic competition.

While, as indicated, markets for consumer goods are free of monopsonistic elements, these are present in the markets for most manufactured articles that go into the making of consumer goods and for raw materials except a few agricultural staples and perhaps lumber.

Questions and Problems

1. Name with distinguishing adjectives and define ten uses of the word *value*.
2. Distinguish between value and price.
3. When the terms *value* and *price* are used interchangeably by economists, what assumption is made?
4. What definition of a market is assumed in the discussion of limits to the extent of the market? What are these limits? Give an illustration of each.
5. Compare the width of the markets for wheat, cotton, and potatoes.

6. How does monopoly affect the width of the market?
7. What are the general characteristics of commodities with the widest markets and those of commodities with the narrowest markets?
8. In what ways were the markets for American farm products widened between 1815 and 1890?
9. In what ways have they been narrowed since 1914?
10. Distinguish a competitive from a monopolistic market. Explain the essential difference between competition and monopolistic competition.
11. Does the grading of commodities facilitate competition?
12. How does product differentiation change the character of the market?

Suggested Readings

Any of the standard treatises on principles of economics mentioned in other parts of this text may be consulted for the views of other writers. Alfred Marshall, *Principles of Economics* (1920), Book V, Chap. I, and F. W. Taussig, *Principles of Economics* (1939), Vol. I, Chap. 8, are especially recommended. Edward Chamberlin, *The Theory of Monopolistic Competition* (1938), Introduction and Chap. IV, and A. L. Meyers, *Elements of Modern Economics* (1941), Chap. V, contain excellent discussions of competition and monopoly. Corwin Edwards, *Maintaining Competition* (1949), discusses the meaning of competitive markets.

CHAPTER 9

DEMAND, SUPPLY, AND MARKET PRICE

In this chapter we are going to come to grips with one of the central problems in economics. This is the problem of exchange value, which involves the study of the forces that determine price. Why does wheat cost \$2.50 a bushel, corn \$2.00, oats \$1.00? Why on one particular day is lard 25 cents a pound and cottonseed oil, which after processing has much the same uses, 35 cents? Why six months later, will the price of lard advance to equal cottonseed oil? Questions like these can be asked about every commodity and every service. Their importance is obvious enough to require no demonstration, for every economic action involves a price. In this chapter we shall begin our discussion of how it comes about that prices are what they are.

This and the following three chapters are concerned with the prices of particular commodities and their relationships to each other. Beginning in Chap. 13, we shall go on to consider the general level of prices, the average of the prices of individual commodities, and why it changes from time to time.

The analysis of the forces which determine prices cannot be clear unless the time period under consideration is indicated, because there are significant differences in the price-making process depending on whether a short or a long term is involved. Therefore, let us say at the outset that in this chapter the discussion of demand is intended to cover this subject fully, for both short and long periods. The analysis of price in this chapter, however, is for a short period only. Chap. 10 covers the price-making forces that manifest themselves as the time span lengthens.

The analysis of price, though still a very important part of the study of economics, is no longer considered the most basic. The reason for this "demotion" is the coming to the fore of the problem of maintaining stability in economic activity. Since it is believed that it is not fluctuations of individual prices, but other factors, such as changes in the general price level or shifts in the rate of investment, that cause instability, the study of these matters is now considered to be equally significant as that of the forces determining individual prices. These latter, however, can hardly be disregarded.

DEMAND

Consumers' Market Demand. We shall begin our examination of prices by considering the buying side of a competitive market during a period so short that the quantity available for sale can be regarded as fixed.

Buyers are in a market because they believe that what is being sold will have utility for them and they therefore want it. In addition to desire, however, they must also have the ability to buy. Thus, the demand attitude of the market as a whole is composed of the combined individual demands of all those who have both the desire and the purchasing power to acquire the good under consideration at prices which might possibly prevail. *Market demand* should never be spoken of except with respect to a price, and, as that term will be used here, it refers to a schedule or table of the quantities of a good which buyers will purchase at different prices. Such a schedule, hypothetical in this case, is contained in Table 22, showing the pounds of meat which the

TABLE 22. A DEMAND SCHEDULE OF 750 FAMILIES COMBINED FOR MEAT

Price per Pound, Cents	Amount Purchased, Pounds
110.....	310
100.....	400
90.....	540
80.....	675
70.....	760
60.....	825
50.....	925
40.....	1,050
30.....	1,300

750 families whose demand affects the price in a given market would buy per day at the various prices which might possibly prevail. Thus at \$1.10 per pound, the purchases of the 750 families combined would be only 310 pounds, but at 60 cents they would be willing to increase their purchases to 825 pounds, and at 40 cents the purchases would mount to 1,050 pounds or about 1.3 pounds per family on the average.

The definition of market demand as a demand schedule differs from the use of the word *demand* on occasion in current speech and by some economists who are referring to the quantity which will be purchased. The inadequacy for our present purposes of this latter use of the word *demand* should be explained. The amount which will be purchased depends upon the price quoted, and therefore, if demand is defined as a certain quantity of goods, a definite price is assumed, for consumers will purchase a given quantity only at a certain price, a price which may be

found on a demand schedule. We, however, are examining demand to determine its influence on market price. Therefore, to define demand as a quantity of goods, which is to assume a definite price, and then to use demand as one of the factors determining price would be an excellent example of circular reasoning. In using demand as a factor which determines price, it should be considered only as a schedule or curve.

The Demand Curve. The nature of demand as a demand schedule, and the nature of the relationship existing between price and quantities

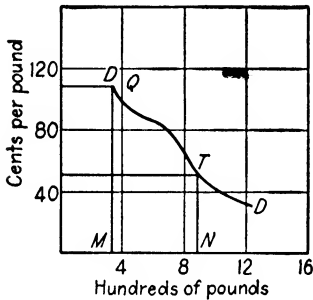


FIG. 13. The demand for meat by 750 families (hypothetical).

bought, will be clarified by the graphic presentation of demand as the demand curve, as is done in Fig. 13. In a demand curve, prices are always measured along the vertical axis and quantities along the horizontal axis. The demand curve is constructed in the following manner. From the demand schedule in Table 22, we note that, at \$1.10 per pound, 310 pounds of meat will be purchased. A perpendicular is raised from the point on the horizontal axis which represents 310 pounds, here called *M*. Similarly a perpendicular is extended from the point on the vertical axis which indicates \$1.10. Where the two perpendiculars cross, *Q*, is the point representing the relationship between 310 pounds and \$1.10 per pound. In a like manner points are located showing the relation of price and quantity when the price is \$1.00, 90 cents, and so on for the whole schedule of Table 22. The final step is to connect the various points by the curve *DD* or the demand curve. If the student will come to visualize demand as the demand curve, it will be of great aid in studying prices.

Factors Influencing Market Demand. Why will consumers buy more goods only at lower prices? Or, asking the question in terms of the demand curve, why does the demand curve slope downward and to the right? Three factors aid in understanding the background of market demand.

First, it is observable that anyone will buy more of a desired article if the price falls and *his income remains the same*. Let the reader imagine what his reaction would be if, with no change in his income, the price of clothing were halved. He would not necessarily buy twice as many suits, shirts, shoes, etc., per year than before, but he would almost inevitably buy more. Imagine also what the response would be if the price were doubled. He would buy less, maybe half as many as now, maybe even less than half. Thus by imagining how many he would buy at any possible price, the student can construct his own

demand curve for suits, and if he wants to take the trouble he can do the same for any article or service he customarily buys. If all individuals had the same incomes and the same scale of preferences, the aggregate demand curve for any good, made by adding up the individual curves, would slope downward and to the right. Actually, of course, individuals do not have the same scale of preferences or incomes. These differences are additional reasons that the curve assumes this shape.

In the second place, as the price becomes lower, it brings the good within the reach of lower income classes, who can buy little, if any, at high prices because of their greater desire for other things. The hypo-

TABLE 23. THE AVERAGE DAILY DEMAND SCHEDULE OF 750 FAMILIES COMBINED FOR MEAT, SHOWING EFFECT OF INCOME ON DEMAND ATTITUDE

Price per pound, cents	Purchases of groups of families classified according to size of income				
	50 families of A income, pounds	100 families of B income, pounds	200 families of C income, pounds	400 families of D income, pounds	Total purchases of 750 families, pounds
110	200	100	10	00	310
100	200	150	50	00	400
90	200	200	100	40	540
80	200	250	150	75	675
70	200	250	200	100	760
60	200	250	225	150	825
50	200	300	250	175	925
40	200	350	300	200	1,050
30	200	500	300	300	1,300

thetical data in Table 23 show how the poorer families enter the list of actual purchasers as the price of meat declines. At \$1.10 per pound only the wealthiest families (Group A) could buy the full amount of meat they desired, 200 pounds per day. In Group B the purchases would be only 1 pound per day per family when the price is \$1.10, but increase to 5 pounds per family when the price falls to 30 cents per pound. Families in Group D would purchase no meat unless the price is as low as 90 cents, and would not materially increase their purchases until the price falls to 40 cents and would not purchase more than 0.75 pound per family per day even at 30 cents. As a result of new income groups being willing to purchase at lower prices, the amount of meat which the 750 families in Table 23 would purchase increases from 310 pounds at \$1.10 to 1,300 pounds if the meat is selling at 30 cents per pound.

Many cases from everyday life can be noted which illustrate the

entrance of the lower income classes into the list of purchasers of goods as the price falls. When radio receiving sets first became practicable, their price was so high as to limit their use to the homes of the wealthy, but in the 1930's, when prices fell as low as \$10 or \$20 a set, even the poorest families bought them. The same thing happened with television sets, also, which did not have a mass sale till the price began to fall below \$200 in 1948 and 1949.

The third factor which makes it necessary to lower the price of a good in order to sell more is the differences in the valuation or desire for that good by different persons. Because of native and acquired differences between people, the desire for even one unit of a good varies considerably from person to person. One boy likes a top, another a kite. One man prefers golf, another tennis. Or one person desires apples, another grapes. Obviously, if a man does not care much for an apple, he will not be willing to pay a high price for it; but, if the price falls sufficiently, he may become a purchaser. Thus those people who do not put a high valuation on a certain kind of goods will, nevertheless, become actual purchasers if the price falls sufficiently.

MARKET SUPPLY AND MARKET PRICE

General Nature of Market Supply. As is true of so much of the terminology of economics, the word *supply* with reference to the market is used with various shades of meaning, both in current speech and among economists. It usually conveys either the idea of quantity available or already produced, or refers to the seller's attitude toward selling this existing quantity. Strictly speaking the first of these meanings is accurately rendered by the word *supply* by itself, while the second would be more correctly set forth by the terms *supply schedule* or *supply curve*.

In the short-term competitive market adjustment which we are here considering, the cost of production does not enter into the determination of the supply schedule, for we are assuming the supply is already in existence. If the good is one that may be held for a while after being produced, as is the case with meat that can be frozen, it is natural to expect that the higher the price, the more will be offered for sale. The supply schedule is a picture of the selling attitudes of those who have the good. Such a supply schedule is presented in Table 24.

Thus only 200 pounds will be offered at 40 cents per pound, but if the price were 90 cents, 1,100 pounds would be offered, and so on.

In the case of a highly perishable good, like fresh strawberries, the sellers must in effect take whatever price is offered in the market, because if they try to hold on, their product will spoil and they will lose everything. In the graphic representation of supply, when there is a

TABLE 24. A HYPOTHETICAL SUPPLY SCHEDULE FOR MEAT

Price per Pound, Cents	Amount Offered, Pounds
30.....	100
40.....	200
50.....	325
60.....	475
70.....	760
80.....	900
90.....	1,100
100.....	1,300
110.....	1,550

fixed quantity of a highly perishable good the situation is represented by a straight line perpendicular to the horizontal axis, the axis along which quantity is measured. This indicates that a change in price will not bring forth a change in quantity.

The more conventional case, wherein increases in supply are possible with increases in price, is shown in Fig. 14, which is a graphical representation of Table 24. This curve, sloping *upward* to the right, delineates such a situation, and customarily short-run supply curves are drawn

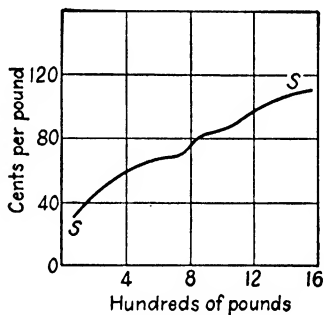


FIG. 14.

FIG. 14. The supply for meat (hypothetical).

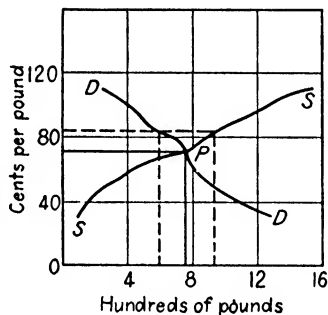


FIG. 15.

FIG. 15. The determination of the market price of meat (hypothetical case).

in this way. We shall find, however, that many types of long-run supply curves have quite different shapes and slopes.

The reasons for the upward slope of the supply curve are several. In the short run, it may be due to the fact that some suppliers have storage facilities and can wait for higher prices. Some may be short of cash and anxious to sell to obtain ready money, while others can afford to wait, being willing to sell only at high prices. Suppliers differ in their estimate of the market situation even in the short run; those who be-

lieve prices will go down are more eager to sell than those who do not. In every one of these cases more sellers are attracted by high prices, making for a greater supply as prices go up.

Market Price. Market price is determined by the interaction of demand and supply. Now that both of these market forces have been presented graphically, it will be easier to study their interaction with the aid of graphs. In Fig. 13 is shown the demand curve for meat. Let us now assume that the supply is a fixed quantity of 900 pounds. A perpendicular raised from the point on the horizontal axis which measures 900 pounds cuts the demand curve at T . At this point buyers are willing to purchase the amount offered, that full amount but not more, and therefore the market price would be at this point represented by the distance TN , or 52 cents.

In Fig. 15 the demand curve for meat is again presented, this time in relation to a supply curve. We are now assuming, as is more accurate, that meat may be held for a certain length of time if the price is not satisfactory, and that therefore the amount offered will vary with the price. The two curves intersect at P , at which point the amount offered and the amount purchased would be the same. In other words, the price of 70 cents will clear the market.

The strong tendency for market price to be located at the point where the quantity offered and the quantity purchased are equal is emphasized by noting what would happen if the price were higher or lower than P , or the actual quantity offered were greater or less than 760 pounds. If in Fig. 15 suppliers put only 600 pounds on the market instead of 760 pounds, the price will rise, since for 600 pounds buyers are willing to pay 86 cents a pound. However, as the price moves upward toward 86 cents, suppliers proceed to increase the quantity they offer on the market, for they are willing to sell about 950 pounds in case the price reaches 86 cents. But as sellers increase the quantity, they find that buyers will take the increased quantity only at lower prices, forcing price back toward 70 cents. Suppliers cannot always immediately stop the increase in quantity available, and usually the increase continues until the price is forced below P . Suppose that the quantity is increased to 950 pounds. For that quantity buyers are willing to pay only 50 cents per pound. However, the sellers are not willing to supply 950 pounds at a price of 50 cents but only 325 pounds, and they will undertake a reduction in quantity. Any variation of the price from 70 cents (the equilibrium price) or the quantity from 760 pounds will set in motion forces tending to bring price back to the point where quantity offered and quantity taken are equal.

The promptness and accuracy with which actual market prices will

correspond with the price at which offers and purchases are in equilibrium depend on the degree to which both buyers and sellers are actively and intelligently seeking the price which is best for them. The best price for sellers is a high price, and the best price for buyers is a low one. If farmers are fully informed concerning the price of wheat, as they may be through newspaper and radio reports, they should not accept a price appreciably lower than the maximum which the buyers will pay. On the other hand, farmers who have dairy cows for sale find that accurate information on the market situation is much more difficult to obtain, and it is therefore probable that cows are often sold for less than could be obtained in a market in which the sellers were accurately informed. The wholesale buyers of farm produce are, as a whole, better informed concerning what is being paid and the general demand and supply situation than are the farmers, which in a particular transaction may result in a price slightly lower than that justified by the fundamental supply and demand conditions. In contrast, consumers as a whole are inexpert and uninformed buyers, buying without accurate knowledge of the merits of goods and without complete information of what prices are being asked at other stores. People become accustomed to trading at one store and do not always "shop around" to find the lowest prices. The result of the varying degrees of information existing in various markets is that, in the market for such great agricultural staples as wheat, there is only one price, determined accurately by supply and demand, but in other markets, as the retail market for many articles of clothing, differences in prices between different sellers are frequent and often continue for some time. These differences are in part due, however, to the fact that in high-priced stores buyers often are purchasing, not only the goods, but certain features of service, including a pleasant and distinctive place in which to do their shopping and certain guarantees of quality.

Marginal Buyers and Sellers.¹ The question may be asked, "Why don't those sellers who want high prices find the buyers who are willing to pay them and reap the advantage, and likewise why don't the buyers who are willing to pay only low prices seek out the sellers who are willing to accept them?"

What prevents this from happening is the force of competition, which as buyers compete with each other pushes prices up, and as sellers compete pushes them down. Of especial importance in the price-making process are the marginal buyers and sellers, those who at any given price can be induced to buy by just a slight lowering, or to sell by just a

¹ This section follows the exposition of A. I. Meyers, *Elements of Modern Economics* (rev. ed., Prentice-Hall, New York, 1941), pp. 105-107.

slight raising, of the price. To attract these people into the market the sellers must lower their prices and the buyers raise theirs till the equilibrium point, where the market is cleared, is reached. Thus those who were willing to sell for less or buy for more than this are benefited by the necessity of inducing the marginal traders to buy or sell.

Those buyers who would have paid more and those sellers who would have accepted less than the actual price are sometimes called *intra-marginal traders*. For them to benefit, they must know what is going on in the market, at about what level the price will settle. This calls to attention a requirement for effective competition not previously mentioned. This is the widespread information concerning market conditions. If the participants in a market do not have a good idea of what is going on, competition is hindered or rendered completely ineffectual. In effect, ignorance could exercise an influence like that of product differentiation, breaking up a market into small segments, each with so few buyers and sellers as not to be competitive.

Because of ignorance on the part of buyers as to the seller's real intentions, the first sales in a market may be quite far from the equilibrium price, but as competition for the marginal sales and purchases take place and information spreads regarding the levels at which trading is taking place, the price approaches the point of equilibrium.

DEMAND FURTHER CONSIDERED

Elastic and Inelastic Demand. Demand curves differ in the steepness of their slope; this shows that the demands for various goods differ in the extent to which the amount purchased will change with price changes, or, in the language of economics, they differ in their elasticity. A demand may be either elastic, or inelastic, a distinction determined primarily by the degree to which the quantity purchased will change with a price change. Strictly speaking, all demands are to some extent elastic, because people will buy slightly more of all goods as prices are lowered. But for the sake of convenience, the distinction between an elastic and an inelastic demand is often drawn through the use of the concept of *unit elasticity*. *When a change in the price of a good results in no change in the total outlay which buyers will make for the aggregate of all the goods sold, the elasticity of demand for that good is unity*, as is true with the demand represented by *DD* in Fig. 16. In such a case the rate of change in quantity purchased just offsets the rate of change in price, so that the increased quantity sold at a lower price per unit brings in the aggregate the same amount of money as the lesser quantity would bring at a higher price per unit.

When a small decline in price brings about such a relatively large increase in quantity purchased that the total outlay for the good in-

creases, as shown in DD' in Fig. 16, the demand is said to be *elastic*. Obviously, in such a case an increase in price brings a decrease in the total outlay. Generally the commodities for which the demand is elastic have one or more of the following characteristics. First, goods in the class of luxuries tend to have an elastic demand, for a small decrease in their price will bring these articles within the reach of new buyers of the lower income groups. Thus the greater the inequality in the distribution of income among consumers, the more elastic will be the demand for luxuries. If the price of these commodities is increased, the many buyers with small incomes will then cease to purchase. Second, commodities for which there are many substitutes and which can themselves substitute for others will ordinarily have an elastic demand. As the price of butter drops, it is used not only for table purposes but in cooking as well. On the other hand, when the price of such a commodity rises, other goods will be substituted for it, as when oleomargarine and other butter substitutes are used in larger amounts as the price of butter rises. As a result changes in the price of butter bring large changes in its consumption, indicating an elastic demand.

Demand is regarded as *inelastic* when a large decline in price brings such a small increase in the quantity bought that the total money spent for the goods declines, as is illustrated by DD'' in Fig. 16. Commodities for which the demand is inelastic have the opposite characteristics to those listed above. First, they are usually goods which are generally spoken of as necessities, consumers buying approximately the same amount whether the prices are high or low. Second, they are often commodities which are usable for only one purpose. They do not have the supporting effect of diversion to new uses as the price falls. When the price rises there is no important substitute to which buyers may turn, and hence the purchases of this article decline but little. Staple food and clothing materials are examples of commodities having comparatively inelastic demand.

Thus in the case of sugar, consumption increases by only 0.3 or 0.4 per cent for each 1 per cent fall in price,² indicating a quite inelastic demand. In the case of wheat likewise an increase in the United States supply of 1 per cent will reduce the price by 2 per cent.³

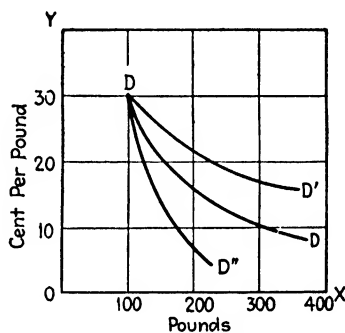


FIG. 16. Elastic and inelastic demand curves.

² Henry Schultz, *The Theory and Measurement of Demand* (University of Chicago Press, 1938), p. 229.

³ *Ibid.*, p. 400.

An excellent example of the large changes in price which occur with small changes in the supply of a commodity for which demand is inelastic is afforded by the history of the potato crops of 1935, 1936, and 1937. In the first of these years the United States crop amounted to 379 million bushels, and the average farm price was 59 cents per bushel. In the next year, the crop was 324 million bushels, a reduction of not quite 15 per cent. So inelastic is the demand for potatoes that the price went up in consequence to \$1.14 a bushel, an increase of almost 100 per cent. Again in 1937 the crop went back almost to its 1935 size, reaching 376 million bushels, and the price responded by falling back even below the 1935 level to 53 cents. For the small crop of 1936 farmers received a total of 370 million dollars, for the not so much larger crops of 1935 and 1937 they received 225 and 199 million dollars respectively.

Causes of Changes in Demand. The factors which explain changes in demand (in the schedule sense) can be divided into those affecting all or very wide classes of commodities and those which affect specific commodities. The line of demarcation between these cannot, however, be very sharply drawn.

An example of a factor affecting demand for a large group of, if not all, commodities is the growth of population. There are more mouths to feed, more people to house and clothe, and, therefore, there is a greater demand for goods in general. The effects of population growth on the demand for farm products is fundamental in explaining the increase of land values in the United States. Because changes in population are slow, their effect on particular prices is hard to measure, the more so as over a period of time prices can be influenced also by variations in the supply available, the cost of production, and shifts in the public's attitude.

One of the causes of shifts in attitude which affect demand over a large area is the changes in people's living and working habits. During the last generation the proportion of people living in apartments or small homes has greatly increased. Therefore there has been a shift upward (to the right) in the demand for light, compact furniture and a downward shift in demand for heavy, "overstuffed" furniture. Proportionately more people work at sedentary than at active occupations, a fact which has stimulated the demand for lighter and more palatable foods.

Changes in per capita real income affect the total demand for all goods, but the effect is quite different for some commodities than for others. In general an increase in income is accompanied by the expenditure of a larger proportion of that income for nonnecessaries. Thus the periods of prosperity from 1922 to 1929 and after the Second World War were marked by a high demand for such things as automobiles and travel, amusements, expensive clothing, and so on. Higher per capita income

also enables people to include more of the high-priced foods in their menus. Such shifts in demand as do occur with changes in the income of consumers may be only temporary if the cause is the alternation of prosperity and depression with the business cycle, or may be more permanent if the cause is the general tendency for a country to be more productive per capita, as has been true in the United States in the last few decades.

The desire for goods varies with the seasons of the year. When hot weather strikes the large cities, the demand for fruit increases relatively. During cold weather the demand for the heavier cuts of beef grows. Examples might be multiplied, with illustrations drawn from many fields of industry.

Consumers' attitudes toward particular goods has also been materially affected by education and propaganda. The spread of public education—if that term is used in a broad sense, including knowledge of nutrition, the influencing of aesthetic tastes, and so on—has changed the demand for various products, stimulating the purchase of some goods and restricting the buying of others. The type of clothing, furniture, and amusements people desire has been materially influenced by moving pictures. The general increase of knowledge of nutrition has made necessary certain adjustments in agriculture, particularly through the emphasis upon vitamins and the proper number of calories and the balance between proteins and carbohydrates, which has influenced consumers' demand in favor of fruits, vegetables, and dairy products. The starchy foods, such as potatoes and bread, have consequently become less important in the diet.

More important, probably, as an influence on the demand for particular goods is the conscious effort of sellers to persuade consumers to buy their products, through advertising and other aggressive sales methods. The modern producer need not assume that the demand situation is beyond his control, although it is true that he can rarely look forward to making a revolutionary change in consumers' demand, though even this has happened on occasion. The tremendous advertising campaign by Lucky Strike cigarettes in the 1920's, directed to persuading women that smoking was as respectable for them as for men, was eminently successful in overcoming the strongly held prejudice that it was somehow wrong for a woman to smoke. This was undoubtedly largely responsible for a real upward shift in women's demand for cigarettes.

In the case of many agricultural commodities, advertising probably cannot materially influence the consumers' attitude; yet the California Fruit Growers Exchange has capitalized upon the popular interest in nutrition by advertising the health-giving qualities of citrus fruits.

Many other large cooperatives, such as California Sun-Maid Raisin Growers Association and the Land O' Lakes Creameries, Inc., have attempted to influence demand for their specific products with varying degrees of success.

A limiting factor in the advertising of farm products to the consumer is the large portion of agricultural products which must be processed and hence lose their identity before reaching the consumer (processors advertise, of course, as witness the makers of breakfast cereals). Advertising and persuasive salesmanship have very little effect in influencing the purchases by experts, such as the buyers of wheat for milling and of fruit for canning. But to the extent that farmers undertake processing of their own products, as in the case of butter and canned fruits, they have the opportunity to advertise, provided that their product is the type of product for which the consumers can be made to choose between the brand of the advertiser and those of competitors.

Fundamentally more important in bringing about shifts in demand for particular products has been the steady advance in technology which has marked the period since the beginning of the Industrial Revolution. As new products have been made available to consumers, demand for them and commodities associated with them has shifted from the previously used products, the prime modern example being, perhaps, the shift in demand from horse-drawn vehicles to automobiles.

Income Elasticity of Demand. Because of the great increases in national income that have taken place in recent years, it is of particular interest to examine in somewhat greater detail the effect on demand of one of the causes of change briefly discussed above—shifts in per capita income.

About a century ago, a distinguished German statistician, Ernst Engel, investigated the relationship of consumption to income and formulated his conclusions in the form of four laws, which collectively have come to be known as *Engel's law*. These so-called laws were based on statistical studies of how families with different incomes spent those incomes. The four laws presented were as follows: (1) the greater the income, the smaller is the percentage of the total which is spent for food; (2) the percentage of the total income which is spent for clothing remains about the same, regardless of the size of the income; (3) the percentage spent for housing remains invariably the same, regardless of the income; (4) the percentage spent for miscellaneous items increases with increases in the total income.

More recent statistical studies have revealed that the first of these so-called laws is almost invariably true for any fairly large group of persons, but that the other three need considerable qualification.

TABLE 25. AVERAGE EXPENDITURES OF AMERICAN CONSUMERS* IN SEVEN INCOME GROUPS FOR MAIN CATEGORIES OF CONSUMPTION, 1935-1936

Income Group	Average expenditure per consumer unit for															
	All items	Food	Shelter			Clothing	Transportation		Medical care	Recreation	Personal care	Tobacco	Reading	Education	Other items	
			Total	Housing	Household operation		Furnishings	Automobile								Other
Under \$780	\$550	\$236	\$178	\$115	\$54	\$9	\$47	\$16	\$11	\$20	\$9	\$12	\$10	\$6	\$2	\$3
\$780-\$1,450	1,056	404	335	199	108	28	102	57	19	41	28	22	23	12	7	6
\$1,450-\$2,000	1,534	522	490	283	157	50	156	121	25	68	49	32	32	17	12	10
\$2,000-\$3,000	2,039	626	650	370	212	68	223	201	30	94	75	43	40	22	22	13
\$3,000-\$5,000	2,818	773	920	513	315	92	337	299	40	138	119	56	50	29	39	18
\$5,000-\$15,000	4,714	1,047	1,615	899	564	152	607	537	77	250	243	91	65	44	98	40
\$15,000 and over	12,563	2,044	4,391	2,437	1,612	342	1,775	1,460	421	724	781	197	118	101	444	107

* Includes all families and single individuals, but excludes residents in institutional groups.
Source: *Consumer Expenditures in the United States*, Table 3A.

TABLE 26. PERCENTAGE OF INCOME SPENT BY AMERICAN CONSUMERS* IN SEVEN INCOME GROUPS FOR MAIN CATEGORIES OF CONSUMPTION, 1935-1936

Income Group	Percentage of income for															
	All items	Food	Shelter			Clothing	Transportation		Medical care	Recreation	Personal care	Tobacco	Reading	Education	Other items	
			Total	Housing	Household operation		Furnishings	Auto-mobile								Other
Under \$780	116.7	50.2	37.6	24.4	11.4	1.8	10.0	3.3	2.4	4.3	1.8	2.5	2.2	1.3	0.5	0.6
\$780-\$1,450	98.1	37.5	31.1	18.5	10.0	2.6	9.5	5.3	1.7	3.9	2.6	2.1	2.1	1.2	.6	.5
\$1,450-\$2,000	91.3	31.1	29.2	16.8	9.4	3.0	9.3	7.2	1.5	4.0	2.9	1.9	1.9	1.0	.7	.6
\$2,000-\$3,000	85.5	26.3	27.3	15.5	8.9	2.9	9.4	8.4	1.3	3.9	3.1	1.8	1.7	.9	.9	.5
\$3,000-\$5,000	77.1	21.2	25.1	14.0	8.6	2.5	9.2	8.2	1.1	3.8	3.2	1.5	1.4	.8	1.1	.5
\$5,000-\$15,000	60.4	13.4	20.7	11.5	7.2	2.0	7.8	6.9	1.0	3.2	3.1	1.2	.8	.6	1.2	.5
\$15,000 and over	38.4	6.2	13.4	7.5	4.9	1.0	5.4	4.5	1.3	2.2	2.4	.6	.4	.3	1.4	.3

* Includes all families and single individuals, but excludes residents in institutional groups.

Source: *Consumer Expenditures in the United States*, Table 4A.

The most notable and comprehensive of these studies, "Consumer Expenditures in the United States, Estimates for 1935-1936,"⁴ from which Tables 25 and 26 are taken, shows that the proportion of expenditures for food to total income is extremely high in the low-income groups⁵ and falls steadily as income increases, though it is small only for the very highest income classes.

Clothing expenditures, however, did not conform to Engel's law. Here we have a rather irregular pattern, marked by a falling percentage spent on clothing in the classes above \$5,000. For shelter as a whole, including expenditures for housing, household operation, and furnishings, the pattern is like that for food, a steady decline in the percentages spent, as we go from the low- to the high-income groups.

Nor do miscellaneous expenses fulfill Engel's expectations. In total, the percentage of income spent on nonnecessities rises from the low to the middle groups and falls off in the high groups. For certain individual items like tobacco, which is as much of a necessity as food to those habituated to its use, the pattern is the same as for food.

It will be noticed that in the higher income ranges, the total of consumption expenditure comes to a good deal less than 100 per cent of income and at the very highest levels, to only 50 per cent of income or less. The difference between consumption expenditure and income is accounted for by taxes, gifts, and savings. It is the large amounts going for these purposes that account for the fact that the proportion of income expended for food, clothing, housing, etc., is so low for the higher income classes.

Income elasticity of demand refers to the shifts in demand that take place as a result of changes in income. The Consumer Expenditures Studies furnish us the means of estimating what will happen to the demand for the main categories of consumers' goods as the income of an individual family or of the nation as a whole rises and falls.

Before considering this matter, it should be understood that, though the percentage of income spent on food and shelter falls with rising income, the total money expenditure on these items, as shown in Table 25, rises, though not proportionately to income. Indeed as income rises, the total amount spent for every main category of consumption increases. Therefore given a large rise in the income of any family or of the nation as a whole (assuming that the increase is not taxed away), we can expect

⁴ The National Resources Planning Board, Government Printing Office, Washington, 1939.

⁵ In the case of families with annual incomes below \$1,000, expenditures add up to more than 100 per cent of income, because income is eked out by gifts or borrowing. Therefore for these income classes, food or any other category of expenditure is a higher percentage of income than of total expenditures.

an increase in the demand for every class of consumers' goods. The increases will vary greatly, however, from one class to another. Presumably the increases for the nonnecessities on the whole will be much greater than for the necessities.

Demand for Food. Since food is among the necessities, the demand for other things will presumably increase more than the demand for food as national income increases. This tendency may partially explain why, as pointed out in Chap. 1, the farmer's share of the national income has declined faster than the percentage of farm population in the total population, as national income has increased.

The increase in demand for food that is associated with increasing income is only partly a demand for more pounds of food and more calories, although families in higher income groups do eat considerably more, in terms of both pounds and calories, than do those in the lower income groups.⁶ It is also a demand for better packaged, more highly refined, and more elaborately processed products. To some extent, then, although not altogether, increased demand for food is a greater demand for the services of the food processor and retailer rather than the farmer. The enormous rise in national income after the Second World War lifted demand for the more expensive, high-protein foods to unprecedented heights. When a consumer wants a pound of meat or a pound of milk in place of a pound of potatoes or of grain, that implies a great increase in the demand for the products of farm labor, land, and capital, for it takes several pounds of grain to make one pound of milk or meat.

One of the most interesting phenomena of the great postwar prosperity in this country was the apparently relative increase in the demand for food as compared to demand for other things. This, it must be admitted, is somewhat contradictory to the position taken in the preceding paragraphs, which, it is fair to say, represents the opinion of most students of consumption. What actually happened, however, was that in 1946 and 1947 the proportion of disposable income (*disposable income* is income after taxes) spent on food was higher than in any previous peacetime year.⁷ This can be explained in part by the continuance of rent control, which kept housing expenditures down, and the shortage of automobiles and other durable consumers' goods, all of which made more than a normal proportion of income available for expenditure on food. The increase in food expenditures, however, cannot wholly be thus explained, and it may be evidence, contrary to expectation, that demand for food, relative to the demand for other things, actually shifted upward in 1946 and 1947, as national income rose.

⁶ W. W. Cochran, "High-level Food Consumption in the U.S.," U.S. Department of Agriculture, *Miscellaneous Publications* 581, 1945, p. 10.

⁷ See p. 609, Chap. 26.

Some Actual Demand Changes. As a net result of the forces described above, the demand for various farm products has undergone distinct shifts in the last generation. The accompanying chart, Fig. 17, points to some of the most significant changes in per capita consumption. Al-

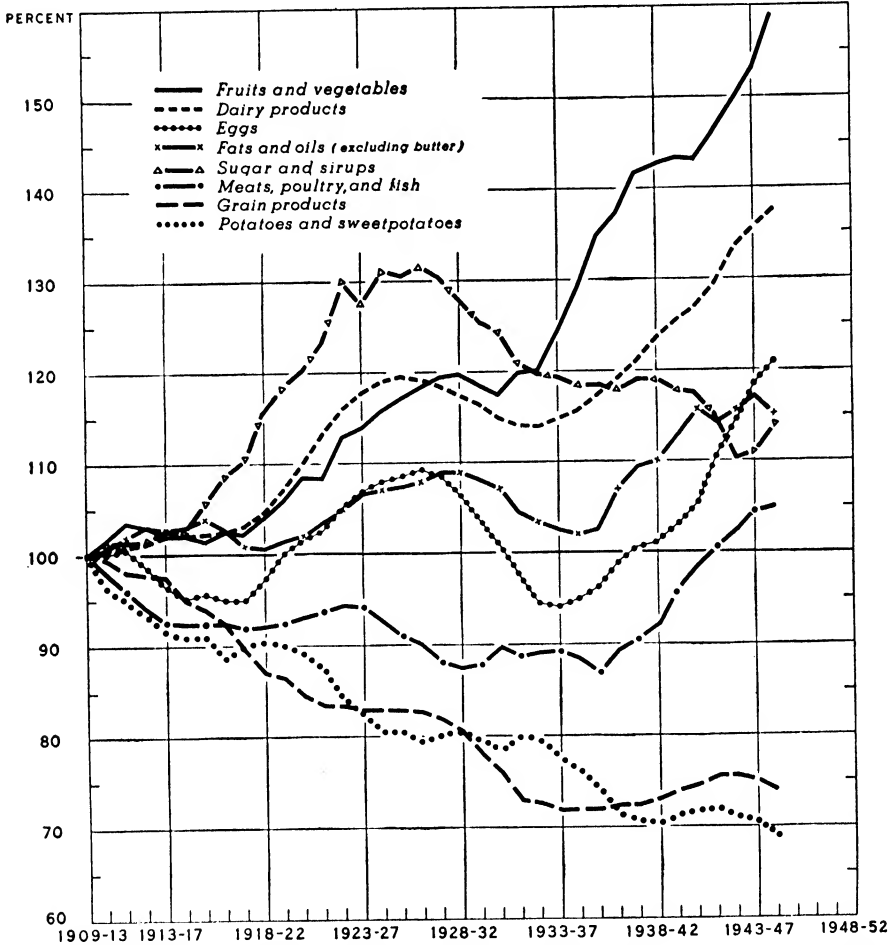


FIG. 17. Trend in per capita consumption of foods by groups. Source: Neg. 43787, BAE, USDA.

though the quantity consumed is covered by these data without regard to price, it is safe to conclude that most of these shifts do not represent consumption changes due to price increases or decreases but rather genuine shifts in demand. In other words, such changes in human wants have taken place that the whole demand curve for each of the products listed in Fig. 17 is shifted.

Especially notable is the declining consumption of grains and sweet potatoes, reflecting the general increase in real income and living standards which causes people to turn from coarser, cheaper foods to finer, more expensive ones. This shift is also clearly shown in the upward trend in the consumption of the "protective" foods, fruits and vegetables (particularly the latter, not shown separately on the chart) and dairy products. The recent strong upward trend in meat and egg consumption, after the former in particular had been declining for many years, is an eloquent tribute to the effect on demand of an increase in real income. Meat is far and away the food most preferred by Americans, and in the interwar years they did not have the wherewithal to buy all the meat they wanted.

These shifts in consumption patterns have obvious effect on production, on the types of agriculture carried on in the various regions of the country. In response to the increased demand for citrus fruits, there was before the First World War a great expansion of citriculture in California, in the twenties in Florida, and thereafter in Texas. The declining demand for potatoes means that relatively to other areas, the value of the products of Aroostook County, Me., and of Idaho will decline. As the abnormal export demand for wheat following the Second World War falls off, we may expect to see this grain decline in relative importance as a crop, in consequence of the lessened domestic demand for food grains. On the other hand, if demand for meat and milk continues to expand (already a 3-billion-bushel corn crop is considered normal, against 2.5 billion bushels before the war), the areas specializing in corn production will benefit accordingly.

Joint Demand. In its simpler sense the term *joint demand* refers to demand for a combination of items, for which individually there would be no demand at all or a much weaker demand than exists for the combination. Ham-and-eggs and bread-and-butter are the classic examples.

The demand for any finished product can, however, also be considered a joint demand for all materials and services which have contributed to the form, time, and place utility which this good possesses at the time it is bought by the consumer. Into the completed form utility of manufactured food products go not only the basic raw materials of the farm but also the use of machinery, labor, minerals (such as salt), and probably supplementary farm products. Transportation agencies contribute place utility, and merchants and warehouses contribute time utility. The housewife's demand for food is not only the demand for the raw materials of the farm but also for flavorings, containers, machinery use, labor, and the services of transportation and storage. Thus the demand for food products is a joint demand for all the goods and services which go to make up the food product delivered to the house-

wife. A similar analysis holds true for clothes and the process of changing cotton, wool, and flax into cloth or clothes ready for sale in department stores.

The joint nature of the consumer demand for products based on raw materials of the farm is important for three reasons.

First, wide variations may occur in the price of the basic farm product without material changes in the price the consumer pays, particularly if the value of the raw material is a small portion of the price the consumer pays. Large changes in the prices of farm products can take place without materially affecting the retail price of the finished product. Thus, a pound loaf of bread selling for 11 or 12 cents at retail contains about 12.5 ounces of flour, made from about 17 ounces of wheat. With wheat at about \$2.50 a bushel at the farm, about 4.5 cents worth goes into the pound loaf. A halving of the price of wheat would, assuming other costs remained the same, produce only a 12 per cent reduction in the price of bread. By the same token, the margin between farm price and retail price is large enough to absorb a considerable increase in wheat prices. Though wheat prices rose steadily all through 1947, it was not till the end of the year that the retail price of bread was raised. Thus, the price of wheat was able to rise without causing any reduction in the domestic demand for it. The example of bread illustrates a principle that holds true to a greater or less extent of the relation which exists between the price of all farm products or raw materials of mines and forests and of the price of the finished products as the consumer buys them.

In the second place, the prices of the other goods and services which are demanded jointly with farm products in the form of a finished commodity are in general less flexible and respond more slowly to competitive forces than do the prices of farm products. Among these are railroad freight rates, fixed by regulatory commissions; wages in urban industries, often set by agreement for a year or more and which, therefore, move slowly; and rents, which are often fixed by long-time leases.

When there is a depression and people's incomes, and consequently their demands, fall, the farmer is, as it were, hit twice. Total expenditure for his products is reduced, and because the rigid costs of transportation, processing, and retailing fall slowly, the percentage of total food expenditure going for farm products is reduced. The farmer gets less of less. Thus at the height of the prosperity period in 1929, total consumer expenditure on food amounted to 19.7 billion dollars and on the average the farmer got 42 cents out of each dollar spent at retail. At the depth of the depression in 1932, total food expenditure was 11.4 billion dollars and the farmer got only 32 per cent of this much smaller sum. On the other hand, when demand and prices rise with prosperity,

farm prices also move faster than the costs involved in getting goods to market. As a result in 1946, at the time of postwar prosperity, total food expenditures were about 43 billion dollars and farmers received about 53 per cent of this enormous sum.

Third, the changes in prices of important goods or services added to the raw materials of the farm in the process of making the finished article may considerably affect the price of farm products. For instance, a marked change in transportation rates and labor costs could influence the price of finished commodities of elastic demand to the point that the volume sold would vary considerably. The consequent change in the volume of the finished good sold would materially raise or lower the price of the basic raw material of the farm. Thus, fluctuations in the price of raw products of the farm may occur even though there has been no change in the supply of those raw products or in the consumers' demand for the finished product. Professors G. F. Warren and F. A. Pearson have contended that the failure of the prices of those goods and services which enter into the processing and marketing of farm products to decline in the years after the First World War was a potent factor in the agricultural depression of 1920 to 1922.

Derived Demand. The demand for the factors of production and for any goods before they are in the form, place, and time desired by consumers is not an immediate reflection of consumer demand, although it is derived from that demand. Every processor or merchant who purchases goods does so with his eye on the consumers' desires. Farmers rarely produce the products in the form in which they are to be bought by the consumer, nor do they take the products to the place at which the consumer wants them or undertake to have their products available at the particular time at which the consumer wants them. The farmer feels the consumers' desires only as they are "telegraphed" back to him through the intermediary agencies of processors and merchants. The prices which these processors and merchants will pay the farmer and the quantity they will buy at these prices are derived from the consumers' attitude toward these commodities. In case there arise imperfections in the "telegraphing" of the consumers' demand to the farmers, due to friction in the working of the forces of competition, differences may occur among the fluctuations of farm prices, wholesale prices, and retail prices. The degree to which these imperfections actually occur will be discussed in later chapters.

THE STATISTICAL ANALYSIS OF DEMAND

Hypothetical versus Statistically Determined Demand Curves. In the preceding pages demand has been discussed almost exclusively in terms of assumed demand schedules and curves. The major reason for

this practice is that exact measurements of demand are difficult and have seldom been accurately accomplished. Even though the discussion of demand curves is largely based on hypothetical cases, this fact does not belie their significance in understanding the fundamental nature of price-making forces. Moreover, statistical analysis has substantiated the earlier theoretical study of demand.

Wherever possible, sellers should and do attempt to obtain as exact an idea of the elasticity of demand for their product as possible. One important point to be impressed upon farmers individually and collectively is that the demand for most farm products is relatively inelastic. Cooperative associations must be guided in their sales policies by a study of demands for their products and of the factors causing demands to shift.

It should be remembered in interpreting demand as determined by statistical studies that these curves are based on historical data and hence do not necessarily apply to the present or the future. This is especially true in trying to project trends based on analyses of prewar experience into the postwar period. Because of the unprecedented level of income and employment and the piled-up shortages which resulted from the Second World War, the intensity and direction of demand for many commodities, including food, are quite different from anything we have ever known before. Nevertheless, things are not so different as to prevent statistical studies from giving useful ideas as to the elasticity of demand for a given commodity and some knowledge of the factors which cause demand to change.

Problems in Statistical Study of Demand. In one respect statistical demand curves are of a different nature than theoretical curves. The theoretical curve refers to a range of possibilities—what buyers will pay for varying quantities—at one point in time. It is impossible, short of having a continuous public opinion poll, to find out what consumers would pay at any one moment for different supplies of a commodity. Therefore, to measure responses to varying supplies, different points in time have to be used.

The attempt to eliminate insofar as possible the influence of forces operating over time, like changes in the general price level, so as to show as closely as possible what buyers actually will pay for different quantities at the same time, is the first general type of problem faced in drawing a statistical demand curve. Since the statistical curves cannot, for the reason given earlier, truly represent the demand curve of pure theory and because what is shown by them is a series of prices associated with supplies of different magnitudes, they are often and probably more correctly referred to as "price-supply" curves rather than demand curves.

Further, for two reasons, these statistical curves cannot be taken strictly as pictures of the consumers' demand. First, the quantity data

used are frequently data of quantity produced rather than quantity consumed. Often not all the production is harvested or, if harvested, is not used for human consumption but for animal food or for by-products. Second, the price data used are farm prices or wholesale prices usually, rarely retail prices. In order to make clearer the idea of demand and to present the principles underlying the statistical analysis of demand, an example of such an analysis is presented below.

The Demand for Potatoes. Figure 18, which is reproduced from Professor Shepherd's book, *Agricultural Price Analysis*, shows the relation-

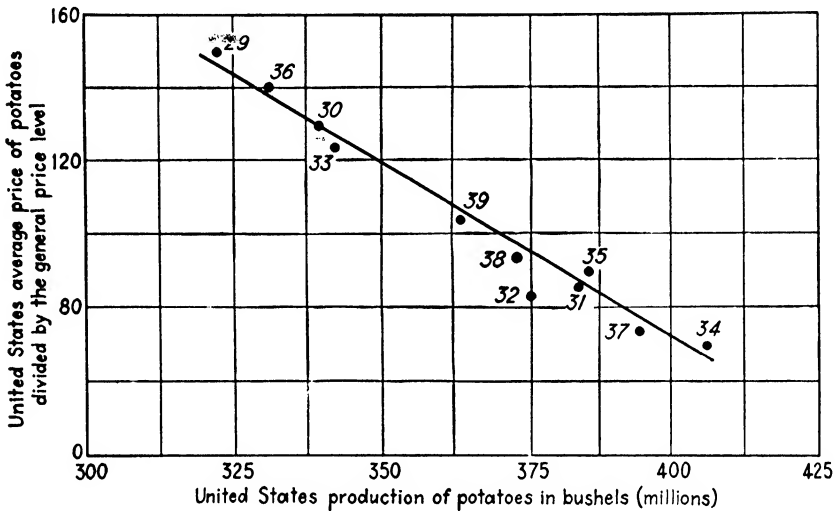


FIG. 18. Potatoes: U.S. average farm price December 1 and total production 1929-1939. This is a simplified example of a statistical demand curve. More complicated and technical analyses show the curve has a concave curvature at the lower end. (G. E. Shepherd, "Agricultural Price Analysis," Iowa State College Press, 1947, p. 56. Used by permission of Prof. Shepherd and Iowa State College Press.)

ship between the Dec. 1 price of potatoes divided by the wholesale price index (after certain adjustments which need not concern us) and the season's supply of potatoes. The reason for the division is to remove the influence of the general price level from potato prices and isolate the influence of supply on price. It is clear, then, that consumers pay less per bushel when the supply is large, and that the relationship between the price and supply conforms to the theoretical expectation. Since this is a picture of an actual, not a theoretical, case, the dots representing the relationship existing in a given year, denoted by the appropriate numeral, do not fall exactly on the line which pictures the average of the relationships in all the years analyzed. The scattering of the dots about

the curve gives an idea of how accurately the curve represents the price-quantity relationship.

If the relation between the supply and price of potatoes were unchanging, then the curve shown could be used to predict what the price would be once the supply were known. A season's supply of 375 million bushels would (according to the curve) bring a price of 95 cents per bushel, which, multiplied by the wholesale price index for the period under consideration, would give the actual price. The multiplication is necessary to compensate for the previous act of division.

Unfortunately there is no guarantee that this process will work out successfully, especially in a time of price control or rapid price change like the period since 1940. In fact, demand conditions since the Second World War appear to be quite different from those prevailing before and therefore the dots showing the supply-price relationship for recent years would probably not fall on the line. Even in a period when economic conditions are relatively stable, the statistical curve may not provide a certain basis of prediction. Any number of factors, such as an unexpectedly large supply of a competing crop, might bring about a relationship between supply and price different from that shown by the curve.

It will be noted that the demand for potatoes is inelastic, a relatively small change in supply being associated with relatively large changes in price. One of the reasons statistical demand curves sometimes do not give valid results is that the elasticity of demand for a commodity may change over a period of time. Separate curves ought to be drawn for periods wherein the elasticity of demand varies materially.

Uses of Statistical Analysis. The statistical study of demand has two practical applications. First, it forms a basis for price forecasting. When the available quantity of a farm product is known, it is sometimes possible to anticipate rather accurately the price which will prevail. Actual forecasting, however, has its limits because of errors in the data on supply and of unforeseen shifts in the whole demand curve. These shifts occur when there are large variations in the general price level and are even more pronounced—and unpredictable—when really fundamental changes take place in the level of national income and employment.

The second practical use of statistical curves is related to the first. In order to formulate intelligently any plan for supporting the price of an agricultural commodity, setting a production goal, or putting limitations on production, the government agencies concerned must have an idea of what the response of consumers will be to a given supply or how much of the product they will buy at a given price. Statistical curves, even if they are not precise, are useful, at least, in indicating the general

range of prices consumers would be willing to pay for supplies of different sizes.

MARKET SUPPLY FURTHER CONSIDERED

Elasticity of Supply. Elasticity is used with reference to supply in a manner similar to its use in connection with demand, although the idea of unit elasticity is rarely applied. An inelastic supply is one in which a large change in price brings only a relatively small change in quantity offered. Therefore, in those cases in which sellers have no choice but to sell at a price which consumers will pay for the whole quantity available, supply is totally inelastic. On the other hand, when a small change in price brings a relatively large change in the quantity offered, supply is elastic.

On page 197 in this chapter we have touched on some of the factors, like perishability, which affect the elasticity of supply in the short run, a period so short that supply could not be increased. Let us now assume that the period is long enough for there to be changes in supply. The longer the period, the more elastic the supply, because in time methods of production can be changed or new productive resources brought into (or taken out of) an industry to increase (or decrease) the supply.

Change of Supply. Just as the buyers' attitude toward buying certain quantities at certain prices changes, so may the sellers' attitude toward selling vary from time to time. Suppose that news comes of a drought in the Australian and Argentinian wheat fields; the immediate effect will be that all sellers will revise upward their estimation of the price at which they will sell. In like manner, news of the stock market crash in 1929 influenced the sellers of some goods to revise downward the prices they asked. If the supply situation is such as to be represented by a supply schedule and a supply curve, this change of sellers' price demands involves the shifting of the whole supply schedule upward if they raise the prices they ask or downward if they are now willing to accept lower prices. If a shipper has a car of cantaloupes in New York City, it will not be wise for him to hold for a higher price if shipping news shows that a large number of cars of this commodity are on their way to New York. But if the shipper learns that the very low prices prevailing have discouraged shipments, he may advisedly hold his car for a few days if the cantaloupes will remain in good condition. These changes in supply attitude are going on constantly with the news as to the demand situation or as to the quantity coming on the market in the future. Because of the frequent shifts in sellers' attitude, and the demands of buyers as well, competitive market prices are subject to frequent oscillations.

The Individual and Price. Each individual buyer and seller has his small share in determining the price of the great staples sold in a competitive market. To say that the buyer who was just induced to buy and the seller who was just induced to sell at the prevailing market price are most significant would be inaccurate. The last straw which is added and which leads to the breaking of the camel's back would be unimportant without the preceding straws loaded on that luckless camel. The last straw is the focal point of attention and so are the last or marginal buyer and the last or marginal seller. The marginal buyer's buying or refusing to buy and the marginal seller's selling or refusing to sell are potent factors in causing the price to remain or move from its position at a particular time. The general height of that price, however, is the resultant of the attitude of all the buyers and all the sellers in the market.

When we leave the great staples and turn our attention to the prices of any good in which the transactions are few and isolated, or in which the commodity is not standardized, as in the case of land, work horses, livestock for breeding purposes, etc., either the buyer or the seller through his skill as a bargainer may be able considerably to influence the actual price paid. In the case of some commodities, farmers collectively may exercise an appreciable influence on price when organized in cooperative associations. Of these cases more will be said when we come to the discussion of monopoly price.

Questions and Problems

1. State Engel's law. Show with some detail what features of it have been found most true and what features least true.

2. Define a demand curve, and explain why the demand curve slopes downward and to the right. Mention three contributing causes. Is it accurate to speak of "demand" as a quantity of goods?

3. Define a market-supply curve, and show what shapes it may take and why.

4. Distinguish between an elastic and an inelastic demand. In so doing, explain the meaning of unit elasticity.

5. What must be done to a demand curve to show a change in demand?

6. Mention some of the most significant changes which have occurred in the demand for farm products since 1914.

7. In what respects is the demand for farm products a joint demand? How does this affect prices of these products?

8. What are the causes of the difficulty in ascertaining the exact shape of the demand curve for a given product?

9. Which is the more nearly horizontal and which the more nearly vertical, the consumers' demand curve or the wholesale buyers' demand curve for potatoes? Explain why.

10. What is an elastic supply? What factors influence elasticity of market supply?

11. Point out in detail what you are able to learn about the degree of elasticity of the demand for some one farm product.

Suggested Readings

1. A. L. Meyers, *Elements of Modern Economics* (rev. ed., 1941), and K. E. Boulding, *Economic Analysis*, Chaps. 4 to 8, furnish excellent explanations of the principles of market-price determination.

2. H. Schultz, *The Theory and Measurement of Demand* (1938), is the most elaborate attempt to derive statistical demand curves for agricultural products.

3. G. E. Shepherd, *Agricultural Price Analysis* (2d ed., 1947), is a clear presentation of the subject of statistical demand curves.

CHAPTER 10

THE ADJUSTMENT OF THE INDIVIDUAL FIRM

In the last chapter we examined the way in which price is set in a competitive market during the short run. The period under consideration was assumed to be one in which the firms concerned did not have time to alter the supply. We are now going to turn to an examination of how prices are established in a longer period during which it is assumed the supply can be increased or decreased. This will involve us first in focusing our attention on the individual firm and the demand it faces, rather than on the collective supply and demand schedules presented in Chap. 9, because the adjustment over this longer period can be made clearer if the position of the individual firm is understood. Then we will analyze various aspects of cost, as we did of demand in the previous chapter, and finally extend our view over an even longer time period, one in which firms can not only affect supply but can alter their methods and therefore their costs of production.

COMPETITIVE EQUILIBRIUM

Demand Curve for Individual Firms under Competition. While the collective demand curve faced by the many sellers in a competitive market invariably slopes downward to the right, the demand curve faced by the individual seller in such a market is a straight line, as in Fig. 19. This means that, regardless of what he puts into the market, he will get the same price because his output is very small relative to the total. By definition, the market would no longer be competitive if the output of a single seller could affect prices. If all the firms, however, together should alter their supply in the same direction, then a change in the price would be necessary to clear the market because this quantity would be large enough to affect the collective attitude of the buyers.

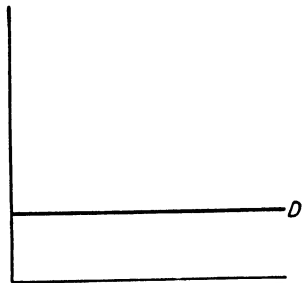


FIG. 19. Individual demand curve under competition.

Because the demand curve (sometimes called the *average revenue*, AR ,

curve) for the individual firm is horizontal, so is the marginal-revenue curve. Marginal cost, it will be remembered, is the cost of making one more unit, so marginal revenue is the return derived from selling one more unit. If 10 units can be sold for a total return of \$20, and 11 units for \$21, then the marginal revenue is \$1. In the case of the collective demand curve, which slopes to the right, indicating that a larger quantity is sold at a lower unit price, the marginal curve also slopes down and below the demand curve, as in Fig. 20, because the amount received for each addi-

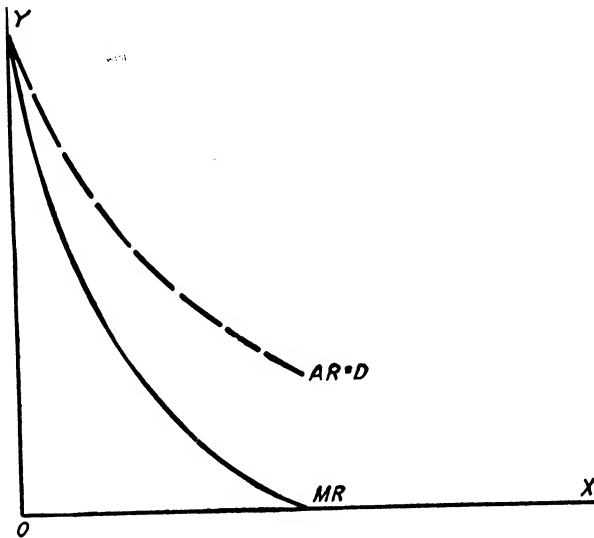


FIG. 20. The demand (average revenue) and marginal-revenue curves.

tional unit sold is less than that for the previous unit sold. This matter is discussed in somewhat greater detail on p. 252 in the next chapter.

Where the demand curve is horizontal, however, as it is for the individual competitive firm, not only is the marginal-revenue curve also horizontal but it coincides with the demand curve, because in this case additional sales do not affect the price. Each additional unit sold by the firm is at the same price as the previous ones, so the *MR* curve is horizontal and at the same level as the *AR* or demand curve.

The Equilibrium Position. It will be remembered from Chap. 5, that a firm—or firm—adjusts its production till the highest profit point is reached. To go back to the example used there (Table 15, Fig. 7), the highest profits are made at the point where marginal cost equals price. Since in the competitive case under consideration price equals marginal revenue, the highest profit is attained when $MC = \text{price} = MR$, or, to

drop the middle term, when $MC=MR$. This indeed is true in all cases, even those noncompetitive ones which we shall look into later, when price does not equal marginal revenue. This must be so invariably because as long as marginal revenue exceeds marginal cost (as in Table 15, if price were 21, while marginal cost was 16) profits can be increased by making and selling more units. When MC , however, is greater than MR , profits can be increased (or losses decreased) by reducing output. Thus the firm is under constant pressure to equate marginal revenue and marginal cost. When this is done, the individual firm is at a point of equilibrium, because it can only lose by moving from it.

Industry Equilibrium. Even if individual firms are in an equilibrium position, however, the industry of which they are part may not be. Some of the individual firms in equilibrium may be making profits. They may not be tempted to move, but the profits will tempt new firms into the industry.

On the other hand, the firms losing money will tend to go out of business. This will reduce the supply and push up the price. The higher price (which means a new higher MR curve) will require a further adjustment until the firms remaining in business enlarge production to the point where marginal cost will again equal marginal revenue. If under this condition many firms are making profits, new firms will be attracted into the industry, and the older ones will gradually extend their operations. They will bid against each other for labor, offering to pay higher wages. They will offer to pay higher prices for land. These conditions will tend to increase their costs of production. If any large part of the low-cost producers of a given commodity throughout the market area extend their operations, more of the product will be produced and as a result the price will decline. Therefore the extent of the profits of these more capable or more fortunate producers will decrease, both because of an increase in their costs of production and because of the fact that price will decline. Conversely, if in the entire industry losses are very heavy and profits very rare, many will be forced out of business and others will neither replace them nor extend their operations. The supply will tend to decrease with the passage of time. This will result in higher prices for those producers who have not yet been forced out of business, until price again tends to equal the cost of production. In fact, the supply may be so contracted that profits may make their reappearance and the process described above will start up again.

Theoretically, under competitive conditions, with no change in any economic element, including the cost of the factors of production used in the industry under consideration, the demand for the product, and

the general price level, this shifting in and out of the industry will go on till all firms are in a position of making no profits¹ or losses. For as long as firms are making profits they will be tempted to increase these profits by expanding sales, and newcomers will be attracted into the industry. If losses are being suffered some firms will be forced out. So, all other things being equal, equilibrium under competition is not attained in an industry till no firm is making profits or losses. Graphically this situation is shown in Fig. 21 for a single firm. When an industry is in equilibrium, all the firms are in this position.

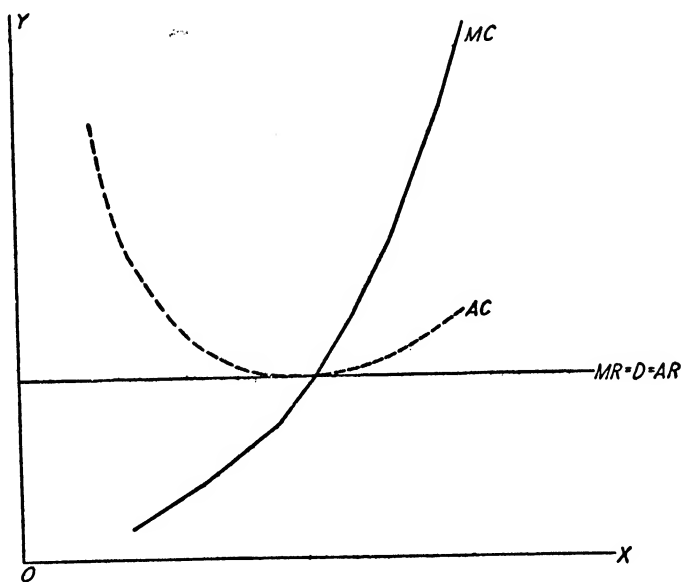


FIG. 21. Final equilibrium under competition.

Equilibrium is a state of rest. When physical objects are in an equilibrium position they remain in it till some external force pushes them out of it. In economics this state of equilibrium is never actually attained. "All other things" do not remain equal. Demand changes, the costs of the productive factors change, the government imposes new taxes and regulations or removes old ones, new inventions or improvements in management practices alter the technical conditions of production, the general price level moves up and down, or any one of a thousand other possible changes takes place to keep the equilibrium position in a constant state of movement.

The concept of an equilibrium price, though it is theoretical, is never-

¹ The term *profit*, as used here, refers to *pure profit*, not to *net profit* in the accounting sense. See pp. 136, 137.

theless useful, because it indicates the direction in which firms and industries are heading. It serves the usual function of a theory, which is to explain the reasons why action, economic or physical, follows the lines it does.

In the case of economics, in a competitive free-enterprise society, the line followed is one which will ultimately balance supply and demand. That balance would be achieved if the equilibrium point, where the amount demanded is equal to the amount supplied, could be reached. It is at the price which will just induce producers to produce the same amount of goods that it will induce buyers to buy. For if any price is so far above costs that producers of the commodity or service to which it applies are making much larger profits than producers of other commodities or services, it cannot under competitive conditions be the price for an extended period of time. This is because people will leave less profitable kinds of economic activity and take up the production of the profitable commodity or service. Conversely, if any price is so near the cost that those engaged in producing that good receive smaller profits than are received by those engaged in other business undertakings which they may enter, it also cannot be the price for a long period of time, though difficulty in leaving a particular business and entering upon other kinds of economic activity may cause a generally unprofitable price to remain in effect for a considerable period of time.

Static and Dynamic Conditions. The market price tends toward the equilibrium price but never reaches it, for the equilibrium price itself is never the same. Its position is constantly shifting because ours is a dynamic economy. A society can be conceived of where equilibrium could be attained. Such a society would be one in which the methods of production and the general character of demand did not change. In such a society people would be born, grow up, and die; goods would be produced and consumed; but there would be no important changes in the kinds or quantities of goods demanded in the market and no striking inventions to change methods of production. If our economic life were carried on in such a society (which is called by economists "static"), the analysis already given of how an equilibrium price tends to be arrived at would give the most essential features of the picture. However, our economic life is not carried on under static conditions. It is carried on under distinctly dynamic conditions, characterized by important, continuous changes, both in methods of production and in the quantity and character of goods demanded. These ever-changing factors not only cause the equilibrium position to shift continually, they complicate the problem of ascertaining the principles by which equilibrium is determined.

KINDS OF COST

Price and Cost. The equilibrium price under competition is one which induces buyers to take off the market just what can be supplied at the cost of production. We have already examined the conditions which bring about changes in demand and changes in supply in the short run. To round out the picture we now have to examine the more fundamental determinants of supply. We have seen in our discussion of the competitive equilibrium that firms move in and out of an industry, or expand or contract their production, depending on the relationship of their money receipts to costs. The understanding of this relationship, or rather interrelationship, for costs also influence the amount that will be supplied, depends on an understanding of the nature of costs.

Changes in price may come about through shifts in demand and the response of production thereto. They may come about independently of shifts in demand through changes in the methods of production, arising from the application of principles of scientific management² to a particular process, from inventions, discovery of new material resources, innovations in production techniques, and changes in the relationships of the costs of factors one to the other. This last we touched on to some extent in our consideration of intensive and extensive margins in Chap. 5.

Most commonly price changes are due to the interaction of changes in both supply and demand conditions. Our discussion of the attainment of an equilibrium price at the beginning of this chapter was under the unreal assumption that all other things remain the same except the supply of the particular articles being considered. We shall now try to get a little closer to reality by looking into what happens to the equilibrium position as the surrounding demand and cost conditions change. Before embarking on this discussion we must explain and classify different kinds of costs.

Real and Money Costs. Some economists, especially among those classed as welfare economists, are interested in costs in subjective terms, such as human sacrifice, fatigue, and disutility. They feel that a major objective of economics should be to reduce the cost of production in terms of human sacrifice or suffering. Such subjective costs they often designate as human costs, or *real costs*. In the discussion of costs of production in this chapter, we shall be but little concerned with costs in the sense just mentioned. Instead we shall deal almost entirely with

² One of the interesting current examples is the work now being done by many state colleges to plot the amount of walking a farmer does in a workday and devise methods of reducing this, thus increasing the farmer's efficiency.

costs in the sense in which the term is ordinarily used in business, that is, *money costs*.

Opportunity Costs. Though our use of the term *cost* will be mostly limited to money cost, it will include what have been designated as *opportunity costs*. These refer to the advantages or money returns which might have been secured from any of the factors or means used in the production of the good under consideration, if it had not been used in producing that good but could have been used for some other purpose. To a man who has \$10,000 of money which he invests in a producing enterprise, the use of this money may not appear as a cost of production. Nevertheless, as he might have secured a return in interest by investing it government bonds or other safe securities, the use of his own money in his own business is an opportunity cost; that is, it is the cost of foregoing the opportunity to secure a money return from some other use of this factor of production. In the same way the use by a farmer in producing farm products of his own land against which there are no debts represents an opportunity cost to the extent of the net rent which he might have secured from this land, if he had not used it himself to carry on production but had leased it to someone else. Furthermore, in considering the land which is used in the production of a particular crop, let us say corn, the use of that land represents an opportunity cost, based upon what would have been the value of the use of the land had it been used in the production of some other crop, let us say wheat.

Fixed and Variable Costs. In Chap. 5 a distinction was drawn between fixed and variable productive factors, the demarcation between them resting on whether, in the period under consideration, the quantity of a factor could be varied or not. If the quantity of a factor cannot be varied in the period of the analysis, its total cost cannot vary with the scale of operations and is therefore fixed. Among such costs are interest on money invested in means of production like land, buildings, and equipment, the quantities of which would not change in short periods, as well as taxes, insurance, and depreciation. The characteristic of this type of cost is that because its total remains the same, the average per unit goes down as output is increased.

When the quantity of a factor varies with the scale of operations, it is variable, as are its costs. Among these are wages for most kinds of labor (for instance, fruit harvesters paid for each basket picked) and costs of raw materials like the steel used by an automobile manufacturer, fuel, and the like. These *variable* costs are sometimes also called *direct costs*.

It is not easy to classify all costs into one or the other of these two categories, as many costs vary to some degree with the extent of the

operations, but not to the same degree as the variations in extent of operations. Nevertheless, it is generally recognized by businessmen and accountants that there are these two kinds of costs, and our understanding of the distinction between them will be of assistance to us in the analysis to follow.

DEMAND AND COST CHANGES

Change in Demand. Let us assume that there is an increase in demand from a previous competitive equilibrium position. In that case the firms in the industry will make profits because the AR curve (also the MR line under competition) will be raised, and the point where $MR=MC$ will be above the average cost line. Profits will have the result, however, of attracting newcomers into the industry, so that ultimately the profits will be competed away. A new equilibrium position will be arrived at where the greater quantity demanded will be supplied without profit at a higher price. An industry where such a condition obtains is sometimes called an increasing-cost industry.

Agriculture as an Increasing-cost Industry. Agriculture is usually considered as an excellent example of an increasing-cost industry. By this is meant simply that it is an industry of such a nature that unless the technical methods of production are improved, increased quantities of agricultural products will be supplied to the market only at increased costs per unit of product. If the world wants 6 billion bushels of corn instead of 5 billion bushels, *and no less of other agricultural products*, and if other conditions, including all the technical production methods of agriculture, remain unchanged, the normal price of corn will be increased. This is due to the fact that the supply of good land is limited and that land is subject to the law of diminishing returns.

An increase in the total supply of agricultural products with no improvement in agricultural production methods requires either that a larger product per acre must be secured from the lands already in use or that additional lands must be put into use. For a larger supply of a single product there would, of course, be the additional possibility of using land formerly used for other products. To secure a larger product per acre from lands already in use requires, unless production methods are improved, that the lands be used more intensively, that is, that more labor and capital be applied to a given area of land. But because of the law of diminishing returns with particular application to land, as explained in Chap. 5, additional applications of labor and capital to a given amount of land will not result in as much product per unit of capital and labor applied as did preceding units. This will result in increased cost per unit of product secured.

A second manner in which the total supply of agricultural products

may be increased is by bringing into use more land. This, however, generally means that lands must be used which yield smaller returns for the labor and capital applied, assuming that farmers up to the present time have selected for their operations the lands which yielded the greatest returns for the labor and capital applied. To secure additional products, lands may be used that are less fertile, that are less advantageously located with respect to markets, or that have less favorable climatic conditions; or lands may be improved by expenditures of capital for drainage, irrigation, or fertilization. Any of these procedures, however, will tend to result in increased costs per unit of product. At least this will be the case generally if farmers up to the present time have exercised good judgment in their selection of lands for their operations and production methods have not changed in such a manner as to cause different lands to be the "best" lands.

Though agriculture and other industries may be subject to increasing costs at any one time, this does not mean that the cost of production per unit of product is necessarily greater now than it was twenty years ago, or that it necessarily will be greater ten or twenty years from now than it is at present. The tendency to increasing costs may be offset by improvements in the technical methods of production. Examples of the effects of such improvements have already been given in earlier chapters. There can be little doubt that in the last twenty years there have been sufficiently great improvements in the technique of producing every major crop in the United States to more than offset any tendency toward increasing costs, although the production of every major crop except cotton has materially increased. The tremendous rise in the general price level attendant upon the Second World War and postwar inflation, however, has obscured this fact. That this is the case will however be apparent if we turn to real costs for a moment and remember that a smaller expenditure of resources, both of labor and land, is now required to obtain a unit of product than was the case a generation ago. This is the converse of the statement reiterated in Chaps. 3 and 5, that yield per acre and per worker has greatly increased.

Thus while the tendency toward increasing costs is true of one particular moment in time, for agriculture technical improvements over a period can lower the whole supply curve.

Downward Shift in Demand. If we begin again with the competitive equilibrium position, but assume this time a downward shift in demand, what happens?

Theoretically the answer is fairly easy. Since not all firms are actually at the no-profit equilibrium point, some being on it, some below, some above, a drop in demand which means a drop in the AR (MR) line, will bring bigger losses to those whose costs already exceeded price

and cause those who were previously just breaking even to suffer losses. The firms undergoing losses will drop out of business, leaving the field to the more efficient ones able to get by at lower prices.

Equilibrium would be reached with a smaller supply at a lower price.

Effect of Fixed and Sunk Costs. In actual cases, however, a reduction in demand and a corresponding reduction in prices will not necessarily reduce supply materially even if many firms in an industry suffer losses. This is very likely to happen where fixed costs are high in relation to variable costs and where there is a high proportion of *sunk* costs.

To take the first case, where fixed costs are important, the entrepreneur cannot appreciably reduce his costs by reducing production, and, accordingly, production will tend to continue with but slight diminution even when total costs lack much of being covered, provided that the variable costs continue to be covered. On the other hand, if large profits are being earned in a business in which most of the costs are fixed, entrepreneurs will, nevertheless, not be eager to enter. This is partly because, in case the profits appear to be but temporary, entrepreneurs know that when profits cease to be satisfactory they cannot quickly curtail production and cut off their costs, and it is partly because more time is required to set up and establish as a going concern a business with large fixed costs.

By contrast, however, a business with a high proportion of variable costs is one that will act according to theory, contracting with a reduction in demand. An example of such a business would be that of hiring laborers to cut wood under such conditions that the timber from which the wood is cut is bought only as cut, and the wood after being cut is sold immediately, let us say on the spot, without the necessity of fixed investment in hauling equipment. In that case, almost the entire costs would be variable, arising from the cost of a type of labor which could be hired or discharged as wanted or not wanted. Under these circumstances the entrepreneur would not long continue production if his costs were not covered. On the other hand, the ease with which others could enter the business would draw other entrepreneurs into the business as soon as there were indications of pure profits, and this would keep price at any time from rising much above costs.

An industry in which costs are very largely fixed is well illustrated by agriculture. The investment in land especially is heavy in relation to value of annual output, and practically all the costs connected with land continue, as well as a large part of those connected with equipment, whether production is carried on or not. The expense for hired labor is the most important variable cost in agriculture, as in productive undertakings generally. But, at that, in agriculture it is relatively unimportant in comparison with the fixed costs. The labor of the farmer himself

may be viewed either as a fixed or as a variable cost. It is fixed in the sense that the farmer saves no money costs if he, so to speak, discharges himself by not working. It is variable in the sense that the wage he actually, so to speak, at last pays himself for his services varies with the extent of the output. In whatever way that may be viewed, the farmer who owns a farm can but seldom afford not to operate it, because by so doing his money costs would be but little reduced. Of large significance also is the thoroughly competitive nature of agriculture, with a very large number of operators supplying like products in a market of such large extent that for any farmer or any comparatively limited group of farmers to reduce their production would reduce the total amount of product coming to the market to but a negligible degree and therefore would have but a negligible effect on price.

The fact that charges must be paid on fixed costs, regardless of whether the productive factor giving rise to those costs is used or not, means that there is a tendency to keep factors—land, a factory building, machinery—in operation as long as variable costs are covered. The question may then be asked, why keep on producing this unprofitable item, why not turn the productive factor to making what is in demand, so that fixed as well as variable costs are earned? The difficulty is that so many productive factors on which fixed charges must be paid are only fitted for one use.

Trolley cars may have been rendered obsolete and unprofitable by bus competition, but they are operated as long as the workers' wages and other variable costs are covered because they cannot be used for anything else, and as long as the variable costs are earned, the owner makes more or loses less than he would if he left the cars idle.

Once capital is put into some form which is adapted to only one use, it is sometimes called sunk capital. An example of sunk capital in agriculture is a fruit orchard. There is no alternative use for the trees.

The fact that equipment remains in existence after it is obsolete or there is a reduced demand for what can be made from it and that it cannot be converted to any other use is largely responsible for the phenomenon of excess capacity. Examples of industries with excess capacity are the cotton-spinning and weaving industries before the Second World War, which could have turned out, if in full operation, much more yarn and cloth than consumers were willing to buy at a price commensurate with costs.

Because of the excess capacity, there was a strong tendency in these industries to cut prices below total costs, each entrepreneur being eager to get something back on his fixed charges in preference to keeping his plant idle and getting nothing.

Relationship of Cost and Price. Under competition, when there is

time for adjustment, the tendency is for price to equal cost of production. If demand increases, prices go up and so do costs (barring technical improvements); if demand goes down, prices go down, production goes down, costs go down. To this there is, however, the very important exception that, in industries with heavy fixed costs, particularly those where equipment is specialized, the tendency is for production to continue with costs remaining above price. In the long run, however, even in such industries, ultimately the point is reached when not even variable costs are covered and then production is reduced and costs brought down so that they ultimately come in line with prices.

The relationship between prices and costs is not one-way. Changes in supply conditions have their effect just as do shifts in demand. If in a competitive industry costs go down because of improved methods, then prices must come down to meet them. If they go up, as might happen because of the exhaustion of good land or good coal seams, prices rise also to a height that is regulated by the intensity of demand.

In the short run, in the conditions described in Chap. 9, where supply cannot be altered, demand conditions have a controlling effect on price. In the long run, supply conditions become more important, and price and cost of production tend to approximate each other. Ultimately and despite all exceptions price cannot forever lie below cost, for in such a situation production must sometime be curtailed. Under competition it cannot be long above it.

Is Equilibrium Attained? Earlier in this chapter we pointed to the dynamic nature of our economy, to the constant change in people's attitudes and in the techniques of production as preventing equilibrium from ever being attained, because the point where it could be is continually moving. There are other obstacles to its attainment, other reasons why the coincidence of cost and price is hardly ever achieved. Pure inertia or mere ignorance may be among these. A farmer may not use the most advanced methods because he has not heard of them or because he just does not want to change his way of doing things. As a result the profits of the more energetic and alert farmers are not competed away and equilibrium is not attained.

Bad judgment is another reason. Resources are sunk into an industry and its production is expanded, but although demand never rises to anticipated levels, it is kept in production at a loss because of the inconvertibility of so many factors. For instance, during the 1920's and the early 1930's many a farmer who had bought land at very high prices right after the First World War lost the results of a lifetime of saving when prices of farm products declined so that his heavy fixed costs were no longer covered by the greatly reduced returns from the sale of his

products. After the Second World War farmers again bought land for high prices—though fortunately they did not go in debt to anything like the extent they did in 1918 to 1920—and they also bought a great deal of equipment, often at gray-market prices. Fixed charges for this expensive land and machinery might pinch if farm prices should decline materially.

A quite different factor preventing the attainment of equilibrium is government programs that fix prices, which prevent goods from moving to where supply and demand would be equated.

All this means that in real life few prices are truly equilibrating prices.

Increasing Costs and Diminishing Returns Contrasted. It has been mentioned that agriculture is in general an industry subject to increasing costs, and also that this is largely the result of diminishing returns from land. This close relation of diminishing returns and increasing costs has resulted in the two terms being used interchangeably by some writers. That, however, should not be done. *Diminishing returns* in economic language refers to a less than proportional increase in output from adding additional units of variable factors of production to a given amount of a fixed factor, the fixed factor in many discussions being assumed to be land. *Increasing costs*, as used in this discussion and as generally used, refers to a situation where additional supplies of a commodity in the aggregate can be produced and supplied to a market only at increasing per unit costs for the additional units. Though closely associated, the two principles are not the same. Increasing costs are best understood in contrast to decreasing costs, and decreasing costs prevail where a larger supply of a commodity in the aggregate can be furnished to a market at a smaller cost per unit than a smaller supply. In general, decreasing costs prevail in industries especially well adapted to mass-production methods, whereas increasing costs tend to prevail where mass or large-scale production offers no significant economies.

One way of viewing the distinction between diminishing returns and increasing cost is that diminishing returns refers to a decline in physical units of output per physical unit of input of one or more variable factors in combination with one or more fixed factors, whereas increasing costs refers to the necessity of an increase in the money costs of production per unit of product in order to add to the total supply of that product.

Decreasing Costs. The discussion in the preceding paragraphs rested in large part on the assumption that the industry under discussion resembled agriculture (1) in having a fair degree of competition and, (2) in being subject to increasing cost (barring technical improvements).

The student might well be minded to ask at this point, "How are

prices set and equilibrium arrived at in industries like automobile manufacturing, where the cost of production is less per unit as output increases?"

There are several answers to this question. It is, indeed, highly doubtful if any industry subject to decreasing costs, that is, one where producers in the aggregate can furnish a larger supply to the market at a lower price per unit than a smaller supply, actually exists under competition. This is so for two reasons:

1. Under competitive conditions, with decreasing cost, any firm can enlarge its profits by increasing output. Equilibrium will never be reached because of this constant temptation to each firm to increase production, and the most efficient firms will be able to undersell and drive out their competitors. Unlike the increasing-cost situation, this expansion of the efficient firms is not checked by rising costs, but can go on indefinitely. (In theory, every cost curve turns up at some point, but this upturn may not take place in the relevant range.) Therefore the tendency will be for fewer and fewer firms to survive, and an industry with only a few firms in it is not likely to be competitive.

2. The industries which are subject to decreasing costs are in general those which are adapted to large-scale or mass-production methods. An automobile factory can produce automobiles much cheaper if it can produce a million per year than if it can produce only a thousand. The same tendency is true in the great majority of all industrial products adapted to production by machine methods.

Since mass production can be carried out only by huge companies, there are likely to be only a few such in any one industry. Fewness and largeness of sellers are not conducive to competition. Thus, the methods by which prices are set in decreasing-cost industries can be more appropriately presented in the next chapter, which discusses the effect of monopolistic conditions.

Mass Production. The gains which come from mass-production methods, and which therefore result in certain industries's being subject to decreasing costs, have been classified under the general heads of (1) internal and (2) external economies, of which a number have been mentioned previously in Chap. 7. *Internal economies* are those which result in less costly performance of the same operations to the extent that they are within the control of the management of the individual business organization. *External economies* are those dependent on the general development of the industry. The distinction between internal and external economies, however, is not a sharp one, because what is an internal economy in one case is an external economy in another. This is well illustrated in the automobile industry, where to the plant which manufactures its own parts the ability economically to do this under a

mass-production system is an internal economy, whereas to another plant which buys its parts from the specialized makers of parts the ability to buy them economically is an external economy. The ability readily to secure workers with specialized skills may be considered an external economy, though the securing and using of them are within the control of the individual organization and, therefore, an internal economy.

Among the more generally recognized economies of large-scale or mass production are the following: (1) the use of machinery, particularly highly specialized machines, which take the place of human labor; (2) development of skill and saving time by having workers devote their entire time to one operation; (3) reduction of expenses of supervision and general overhead; (4) utilization of by-products; (5) the possibility of carrying on experimental research activities.

One of the economies of large-scale or mass production which applies to many industries, but which is not so generally recognized as those already mentioned, is that of marketing. In meat packing the large plant has an advantage over the small one in the marketing of its product outside of the local community in which the plant is located. This is especially true in the exporting of meat, which cannot be done economically by any concern except one operating on a large scale. Even more outstanding economies in marketing, however, are possible as a part of mass production in the case of products which require large expenditures for advertising in order to develop the market demand. There is a tendency for products depending largely on advertising to be produced under conditions which are not thoroughly competitive, and to that extent the discussion of principles of their price determination is also appropriate to the following discussion of prices under monopolistic conditions.

One of the complications in the theoretical discussion of increasing returns is the difficulty of distinguishing between the economies of large-scale production and of technical improvements. Thus when the great dams in the West, like Bonneville and Fort Peck, were built, it was economical to use earth-moving machinery of unprecedented sizes and types. Was this a case of decreasing cost along one supply curve, or a historical change involving a shift from one supply curve to another, lower one?

An answer to this question which, indeed, would at best not be completely satisfactory, lies beyond the scope of this book.

Constant Costs. Between increasing- and decreasing-cost industries are those in which commodities are produced under conditions of constant cost. By this is meant that the per unit cost of production remains unchanged, regardless of the amount which in the aggregate is supplied to the market. There are probably no commodities which are

produced under conditions of exactly constant costs, though there are probably many which are produced under conditions which quite closely approximate constant costs. The shape of the long-run supply curve, under conditions of constant cost, would be, of course, a straight line parallel to the base line of the figure.

Joint Costs. Where two or more products result from one productive process, they are said to be produced under conditions of joint cost. Familiar examples are the lint and the seed of cotton and the meat and the hide of a beef animal. For all such goods, the long-run tendency of price to equal cost of production for the representative producer applies not to one or the other of these products, but to the two jointly. An increase may occur in the demand for one of these two joint products while the demand for the other remains the same. This will result in a higher price for the product for which the demand has increased and a higher combined price for the two products, resulting in increased production, which in turn will lower the price of the product for which no increase in demand has occurred.

Specifically, a great increase in the demand for cotton lint would result in more cotton being produced in the long run. This would result in the production of more cottonseed. Accordingly, if the demand for cottonseed did not increase, its price would be lowered. Illustrating the opposite type of change, a decrease in the demand for hides would tend to increase the price of the meat of the animals. The course of events would be as follows: Suppose that cattle hides decline in price, but that there is no change in the demand for beef as meat. Because the demand for beef has not changed, the same supply of meat will sell for the same price. The decline in price of hides, therefore, will result in farmers receiving less for their animals. This will cause a decline in the supply of cattle, and that in turn will cause an increase in the price of beef as meat.

THE RESPONSE OF SUPPLY TO PRICE FOR PARTICULAR PRODUCTS

In the preceding pages a number of important principles applying to the relation of long-run price to cost of production have been presented. For the remainder of this chapter, we shall study the manner in which historically the supply of a few particular products, especially of agricultural products, has responded to changes in price.

The Hog Cycle. Hog production has tended to run in cycles, varying normally from about three to five years in length from peak to peak. The cycles have been dominated by the relation of the price of corn to the price of hogs. Whenever the price of live hogs has been especially high in relation to the price of corn, a great increase in the number of

hogs marketed has usually occurred a year or two later. This is well shown in Fig. 22.

The hog-corn ratio is an expression indicating the number of bushels of corn which at a given time have the same market value as 100 pounds of live hogs, as based on the Chicago market. The *normal ratio* is considered to be somewhere near 11.6 bushels of corn per 100 pounds of live hogs, for the reason that the average price of heavy hogs at Chicago for almost seventy-five years has been equal to the price of 11.6 bushels of No. 3 yellow corn at Chicago. The hog-corn ratio does not measure

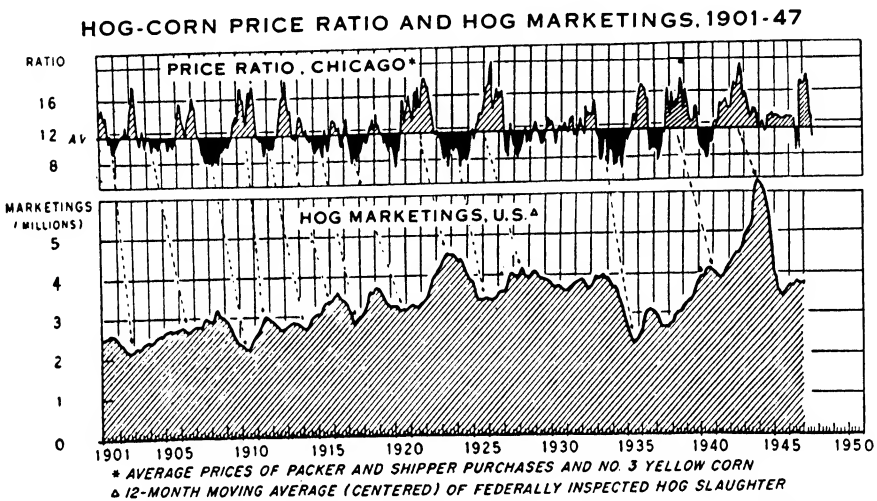


Fig. 22. Hog-corn price ratio and hog marketings 1901-1947. Source: *Neq.* 18242, BAE, USDA.

the profitableness of corn and hog production from year to year, but it does measure the relative profitableness of selling corn direct or selling it in the form of hogs. Whenever it requires more than approximately 11.6 bushels of corn to equal in value 100 pounds of live hogs, it is generally more profitable to feed the corn to hogs than to sell it direct. Whenever it requires appreciably less than 11.6 bushels of corn to equal in market value 100 pounds of live hogs, as was the case in 1924, it is generally more profitable to sell corn than to feed it to hogs.

Whenever the hog-corn ratio has gone to some such figure as 100 pounds of hogs to 14 or 16 bushels of corn, as it did in 1937 to 1938, there has been a pronounced tendency for farmers to increase the number of their brood sows, so that a pronounced increase in the number of hogs marketed would occur from one to two years later. This, as should be expected, resulted in lower prices for hogs, and a situation where

considerably less than 11.6 bushels of corn sold for the same price as 100 pounds of hogs. That in turn resulted in farmers disposing of brood sows and in a reduction in the number of pigs. This again resulted in a ratio favorable to hogs, and thus the cycle was repeated.

Beef Cycle. There is also a well-marked tendency for the beef-cattle population to reach successive peaks at intervals of about twelve to fourteen years. One explanation of this phenomenon starts at a period when numbers are low and the price of beef is likely to be high in comparison with that of other things because the relatively small herd means that few cattle and calves are coming to market. The high price

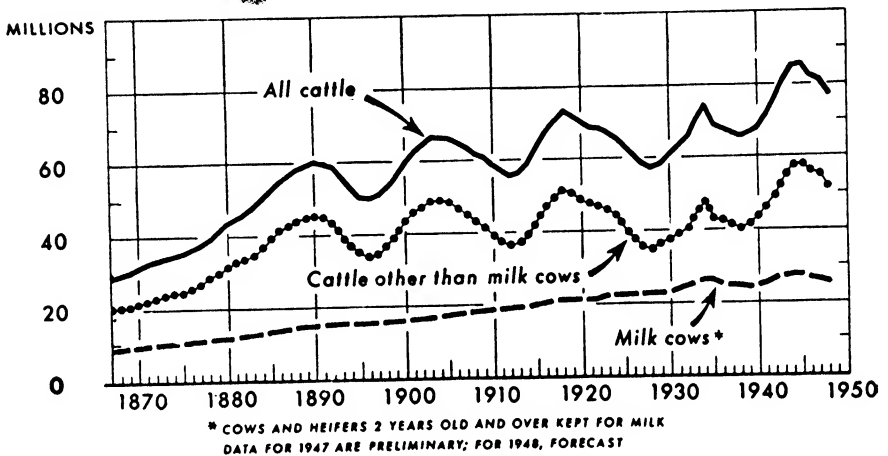


Fig. 23. All cattle: Number on farms. Source: Neg. 34150-X, BAE, USDA.

induces cattlemen to keep back breeding stock, which still further shortens the supply and sends up prices. Because of the length of the breeding period, it takes six to nine years to build up numbers. As this goes on, the high profits prevailing and the fact that the capacity of the ranges is being strained by the growing herds lead the cattlemen to start sending their animals to market. The increase in market supply lowers the price and induces further liquidation of what now appear to be unprofitable herds. This liquidation continues till numbers are sufficiently reduced to shorten supply and the process starts again. That variations in the number of all cattle are due to the beef cycle is made clear by Fig. 23, which shows that while changes in milk-cow numbers are relatively slight, changes in the number of other cattle are noticeable and rhythmical.

Other Products. Not all farm products show such rhythms in production as cattle and hogs, but many other products show that supply

responds to price. Potatoes are an example of a product in which the response is very rapid. The acreage of potatoes can be rapidly increased, and accordingly we find that the greatest single factor in determining the acreage planted in any year is the price which prevailed during the preceding year, though the price which prevailed the year preceding that one also has some influence. As the crop depends not only on acreage planted, but also on the weather conditions, and as these vary irregularly, there is, however, no regular rhythm in the size of the crop or in the prices which prevail.

Poultry and egg production have been characterized in recent years by a certain degree of rhythm in the ratio between egg prices and feed prices, and also between prices of chickens and prices of feed, the typical cycle having been about three years in length. During the thirty years before the Second World War wool prices tended to move in cycles of around nine years in length, largely because of cyclical changes in wool production.

Numerous other examples could be given of different kinds of responses in the supply of particular farm products to high or low prices.

The Relation of Cost to Price a Complicated Matter. The material presented in this chapter has shown both that the relation of cost to price is a highly complicated matter, affected by many influences, and that, in spite of these complications, this relationship is subject to a number of very definite laws, or principles, and tendencies. The principles presented in this chapter are of high importance. Certain additional influences on price will be considered in the pages to follow. Among these is the prevalence of monopoly, which influences the relation of cost to price, not only of the good to which it applies, but indirectly also of other goods, indirectly affecting industries which are competitive rather than monopolistic in nature. The principles of price determination where monopoly exists, the extent of monopoly, and problems connected with its existence will receive our attention in the next two chapters.

Questions and Problems

1. What are the conditions of equilibrium for a firm?
2. What are the conditions for equilibrium in a competitive industry?
3. Summarize in a general way the relation which exists under competitive conditions between costs of production and price.
4. Is agriculture truly a decreasing-cost industry in view of the fact that the real costs of agricultural production have been reduced?
5. What is the effect on price of an increase in demand?
6. Define fixed and variable costs, and show how the relation between cost of production and market price is affected by the extent of the fixed as compared with variable costs. Illustrate and explain.
7. Define *sunk capital* and show how its existence affects the relation between cost of production and price.

8. Explain the beef-cattle price cycle.
9. Define the hog-corn ratio, and explain the cycle in the hog-corn ratio.
10. Mention other cycles in farm-product prices of which you are able to learn.
11. A California raisin grower was asked whether raisin prices had covered his costs. He replied, "In only one year. It costs me $2\frac{1}{2}$ cents a pound to cover out-of-pocket costs and equipment repair. At 3 cents there is some income on the investment in land and vines. I hope raisin prices go above the present level ($2\frac{1}{4}$ to $2\frac{1}{2}$ cents) but not over $3\frac{1}{2}$ cents." Why would the farmer make the last statement?

Suggested Readings

1. F. B. Garver and A. H. Hansen, *Principles of Economics* (1937), furnishes one of the best short explanations of the relationship between cost of production and price. See also Chap. V in K. E. Boulding, *Economic Analyses*, and Chaps. VII to X in A. L. Meyers, *Elements of Modern Economics*.
2. Edward Chamberlin, *The Theory of Monopolistic Competition* (1938), Chap. I, discusses value under pure competition with particular reference to the individual firm. This approach is helpful in comparing value under competition and under monopolistic competition.
3. J. H. Lorie, *The Causes of Annual Fluctuations in Livestock* (1947), is a detailed examination of the beef and hog cycles.
4. The U.S. Department of Agriculture and a number of state agricultural experiment stations furnish from time to time, as a part of their outlook information, data on changes in production which farmers have made in response to price.

CHAPTER 11

MONOPOLY AND MONOPOLISTIC COMPETITION

In the two preceding chapters, the operation of the major price-determining forces for particular goods under competitive conditions have been considered. In this chapter and the following one, our attention will be devoted to the effects of monopoly on prices. The analysis will include an examination of the effects of government authority and custom on the determination of prices and on the working of the competitive system, and special attention will be given to the effects of monopoly on persons engaged in agriculture.

TYPES OF MONOPOLY

Monopoly Defined. The word *monopoly* is derived from two Greek words meaning "alone" and "to sell." Strictly speaking, therefore, an absolute monopoly refers to complete control by one individual or organization (in the sense of complete absence of competition) of the buying or selling of any kind of good. There is only one buyer or one seller. Most monopolies, however, are not absolute, as only rarely is there complete absence of all competition. In most cases our concern is with some degree of monopoly. With that in mind we may say that there exists *some degree of monopoly* when there exists *such unity in the control of the supply or of the demand of any good as to result in a price materially different from the one that would result if there were a great number of sellers or buyers of that good in ordinary free competition.*

Monopolies of Many Kinds. Monopolies of some degree exist in many forms. In the minds of most people monopoly is associated with large corporations. One student of them, however, says:

Most common monopolies are not the result of patents, mergers, or concerted action. In the vast majority of cases they are the result of special situations which bring about absence of competition. These situations are so numerous and so various that classification of them hardly seems worth while. An enterprise is established in which one man or a group of men have a controlling interest. The concern probably does not go into the open market and hire the best possible managers at the lowest necessary salaries. Undoubtedly the dominant man makes himself president at a salary which he fixes, or the dominant group select themselves as the principal executive at salaries which they themselves

determine. In spite of the fact that there are plenty of men available, the enterprise is confronted with a sellers' monopoly—the sellers of executive service in this case. In the South, it is common for retailers to create a monopoly situation by extending credit to impecunious tenant farmers. Should the debtors fail to purchase all their supplies from the retailer—at his own price—he presses for payment of the debts. If one enterprise in an industry is substantially larger and more powerful than its competitors, it may compel them to adhere to its prices by threatening a price war against any concerns which sell below its prices. In Mexico and parts of eastern Europe, large landlords have used indebtedness as a device to hold laborers at far lower wages than competition would establish.¹

The preceding quotation emphasizes the wide variety of conditions which result in degrees of monopoly and the difficulty of a satisfactory and complete classification. In spite of the fact that the different conditions are so numerous that a complete classification is difficult, our understanding of the problems of monopoly will be promoted by distinguishing some of the more important kinds.

Buyers' and Sellers' Monopolies. First, monopolies may be distinguished as (1) buyers' and (2) sellers' monopolies. A buyers' monopoly, or *monopsony*, exists where there is *only one buyer or such unity of action by different buyers as to result in a price different from that which would prevail if there were a number of truly competitive buyers*. For example, during the early years of the present century, when the Standard Oil Company controlled 85 to 90 per cent of the oil-refining business of this country, it undoubtedly secured some of its supply of crude oil at lower prices than would have been paid if there had been a number of truly competitive buyers.

Buyers' monopolies, especially those which control the sale of the goods bought, are opposed to the public interest because they obstruct the flow of goods through the channels of trade, discouraging production by buying only at unduly low prices, and preventing the consumption which would otherwise occur by being willing to sell only at unduly high prices, all for the sake of returning to the monopoly a profit in excess of that which would prevail under freely competitive conditions.

Sellers' monopolies are those which *have such a control of the supply of a good that they are able to control the amount offered for sale to the extent of causing a price to prevail which is different (usually higher) from the one which would prevail under ordinary competition*. Most monopolies—that is, organizations possessing a degree of monopoly power—are sellers' monopolies. The control over supply possessed by such a sellers' monopoly may arise from its being also a buyers' monopoly, but more often it arises from the possession of control of the production of the good over which it possesses monopoly powers. An excel-

¹ Sumner H. Slichter, *Modern Economic Society* (Holt, 1931), p. 352.

lent illustration of a sellers' monopoly based upon control of production is found where the monopoly has the exclusive privilege of producing the good granted to it by a patent.

A sellers' monopoly, having control of the supply, may enhance prices either (1) by simply limiting the supply to less than would be produced under normal competitive conditions, or, as is more often the case, (2) by first fixing the price at which the good will be sold and then simply refraining from producing more than can be sold at that price. In this second case also the price is presumably set at a point on the demand curve higher and farther to the left than would be the case under competition. The principles determining the exact point at which monopoly price would theoretically be set will be explained later in this chapter.

Public and Private Monopolies. A second classification of monopolies is as (1) public and (2) private monopolies. A public monopoly may be defined as one maintained or operated by the government. An excellent example is found in the mail service, operated as a government monopoly in the United States and other countries. Such a public monopoly may be undertaken solely or primarily for the purpose of furnishing a needed service in the most satisfactory manner at the least cost. It may also be undertaken for the purpose of raising revenue, in which case it is referred to as a *fiscal monopoly*. The governments of France and other countries exercise a fiscal monopoly over the sale of tobacco products. A public monopoly may also exist for the purpose of controlling and limiting consumption of goods considered to be injurious: for example, state control of sales of alcoholic drinks in Virginia and Maryland.

Private monopolies include all that are not public. It is with private monopolies that we are most concerned in our study of the relation of monopolies to economic life in this country, of their influence upon prices, and of the problems of their regulation or control.

Legal Monopolies. The term *monopoly* was originally applied only where the monopoly privilege was legally conferred. All public monopolies are, of course, legal monopolies. Most obvious of present-day legally created private monopolies are those based on patents and copyrights, which give exclusive control to produce and sell the patented or copyrighted article. These are designed to stimulate invention and authorship. The monopoly granted by a patent in the United States extends for a period of seventeen years, while designs may be patented for shorter periods. A copyright gives exclusive control over publication for twenty-eight years, with the privilege of renewal for another twenty-eight years.

Closely akin to the above are trade-marks. Though they do not grant a monopoly right to produce and sell a particular kind of good,

they do give a monopoly right to sell it with a particular trade-mark, which may be a coined word or a design. In the case of goods of which the merits are difficult to identify, trade-marks protect the producer to a great extent against competition and enable him to secure prices under monopoly principles of price determination rather than under competitive principles.

In the industries of public transportation and for public utilities, at least a measure of legal monopoly generally exists, for no one may enter such a business in most states without first obtaining from a public regulatory body a certificate of public convenience and necessity. This is presumed to be granted only after evidence is presented showing that the additional service which it is proposed to establish will promote the general welfare, and will not simply result in uneconomic competition, with the service which it is proposed to establish being already furnished as adequately as the conditions justify. Any monopolistic franchise is a legal monopoly.

Various kinds of certificates required of persons to practice particular professions—such as that of medicine, dentistry, and teaching in the public schools—grant a certain degree of legal monopoly. Though those engaged in such professions are not protected from the competition of others who possess the required certificates, they are absolutely protected from the competition of anyone, no matter how able that one may be, who does not have the qualifications prescribed as necessary to secure the required certificate and has not had such a certificate granted him.

Protective tariffs grant a degree of legal monopoly in that they protect domestic producers from the competition of goods produced in foreign countries.

Natural Monopolies. Of very large importance in our economic life are what have come to be designated as *natural monopolies*. Here the nature of the business is such that there is a strong, if not inescapable, tendency toward monopoly. Usually considered in this class are the telephone, light and power, water-supply, and railway-transportation industries. All of these are designated as public utilities, or as businesses vested or affected with a public interest. In such businesses, by their very nature, genuine competition by different producers supplying the same kind of service cannot be expected to continue. If attempted temporarily, it will result in the destruction of enough competitors that monopoly will ultimately result. This is primarily for three reasons: (1) The business is such that it is impossible for many competitors to supply services to all customers. The necessary investment in plant is so much greater and, as is true especially of the telephone service, the service is so much inferior if there are a number of competing companies

than it is if there is a monopoly, that many competitors cannot economically continue and will not continue. One or at most a very few companies must furnish all the service in a given area. (2) The commodity or service supplied is standardized to such an extent that customers will readily change to the company offering some price advantage. (3) The fixed expenses form a relatively large part of total expenses. Because of conditions 2 and 3, competition, if attempted, will lead to monopoly. Price cutting, if undertaken, will be carried to such a degree that most of the competitors will fail to cover their expenses and will become bankrupt, the result being a monopoly.

Where monopoly is the *natural* condition, competition cannot be relied on to result in prices which are fair to the consumer. Accordingly, the English courts "from time immemorial" have held that where such a business is *affected with a public interest* the public may regulate rates or charges and services. This doctrine of the English courts was upheld by the U.S. Supreme Court in a number of decisions in the seventies, the most famous case being *Munn v. Illinois*, decided in 1877. The principle of regulation of rates and services by public authority is now applied to all the classes of public utilities or businesses vested with a public interest—to those listed above and to some others.

For such a natural monopoly to be "affected with a public interest," it must be business of such a nature that refusal by those in charge of it (1) to serve all comers (2) without unreasonable discrimination and (3) at reasonable rates will result in a severe hardship upon those against whom discrimination is practiced. As a result those who engage in such a business take upon themselves three obligations: (1) to render service to all applicants whom they are equipped to serve; (2) to render such service without undue discrimination in character of service rendered or in charges; (3) to render service at reasonable rates.

While not generally considered natural monopolies, partly because they do not fulfill the necessary condition (1) that it is impossible for many competitors conveniently to supply consumers, almost any business which is organized on a mass-production basis has certain resemblances to a "natural" monopoly in that fixed expenses are a large share of total expenses and products are highly standardized.

That tendencies to monopoly exist in such businesses—in steel or cement manufacture, to take two examples—is recognized also by the fact that public action has been taken to curb such tendencies, though the form of regulation, which will be described below, is not in the nature of rate setting, as in the case of public utilities.

In many cases where the "natural" tendency to monopoly has not been strong enough to result in full monopoly, or even in businesses where by their nature there is no such tendency, various degrees of monopoly have

been achieved by various kinds of combination, sometimes forced by the stronger party.

A vigorous critic of monopoly has summarized the methods employed as follows:

But monopoly cannot be attributed to characteristics inherent in products, markets, and productive processes alone. It is the product of formal agreements and secret understandings; of combinations, intercorporate stockholdings, and interlocking directorates; of the ruthless employment of superior financial resources and bargaining power; of unequal representation before legislatures, courts, and administrative agencies; of the exclusion of competitors from markets, materials, and sources of investment funds; of restrictive contracts and discriminatory prices; of coercion, intimidation, and violence. It is the product, too, of institutions of property which permit private enterprises to take exclusive title to scarce resources; of franchises, permits, and licenses which confer upon their holders exclusive privileges in the employment of limited facilities and the performance of important services; of patents which grant to their owners the exclusive right to control the use of certain machines and processes and the manufacture and sale of certain goods; of tariffs which exclude foreign producers from domestic markets; of statutes which exclude out-of-state producers and ordinances which exclude out-of-town producers from local markets; of legislation which limits output, fixes minimum prices, and handicaps strong competitors; and of inadequate enforcement, over many years, of the laws that are designed to preserve competition. In nearly every case in which monopoly persists, it will be found that artificial factors are involved.²

Some of the more important of these methods will be discussed in the course of this chapter.

Forms of Business Combination for Monopoly Purposes. As early as 1776 Adam Smith wrote: "People of the same trade hardly meet together even for merriment or diversion but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices." The same objective is still much in evidence, but, because of the greater area of the market and the increase in the number of producers who compete within a market, the conditions are decidedly different. The different means by which monopoly action may be taken vary all the way from informal understandings to the outright merger of competitors at the other extreme.

The trust or monopoly movement as a subject of general public concern in the United States dates from the period of "big business" following the Civil War. The earliest business combinations for maintaining prices were mostly in the forms of *gentlemen's agreements*. Many of such agreements continue to be entered into at the present time. In effectiveness they vary. Where the number of competitors or conspira-

² *Final Report of the Executive Secretary, Temporary National Economic Committee, Government Printing Office, Washington, 1941, pp. 28-29.*

tors, whichever we may choose to call them, is few, they are sometimes quite effective. Where many need to be held together, more formal organization is required to be effective.

In more recent years the most common form of agreement on a large scale has been by means of a *trade association* or *open-price association*. Such associations, without doubt in part to avoid the antitrust laws, are said to be primarily for exchanging statistical information and specifically disclaim being for the purpose of price fixing. A number have been prosecuted for violation of the Sherman Antitrust Act. Some have been found guilty, others have been acquitted.

The next form of organization to be widely prevalent was the *pool*, which is said to have been the typical form from 1875 to 1895. This was a formal agreement to divide either the total business, or the profits from the business, on some prearranged basis. "Always some degree of control over supply is involved, and is exerted more or less directly according to the type of pool."³ Numerous railway pools were formed during the seventies and eighties. Pools have not been effective in monopolistic price control except where a definite allotment of tonnage or business has been maintained by penalties for violation. Railroad pools were made unlawful by the Interstate Commerce Act in 1887, and the industrial pools were prohibited by the Sherman Antitrust Act in 1890. Since that time pooling as a device for monopolistic price control has been largely superseded by other types of organization.

The *trust* as a business organization used for monopoly purpose generally has come to be held in bad repute. To most people a trust signifies a large monopoly which charges unfair prices. In legal language the term *trust* is used to refer to a contract, expressed or implied, whereby the property of one person, natural or artificial, is held and administered for his benefit by another. The word is applied in ordinary language to monopoly, for the reason that the legal trust was a device much used by attorneys at one period in our history in bringing competitors together in monopolistic agreements. The various previous competitors were induced to divest themselves of the control of their own properties and to place them in the single control of a small group by means of a trust, and those who were thus placed in control then proceeded to operate the whole as a single business of a monopolistic nature, eliminating or greatly reducing competition. Because such *trusts* were believed to be opposed to the public interest or general welfare, there was enacted in 1890 the Sherman Antitrust Act, which was later strengthened by the Clayton Act and the Federal Trade Commission Act, both enacted in 1914.

The forms of business organization most used in recent years, for

³ L. H. Haney, *Business Organization and Combination* (Macmillan, 1914), p. 165.

bringing together for monopolistic purposes previous competitors, are the *holding company* and the amalgamation or *merger*. The former is a corporation organized to hold at least a controlling interest in the stocks of other companies. The stocks held are usually of operating companies, though there are holding companies of holding companies. The Standard Oil Company of New Jersey was changed from the *trust* type to the *holding-company* type in 1899. The United States Steel Corporation, the American Telephone and Telegraph Company, the General Motors Corporation, many of the large railroad systems, and others of the nation's largest corporations, not all monopolies, are of the holding-company type. The amalgamation or complete merger differs from the holding company in that the merged companies lose their separate existence as operating companies, being all operated as one single business unit. Because they are not forbidden by the Clayton Act, mergers effectuated through the sale of all assets of one firm to another have come to be the preferred form of business combination.

MONOPOLISTIC COMPETITION AND OLIGOPOLY

Rarity of True Monopoly. In spite of the existence of the various forms of business combination described above, true monopolies outside the telephone, the telegraph, and local public utilities are very rare in the United States. And even local utility companies are subject to a certain amount of competition as when there are both gas and electric companies in a city, competing for the business of supplying fuel and power. Both are also subject to the competition of sellers of oil and coal as fuel for heating equipment. There may be one railroad passing through a town, but trucks and busses compete with it. If a city has one newspaper or a town one drugstore, they obviously have considerable but not absolute monopoly power. If the store's prices are too high, customers in most instances can go to the next town, and if the local paper is inadequate, people can subscribe to another paper by mail.

In the national market, except for the communications industries mentioned and certain patented articles with rather special uses like glass fiber or glass cooking utensils, there are practically no examples of pure monopoly. Two companies, the Aluminum Company of America and the U.S. Shoe Machinery Company, used to be frequently cited as examples, but even their hold on the market has suffered some diminution. Before the Second World War the Aluminum Company was the sole supplier of ingot aluminum in the United States. As a result, however, of the policies embodied in the Surplus Property Act, some of the wartime aluminum-reduction plants were sold to other companies, so that now the Aluminum Company has two large competitors.

The U.S. Shoe Machinery Company's power rested in its control,

secured through merger, of all the important patents on shoemaking machinery and on its policy of leasing, not selling, the machinery to shoe manufacturers, requiring them as a condition of the lease to use its complete line of machines to the exclusion of anyone else's.⁴ In recent years, however, the invention of shoe machinery operating on entirely different principles from the U.S. Shoe Machinery Company's equipment permitted other companies to encroach on its territory, though it is still far and away the dominant factor in the field.

While there are few pure monopolies, it often happens that a group of firms, united formally in a trade association or through informal means, act in collusion as if they were a single monopoly. Such arrangements, however, are apt to be unstable, because the individual firms are under temptation to break away to seize some special advantage for themselves.

To say that there are few monopolies is not, however, to say that concentration of production and sales is the exception in American industry. Far from it. In the mass-production industries particularly there is a very high degree of concentration.

Oligopoly. We have repeatedly noted that when firms in an industry have heavy sunk, fixed costs, they tend to keep producing even though the fixed costs may not be covered for a long time. The very fact that they have sizable fixed costs also means that the declining-cost phase of their cost curves goes on for a long time before the upturn occurs. Third, to set up facilities for mass production requires great aggregations of capital. (The Kaiser Frazer Corporation, setting up in the automobile business in 1946 and 1947, required about 70 million dollars in capital.)

All these factors tend to limit the entrance of firms into the mass-production field and to make competition between them, when it exists, severe enough to eliminate any weak entrants. The result, then, is that in most mass-production industries in this country the typical situation is for a few large companies to dominate. Sometimes, as in the case of automobiles, there are in effect no small firms, just three very large ones and five or six middle-sized ones. In the farm-machinery field eight so-called full-line manufacturers make from 90 to 100 per cent of the most important implements, and a scattering of small companies make the rest.⁵ The table below indicates the extent of concentration in a few of the most important mass-production industries.

Why oligopoly does not go on to become monopoly is due to several causes: (1) The Sherman Antitrust Act, the Clayton Act of 1914, and other legislation intended to prevent monopoly have been in effect a long time. An attempt to monopolize an industry would run afoul of these

⁴ Arthur Burns, *The Decline of Competition* (McGraw-Hill, New York, 1936), pp. 11-15.

⁵ Temporary National Economic Committee, Monograph 36, 1941, p. 274.

TABLE 27. CONCENTRATION OF CONTROL IN CERTAIN MASS-PRODUCTION INDUSTRIES

Industry	Proportion of total business controlled by 3 leading firms in their line	Proportion of total business controlled by largest single firm in its line
Automobile manufacture.....	90	43
Steel manufacture.....	65	40
Rubber tires.....	65	29
Gasoline.....	58	45
Cigarette manufacture.....	80	27
Farm machinery: Binders.....	92	56
Tractors.....	76	43

SOURCE: A. C. Hoffman, "Large-scale Organization in the Food Industries," Temporary National Economic Committee, *Monograph 35*, p. 90, Table 27.

laws. (2) There is a limit to the economies of scale. If a firm gets big enough, its cost curve is almost certainly bound to turn up, if for no other reason than that its management will not be able to perform its job efficiently. Think of how difficult it would be to manage the steel or oil industry of the United States if these were concentrated in one firm. Thus the average costs of several oil firms might well be less than would be those of a single all-industry firm. (3) Personal and historical reasons and pressures may prevent firms in an oligopoly situation from merging into monopolies. (4) Further, it is one of the characteristics of an oligopoly, unlike a competitive, situation, that each firm is big enough to affect supply materially. Each firm is usually intelligent enough to know that if it, in effect, declares war on the others, they are also powerful and may retaliate so successfully as to defeat the originator of the conflict. The danger then of losing a competitive contest to the other oligopolists restrains any one of them from embarking on a price-cutting contest. Thus we often find oligopolists treating each other with great politeness—witness the prices of the five leading brands of cigarettes, which almost invariably move simultaneously, or the price of steel, which is generally the same for the basic shapes, no matter which company supplies them.

Another way in which oligopolists manifest consideration toward each other is by, as it were, keeping out of each other's backyards. The tobacco companies, for instance, have at various times been accused of bidding for tobacco alternately, not in competition with each other, in order to keep farm prices down.

The tendency of oligopolists, however, to act in unison and to share markets (which they may do by actual collusion or just by careful

observation of each other's operations) may not be due wholly to fear of starting a competitive battle, but also to the reason that each can maximize his own profits if they act together as a single monopolist would.

Methods of Competition. While oligopolists are inclined to avoid price competition, nevertheless they do compete. They do this in two ways: (1) by competing in quality and service; (2) through expenditures for advertising and other methods of pushing sales.

Thus in the case of automobiles, Plymouths, Fords, and Chevrolets are all in the same price class, but there are mechanical differences between them, and each company claims, of course, that its product is the best. Likewise with cigarettes, though the innocent smoker has great difficulty in recognizing the difference between them, nevertheless loud claims of qualitative differences are made: one brand is kind to the throat, another cures coughs, and all are somehow made of the best tobacco.

As the stress put upon service by every retailer who sells the same well-known nationally branded article at the same price indicates, this is another important way of competing. But as anyone who reads a newspaper or a magazine or listens to the radio knows, the fiercest and most expensive battles between nonprice competitors are fought by way of advertising.

Monopolistic Competition. Competition through quality, service, and positive sales effort is not the exclusive prerogative of oligopolists. Between the oligopoly and the truly competitive situation, there are a large group of industries, in both manufacturing and retailing, which are described as being *imperfectly* or *monopolistically competitive*. This apparent contradiction in terms indicates a field where sellers are differentiated, unlike the competitive case, where the product of one is indistinguishable from that of another. Therefore each seller has a market somewhat separate from that of the others. The prices paid for his product *can be* affected by the supply he puts on the market because he is to a limited extent the only supplier in his particular market. This situation, however, is unlike oligopoly or monopoly and like competition in that entry into the field is fairly free and, since the products sold by each seller are roughly similar, the supply of each seller affects the market for the others.

A good illustration of an industry subject to monopolistic competition is cosmetics. Here there are a number of well-known brands, some of whose customers will stay with them even at prices higher than those of competitors, but who will lose some business under such conditions. It is also an industry into which entry is obviously easy, to judge by the

number of firms in it. The method by which new entrants try to obtain a share of the market and old ones to retain what they have is by advertising rather than by price cutting.

These conditions resemble those of competition in that entry is easy and low prices attract some customers but are unlike competition in that some customers, because of brand differentiation, are not won over by price cuts. Competition, therefore, tends to show itself in other ways than through price cuts.

PRINCIPLES OF PRICE DETERMINATION IN MONOPOLISTIC SITUATIONS

The Individual Demand Curve under Monopoly. The prime difference between a monopolistic and a competitive situation, as presented graphically, is that the demand curve faced by a monopolistic firm is slanted, indicating that when the one firm increases the supply, the price will go down. The demand curve for a monopolist is thus like the demand curve for a competitive industry, while the curve for an individual competitor is horizontal. Under monopoly, the marginal-revenue curve slants downward and lies below the demand curve, unlike the competitor's *MR* curve, which coincides with his horizontal demand curve.

Monopoly Control of Price Limited. It is often asserted that a monopoly may charge any price which it pleases, but this statement is very misleading. It is true that a monopoly may name or designate any price which it pleases; but naming, designating, or asking a price, and obtaining it are entirely different things. Assuming a definite state of demand for a commodity and a fixed supply to be sold within a given time, a monopoly cannot secure particularly more for that supply than can be secured with competitive selling under ordinary conditions. It may even secure slightly less. If a given amount must be disposed of, price will be governed by the intensity of the desires of possible buyers for the marginal part of that supply, compared with the intensity of their desires for other things, and that intensity is not much influenced by whether the supply is in the control of one or many sellers. Advertising and other sales strategy could, of course, influence such desire in either case, and a difference in such sales strategy might lead to such an effect on demand that a slightly higher price would be received under unified control of sales. On the other hand, it is quite possible that demand would react more favorably to the sales effort under competitive selling and that with a given amount to be sold more money might be secured with competitive selling than with monopoly.

Monopoly-price Elevation Caused by Limiting Supply. Unless a monopolist can increase demand by such a method as advertising, the real basis of his capacity to elevate price to any appreciable extent in

the case of a seller's monopoly is his ability to reduce supply. In fact he would ordinarily keep the supply from being created to the same extent as would occur without monopoly. This may be shown by a graph. In this example the industry is assumed to be one which enjoys decreasing unit costs for a large part of the possible scale of production, a characteristic which is frequently true of industries that tend toward monopoly.

In Fig. 24 three of the four curves are familiar. *AC* is the curve of average cost per unit at various scales of operation. *MC* is the curve of marginal costs. *DD'* is the familiar demand curve for the product of the

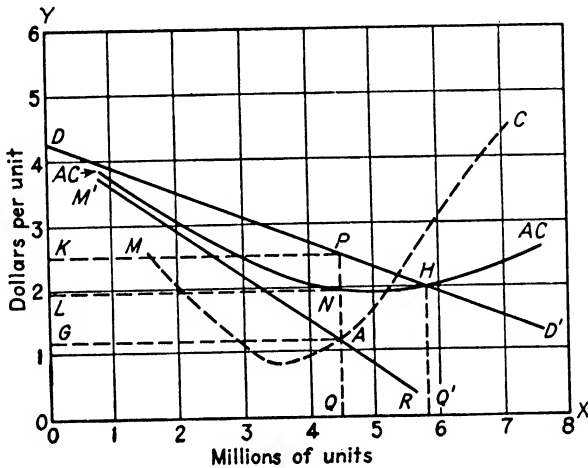


FIG. 24. Value under monopoly.

industry. In this case, which is one of complete monopoly, it is also the demand curve for the output of the particular firm which holds the monopoly.

The fourth curve in Fig. 24, *M'R*, is the marginal-revenue curve, or the curve showing the amount added to the seller's gross receipts by selling an additional unit of product. This under monopoly is quite different from what it is under competition for a single firm, because the monopolist furnishes the whole supply. According to Fig. 24, 3 million units can be sold for \$3.12 a unit, or a total of \$9,360,000. The monopolist in planning his operations will compare his probable total income at this output with his probable total income at some other output, such as 3.25 million units. If the demand curve is as is shown in the chart, an additional 250,000 units, however, can be sold at only \$3 per unit, or a total of \$750,000. Now he will be able to get only \$3 apiece for the 3

million units for which he previously obtained \$3.12, or 12 cents less per unit. This reduction in the amount received for the 3 million units, or

$$3,000,000 \times \$0.12 = \$360,000,$$

must be subtracted from the \$750,000 to find the additional receipts. This remainder is \$390,000, which is the added total income received by adding the last block of 250,000 units. Dividing \$390,000 by 250,000 gives an average of \$1.51 added revenue per unit received for this block of added or marginal units. *M'R*, the marginal-revenue curve, shows the marginal receipts for the various quantities which might be sold, though it is drawn to show additions of single units, rather than blocks of 250,000 units at a time. This is like the situation in Fig. 20, Chap. 10.

Now, at what point will the monopolist fix his price? Under competition, if the supply curve were similar to *AC* in Fig. 24, price would be at *H* and would equal *HQ'*. Under competition no individual seller is encouraged to reduce volume, because his proportion of the total supply is so small that he cannot influence the price. No wheat farmer's decision to sell or not sell his crop will influence the wheat price.

The monopolist will fix the price at the point at which he thinks that his profits will be largest, at the quantity for which the marginal (additional) revenue just equals the marginal (additional) costs. As long as marginal (added) revenue exceeds marginal (added) costs the total profits will be increased by increasing production and sales. In Fig. 24 the marginal-revenue curve *M'R* intersects the marginal-cost curve *MC* at *A*. The quantity *GA* or *OQ* is the quantity which will yield the greatest profit. The price per unit at which this quantity (*OQ*) can be sold is measured by the distance the demand curve is above the base at point *Q*. That distance is *PQ*, and therefore *PQ* is the price which will yield the greatest profit.

Because for the quantity *OQ* the total cost per unit is *NQ*, the monopolist, by charging a price at *PQ* per unit, receives a pure profit of *NP* per unit. On *OQ* units he receives a total pure profit of *NP* per unit on *OQ* or *LN* units, this total being represented on the chart by the rectangle *PKLN*. Such a rectangle representing pure profit is largest for the quantity for which marginal cost and marginal revenue are equal.

It will be noticed that this equilibrium situation under monopoly resembles that under competition in that output is carried to the point where marginal revenue and marginal cost are equal. The difference is that there is profit in the monopoly-equilibrium situation, but no profits or losses in the competitive equilibrium situation.

Price under Monopolistic Competition. Under oligopoly there is no determinate equilibrium point, but under certain conditions one can be indicated for a situation of monopolistic competition. If we take the

case of an industry like the cosmetic industry already cited, where entry is easy but products are differentiated, we may start with a situation where the firms are making profits. If we assume for the sake of simplicity that all firms in the industry are alike, then they will all try to stay at the high profit point where $MR=MC$. Figure 24 can then illustrate this situation for each firm here, as it does for the high-profit point under monopoly, except that under monopolistic competition the slope of the single firm's demand curve is likely to be flatter than under monopoly. The lesser slope is indicative of the fact that there is competition in the industry.

Since entry is possible here, unlike monopoly where it is impossible and oligopoly where it is very difficult, this is not an equilibrium situation for the industry. The profits will attract new firms into the industry. Because of consumer preference for particular brands, however, the new entrants try to attract customers, not so much by cutting prices, as by expanding selling expenses. The old firms will do likewise to hold their position. The result is that instead of price being cut to equal cost of production, as under competition, the cost of production *and selling* goes up to meet price. The cost curve moves up and to the right till it touches the demand curve, at N on Fig. 24.

When a no-profit position is reached, it is a point of equilibrium for both the firm and the industry, for each firm is then at the highest profit point possible, and no firms are attracted in or old ones forced out.

Except that the point of equilibrium is not at the lowest point of the average cost (AC) curve, this equilibrium situation is apparently like that under competition, in that there is no profit or loss at the output where marginal revenue and cost are equal. It is basically unlike competition, however, in that the equilibrium is unstable, since any one of the firms can alter its demand curve (and those of its competitors) by further selling expenditures, while under competition the demand curve is independent of the action of any one seller.

While on the one hand there is a tendency for costs and therefore prices to be greater under monopolistic conditions than under pure competition because advertising expenses have to be covered, nevertheless, since large firms are involved, especially in an oligopoly situation, these may often be offset by the economies of scale.

Monopolistic Competition and Price Rigidity. The exposition of price under monopolistic competition enables us to qualify and clarify the discussion of the relation of fixed and variable costs to price, which was presented on page 230. At that point in the discussion of competitive prices it was concluded that, if an industry with a high proportion of fixed costs suffered a decline of demand, the firms in that industry, in case thoroughly competitive conditions prevailed, would tend to con-

tinue to produce at approximately full volume as long as variable costs were covered. Yet we know as a matter of fact that in many manufacturing industries with high fixed costs the prices which are quoted decline little or not at all in response to a decrease of demand.

There is no particular enigma here. If we take the case of agriculture, used in the last chapter, as an industry of high fixed costs, we must remember that in it are so many producers that no farmer by reducing volume can appreciably affect price. In an oligopolistic industry, however, where each firm's demand curve is less than perfectly elastic, the chances are that the firm's new marginal-revenue curve after the decline of demand will warrant a price approximating the price which prevailed before the decline of demand. Furthermore, each seller knows that his price cuts will be met by other sellers. Therefore, he can expect to gain little volume by price cutting. He fears that price cuts will encourage wholesalers and retailers to expect further cuts and to postpone purchases. And he thinks that if consumers become used to lower prices it will be difficult to raise prices again. The key to price rigidity, or flexibility, is the individual seller's feeling of responsibility, or lack of responsibility, for what happens to the price.

Monopoly and Class Price. Many devices are used by monopolists to take advantage of the different buying power of various classes of possible buyers. In book publishing, for example, the first edition may be limited in quantity and sold only for a price which none but the relatively well-to-do can afford to pay. As soon as advantage has been taken of sales to this more wealthy class of buyers, another edition may be offered at a much lower price. Later a third edition may be offered at a still lower price. The different prices put upon different seats in a theater is another example of how monopolists try to take advantage of the varying degrees of willingness to pay, of different classes of people. Certain types of sport models in automobiles may cost the manufacturer not more but rather less to produce than the standard models but are sold at a higher price to the type of customer who is willing to pay an extra price for something different and distinctive. Innumerable other examples may be found of the efforts of monopolists to tap the different abilities or degrees of willingness with which different groups of customers pay. *Class price, therefore, is a difference of price secured from different classes of buyers by means of making a difference of minor consequence in substantially the same good.* Other forms of monopolistic discrimination will receive our attention in later pages.

Monopoly Does Not Guarantee a Profit. The mere fact that the producer of a given commodity possesses a monopoly of its production and sale does not guarantee him a profit. Many efforts to produce and sell commodities under monopoly conditions established by a patent or other-

wise have resulted in failure and bankruptcy. Unless a sufficient demand for the good exists, or can be created, the monopolist is powerless in his efforts to attain a profit solely as a result of his ability to restrict supply by controlling production.

In case, however, that a large demand for a good exists or may be developed, the monopolist may prevent the happening of that which invariably occurs under ordinary competition. This is the entrance of new producers, or the increase of production by existing producers, whereby the price will be forced downward as long as the producers earn any pure profit.

Factors Influencing the Height of Monopolistic Prices. How much the price under monopoly or under monopolistic competition will be above a competitive price will depend on the elasticity of demand and the change in costs with changes in volume. The more inelastic the demand, the steeper will be the slope of the marginal-revenue curve. The latter curve will intersect the marginal-cost curve at a smaller volume, and a higher price will be the result. A perpendicular to the base line of the graph at that point will intersect the demand curve at a higher price. Under monopolistic competition the steepness of the firm's demand curve is based on the fewness of the sellers and the degree of product differentiation. Presumably, the fewer the number of sellers, and the more successful the differentiation, the higher will be the price. Otherwise expressed, the more elastic the demand for his product the larger will be the quantity which it will be profitable for the monopolist to place on the market.

The quickness and steepness with which marginal costs rise as volume increases will, likewise, affect the location of the most profitable price. If it is an industry which obtains large economies with an increased scale of operations, the marginal-cost curve will intersect the marginal-revenue curve at a large volume, and a relatively low price will be the most profitable. Fortunately, industries with a tendency toward monopoly usually have such a cost situation, rather than one in which marginal costs rise quickly as volume increases beyond a small amount.

Limits to Monopoly Price. In spite of the often-repeated statement that he who possesses a monopoly may ask and secure any price which he desires, there are a number of factors which under most circumstances definitely limit monopoly price and monopoly profits. The most important of these limits are the following:

1. *The Limit in Demand.* This has already been mentioned. Even a monopolist cannot sell anything for a price which buyers are unwilling to pay. Because of this factor, it is often to the advantage of a monopolist to sell a large quantity at a small profit per unit rather than a small quantity at a large profit per unit. Furthermore, because demand

changes with the passage of time, it has come to pass that what were at one time considered very valuable monopolies have at later times become practically worthless.

2. *The Competition of Substitutes.* This is really only a special phase of the limit in demand. Most of the goods capable of being monopolized are not absolutely essential to a large number of consumers. Therefore, though the monopolist is able to restrict the production and sale by others of the particular good which he produces, usually he is powerless to control the production and sale of something which may very readily be substituted for it. It is this competition of substitutes which causes most cases of monopoly to be only a degree of monopoly. Many a seller may truthfully assert concerning his good that there is nothing exactly like it. Nevertheless, if he attempts to charge too high a price, the buyer will find something which will satisfactorily take its place.

3. *Potential Competition.* This is particularly significant as a limiting factor in partial monopolies. To illustrate, the United States Steel Corporation has been charged with having, by understandings and agreements with other steel companies, exercised monopolistic influence in fixing prices of various kinds of steel products and having held production to what could be sold at such prices. Even if it is assumed that this has been done and is being done, there are yet definite limits to the extent to which it can continuously be done. The prevalence of too high a price is a strong stimulus to other competitors to undertake the production and sale of the product for which the price has been held so high as to yield a large pure profit.

EFFECTS OF LIMITING COMPETITION

Restrictive Effect. An important effect of a monopolistic situation is that the sellers may charge higher prices and thus restrict output below what it would be otherwise. This not only disadvantages the consumer, but it limits the opportunity of labor and capital to engage in the monopolized industry. Thus, the returns in agriculture, retailing, automobile repairing, and other nonmonopolized industries are less than they would be otherwise, yet workers in these industries cannot shift freely into others because the existence of monopoly elements, by tending to restrict output, restricts employment opportunities. Further, the receipts of those selling to a monopolized industry are lowered because their market is smaller than it would be otherwise.

Monopoly based upon artificial restriction of output or production cannot promote the general welfare, because the general economic welfare is not promoted by a general scarcity of goods. Monopoly brings about inequality of returns. Those who defend it have their eyes only on particular industries to which they see a benefit from restriction. But

these favored groups benefit by restriction only so long as others do not practice a like restriction. If a like restriction is practiced in all lines of production, all will be in a worse condition.

Monopoly Retards Economic Adjustments. Prices charged by monopolies are distinctly slow in being adjusted downward. In times of depression, as noted previously, industries in which competition is limited tend to maintain price levels and reduce output. A great many economists are of the opinion that rapid downward price adjustments would tend to revive business activity by bringing buyers into the market. Others, however, believe that even severe downward price movements may not attract buyers in a time of a collapse in demand such as occurred during the Great Depression, that the maintenance of prices may actually be a beneficial stabilizing influence, and that in any case our whole economy has become so rigid and unadjustable that rapid reductions in prices do more harm than good.

Because monopoly means the presence of vested interest, it may retard the adoption of progressive improvements which would be adopted under more competitive conditions. A vested interest always resists change which threatens to endanger income on its present investments. When a monopoly controls all the possibilities of putting an improvement into operation, it is more likely to maintain things as they are than would an independent competitor who has not so much to lose from a change. Monopoly, therefore, may throttle improvement.

Benefits Claimed for Monopoly. For monopolies or partial monopolies there are frequently claimed a number of benefits in addition to the commonly recognized advantages of natural monopolies and of certain legal monopolies. Among such benefits are: (1) that a monopoly price is not necessarily a high price; (2) that monopoly eliminates wastes which are invariably present in competition; (3) that monopoly stabilizes prices, and that this is highly desirable; (4) that monopoly takes the uncertainty out of business; (5) that monopoly confers advantages of scale.

Without doubt under certain circumstances these claims have a degree of validity. The important questions are: (1) to what extent they are true, and (2), in case they apply, whether their results are sufficiently beneficial to offset the evils of monopoly. As to the first one of these claims, it is true that a monopoly price is not necessarily a high price. But, in practice, monopolies will usually charge all that the traffic will bear and the law permits.

Monopolies may eliminate wastes, and it is the elimination of waste which is the justification for granting to a public utility a legal monopoly, subject, however, to regulation by the public. In practice, monopolies may be the cause of waste as well as the cause of its elimination. Mon-

opoly tends to become self-satisfied. Furthermore, it tends to result in uniformity, and, as has been well said, "To the extent that uniformity displaces variety the chances of improvement of method are diminished. Improvement comes mainly through comparison, experimentation, trial of alternatives—sporadically and irregularly."⁶ Apparently the greatest wastes under present competitive conditions which it appears might be appreciably reduced by regulated monopolies are wastes of natural resources in such industries as those of petroleum, soft coal, and lumber.

The claim that monopoly stabilizes prices is largely true, in so far as the monopolized goods are concerned. As was pointed out on page 211, this may be a disadvantage in times of depression. On the other hand, while monopolies are slow to move prices down, they are also slow—although not so slow—to move prices up. Therefore monopolistic price policy, with its tendency toward stability, may be a useful inhibitor of price rises in a time of inflation. This tendency toward stability, and the fact that price policy was set by a few firms, made price regulation in monopolistic and oligopolistic industries relatively easy during the Second World War.⁷

The claim that monopoly takes the uncertainty out of business is like most of the other claims; it has much truth in so far as the fortunate members of the monopoly are concerned, but the reverse is largely true for those who are left outside of the protection of the monopoly.

While attempts to attain a monopoly or partial monopoly position may cause an industry to be concentrated in fewer firms than would be the case under competition, and this concentration may afford the opportunity of raising prices and restricting output, there may be certain compensations. Larger firms may engage in research that smaller ones can not afford and may therefore be able to introduce new and better products more quickly than smaller ones. Large firms also can afford careful quality control and thus assure the consumer a better and more closely standardized product. More important, they may be able to practice economies in buying and manufacture which in the end will result in a less costly product than could be made by small, separate firms. Concentration may make possible a reorganization of productive techniques that could not be achieved by many individual firms.

While firms in a monopolistic or semimonopolistic situation may avoid price competition, they often compete in other ways, through the service they offer and through the quality of the product. To some extent,

⁶ Myron W. Watkins, *Industrial Combination and Public Policy* (Houghton Mifflin, 1927), p. 53.

⁷ See article by J. K. Galbraith, "Reflections on Price Control," *Quarterly Journal of Economics*, August, 1946.

competition in this form, which benefits the consumer, offsets the restrictions on price competition.

MONOPOLISTIC METHODS

Under this head we shall consider a few of the devices used by those in a partially monopolistic position, in order to eliminate such competitors as exist and in order to prevent other competitors from becoming established. Technically all these monopolistic practices, except "dumping" abroad, are illegal, yet, as new cases are brought before the courts, it becomes evident that these practices are used from time to time, at least until the courts order their cessation.

Local and Temporary Price Wars. Local, temporary price cutting has been widely used by partial monopolies. It was much used by the Standard Oil Company in the days when that company was eliminating competitors by the ruthless methods which caused it to be found guilty of violating the Sherman Act and to be ordered dissolved by the U.S. Supreme Court. The method consists of cutting prices wherever a competitor is to be eliminated, meanwhile, however, maintaining them at a high level elsewhere. As soon as the competitor has been eliminated, the price is raised in the area where it was cut. Where branded or trade-marked goods are involved, the price cutting may be done under a brand or trade-mark different from the company's main one. It may also be done by a "dummy" subsidiary company.

In some price wars, prices are everywhere reduced to a "cutthroat" basis, by which is meant a voluntary reduction to a price so low that expenses are not being covered, with the idea that the competitor will be eliminated first and prices will then be raised sufficiently to make up for the loss. Local price cutting within a limited area is much more prevalent as a form of price war than general price cutting by a company selling over a wide area, and is a tactic chain stores are often accused of using against independents.

Regional Discrimination. By this is meant rather continuous selling at higher prices in some markets than in others. In towns or regions where only a few "regular" companies supply gasoline, and a monopolistic condition, therefore, may be maintained, the price is often held higher by several times the difference in freight rate from the source of supply than the price which is charged where there is competition. A sugar refinery may charge more for sugar to be delivered at or near the refinery than is charged by it for delivered sales at points many hundreds of miles away where competition prevails.

For many years, until at least partly discontinued in 1924 on order of the Federal Trade Commission, there prevailed in the steel business a

system of pricing known as *Pittsburgh plus*. Prices everywhere were based on prices at Pittsburgh, being the Pittsburgh price plus the freight from Pittsburgh to the point of delivery, regardless of where the steel mill was located or where the delivery was made. A mill located in Chicago received for steel delivered in Chicago the Pittsburgh price plus freight from Pittsburgh. For sales to be delivered in Columbus, Ohio, or Cleveland, Ohio, it also quoted a price calculated to make the steel delivered at those points cost the buyer the Pittsburgh price plus freight from Pittsburgh. Obviously, any mill shipping toward Pittsburgh, as a Chicago mill shipping to Cleveland, received a lower price f.o.b. at the mill for these toward-Pittsburgh sales than it received for local deliveries in Chicago or for shipments in a direction from Pittsburgh. Prices were named by the United States Steel Corporation, which since it was organized in 1900 has been doing from 50 to 40 per cent of the total steel business of the country, and other companies quoted like prices. Apparently these prices were considered "fair" by the smaller companies, and it was considered safer in most instances to quote the same prices than to try to get more business by underselling and thus to provoke a local or general price war.

Incidentally, this last points to another method of restricting competition, known as *price leadership*. In such instances the smaller firms follow the price policy of the dominant firm. Not only does this obviate price wars, but it may be a way in which an oligopoly can act as if it were a monopoly and enhance profits.

That the government thinks that basing-point pricing and other associated monopoly practices are still very much in evidence is revealed by a complaint against the American Iron and Steel Institute and a number of major steel companies, filed in August, 1947, by the Federal Trade Commission.⁸ This complaint alleges that the steel companies use basing-point system—after Pittsburgh was abandoned as the sole price basing point in 1924, some twenty-odd cities were designated to replace it—that the prices of each company were identical, that prices were quoted cooperatively, and that in July, 1947, each company had increased prices an identical amount, thus indicating that all the companies were acting collectively like a unified monopoly.

In April, 1948, in the Cement case, the Supreme Court held a similar arrangement in that industry, whereby prices were established by taking basing-point costs and adding transportation, to be in contravention to the Antitrust laws. In effect the Court said that prices should be set in reference to cost at the actual point of origin, whether it was a basing point or not. After this decision, all the leading steel companies announced that they would hereafter quote prices not in terms of basing

⁸ *The New York Times*, Aug. 18, 1947, p. 3.

point plus freight charges, but at the actual point of manufacture, leaving freight to be paid by the buyer.

One form of regional discrimination is *dumping* in international trade. By this is meant selling for a lower price to a foreign market than to a domestic one. Such dumping is of course evidence of domestic monopoly. If domestic prices are on a competitive basis, the company which cuts prices on foreign sales is "holding the umbrella" over its competitors. It receives for all its sales an average of the higher domestic and lower foreign prices. Its competitors are able to take advantage of this and sell all their output on the domestic market at an average price higher than the average secured by the dumping firm. This cannot and will not continue where there is real competition, as the firm which practices it is giving its competitors an advantage which no firm can afford to give under genuinely competitive conditions.

International dumping is sometimes limited or prohibited by *cartel* agreements. A cartel, as the word is generally used nowadays, means a group of firms in more than one country which have combined to carry out certain monopolistic practices. Among the more usual cartel tactics were: (1) limitations on production—sometimes companies by agreement paid fines to the central cartel office if their output exceeded a set quota; and (2) sharing the market. The American member, for instance, would agree not to sell in certain South American countries, in return for the German company's pledge not to invade the American market. Among the many commodities subject to international cartel agreements were fertilizers, electric-light bulbs, and certain oil and chemical products. The Second World War, which shattered so many international arrangements, also disrupted many cartels, the more so as German industry had been apparently most active in promoting them.

Dealer Intimidation. This device is used in a great variety of forms, of which only a few will be mentioned here. The monopoly often supplies more than one product but possesses an effective monopoly on only one product. In such a case it may require dealers to refrain from handling competitors' products of various other kinds in order to secure a supply of the monopolized product. A contract calling for such an arrangement is known as a *tying contract*, and this is one of the monopolistic evils specifically prohibited by the Clayton Act of 1914. The U.S. Shoe Machinery Company, which employs such contracts, escapes this legal prohibition because it leases but does not sell its products to shoe manufacturers.

Profits as Evidence of Monopoly. We have already cited some of the characteristics of monopoly, such as the concentration of an industry in a few hands, the sharing of markets, and simultaneity of price movements. Since theoretically, at least, a monopolist ought to be in a profit-

making situation as compared to the no-profit situation of a competitor, a history of profits higher than average ought to be evidence that monopolistic elements are present. Unfortunately in actuality things are not so simple. Relative profits are difficult to measure. One of the common ways of calculating profits is to relate them to net worth. But net worth is figured differently by different accountants. One may include good will, one may not; one may estimate depreciation on a "straight-line" basis, another may use a different system; and so on.

The comparability of profits aside, there are other difficulties. For one thing, it will be remembered that monopolistic competition as distinguished from monopoly may not be characterized by profits. For another thing, the owners of a firm enjoying monopoly advantages may have overestimated demand and invested too much capital in their business or, because of other mistakes, made no profits. In time of depression monopolies or partial monopolies lose money like everyone else. In times of rapidly rising demand, as in the years after the Second World War, monopolistic firms are often not prone to raise prices as rapidly as those in competitive industries, and as a result their profits may not increase relatively as fast. This is strikingly brought out by the profit figures for the first six months of 1947, when the average ratio of profit to net worth for all private manufacturing corporations was 26.6 per cent. For food manufacturers it was 30.2 per cent, for textile products it was 35.9 per cent, for primary iron and steel, 21 per cent, and for tobacco manufacturers, 15 per cent.⁹ Of the industries cited, the two with higher than average profits would generally be considered as characterized by a smaller degree of concentration than the two with below-average profits.

MONOPOLY REGULATION AND CONTROL

Monopolies which unduly or unreasonably restrained trade have always been illegal under the English common law. As that law is the basis of law in most of our states, such monopolies could be prosecuted without specific statutes providing for their illegality. However, to provide for the possibility for Federal prosecution, as well as to make the law more specific, the Sherman Antitrust Act was passed in 1890. Many states passed additional laws about the same time. At later dates additional laws relating to monopolies have been enacted.

The Sherman Antitrust Act. The general character of the Sherman Act may be shown by quoting from the first two sections:

Sec. 1. Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is hereby declared to be illegal. . . .

⁹ *Economic Report of the President, January, 1948, p. 128.*

Sec. 2. Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of misdemeanor. . . .

It will be noted that the Sherman Act prohibits *every contract, combination in the form of trust or otherwise, or conspiracy in restraint of trade or commerce, or attempt to monopolize any part of commerce*. The problem which the courts have to decide when cases charging violation of the Sherman Act are brought before them is: Has there been an agreement to restrain trade through replacing competition by monopoly in the determination of prices of goods, which except for such conspiracy or agreement would have had their prices determined by competitive forces?

The Clayton Act. This act was passed by Congress in 1914 primarily for two purposes: (1) to make more specific the general terms of the Sherman Act, and (2) to legalize labor unions and remove them from the danger of prosecution under the Sherman Act. A few of the respects in which the Clayton Act is more specific than the Sherman Act are the following: (1) the acquisition of stock of one corporation by another corporation is prohibited when the effect is "to substantially lessen competition," or "to tend to create a monopoly"; (2) interlocking directorates of the community-of-interest type are prohibited when the effect is to create monopolistic conditions; (3) various forms of *unfair competition* are specifically prohibited, including the *tying contract* already mentioned and unjustifiable discrimination in prices between different customers.

The Federal Trade Commission, composed of five members appointed by the President, was established in 1914, in order to make the antitrust legislation more effective and eliminate unfair competitive practices. The commission has large powers of investigation and may require annual and special reports from businesses other than banks and common carriers engaged in interstate commerce. It may hold hearings, require the attendance of witnesses, and has the right to copy any documentary evidence. It must keep a full written record of testimony. Whenever it reaches the conclusion that unfair competition exists, it may issue an order requiring "such person, partnership, or corporation to cease and desist from using such method of competition." If this order is not obeyed the commission appeals to the courts. In the procedure before the courts, "the findings of the commission, as to the facts, if supported by evidence shall be conclusive," though either party may apply to the court for leave to adduce additional evidence. The commission is authorized and directed to suggest to the court the form of decree which it believes to be justified, though this order may be modified by the court.

Complaints by the commission are to be given precedence over other cases pending before the court.

The general effect of the Federal Trade Commission Act has been to cast much light on unfair competitive practices and to expedite prosecutions under the antitrust laws. It is maintained that the most important work of the commission has been to secure reforms with the voluntary cooperation of the trades investigated—that the persons employing the practices complained of reformed their practices in order to avoid being prosecuted before the courts.

Present Situation in Regard to Concentration. In spite of the work of the Federal Trade Commission and of the even more energetic activities of the Antitrust Division of the Department of Justice, which administers the Sherman Act, in spite of the far-reaching investigations of the Temporary National Economic Committee (1938 to 1941), there has been no lessening of concentration in industry in this country. Additional legislation, the most notable example being the Robinson-Patman Act of 1936, has been passed to supplement the earlier laws. This act was intended to prevent large buyers from obtaining quantity discounts which were not justified by the actual economics involved in producing or selling a large order. The general rule set by this law is that a seller can sell to various buyers at different prices only when, and to the extent that, different orders represent actual differences in the sellers' cost of doing business. But the Robinson-Patman and other antimonopoly acts have not been effective in reducing business concentration, which is as all-pervading now as it has been for the past fifty years.

In fact, though national policy on the surface is directed to reduce concentration and curb monopoly, certain recent laws have tended in quite the opposite direction. The famous National Industrial Recovery Act, in effect from 1933 to 1935, specifically empowered businesses to agree on policies in regard to wages, working conditions, prices, and selling practices, a form of agreement strictly forbidden by the Sherman Act. During the Second World War, the activities of the Antitrust Division were in large part suspended, and still on the books is the Miller-Tydings Act of 1935, which gives the manufacturer power over the resale price of his goods. This law strengthens one of the most invidious forms of monopolistic competition in this country—the nationally advertised brand.

Why do monopolies persist? Why does government policy, though on the surface antimonopolist, in actual practice often promote concentration? The answer is probably to be found in the economic necessities of the case. *Mass production, which to operate successfully needs large producing units and a wide market—which means a large marketing organization—by its very nature must be carried on by large firms.* An

industry composed of large firms almost invariably presents elements of monopoly.

Monopoly, however, affords a position in the economy which no private firm should have. In the case of public utilities the exercise of this power is regulated by law. Since industrial monopolies are apparently here to stay, since attempts to break them up to restore the benefits of competition have been futile, should they not also be regulated? Some people concerned with monopoly problems are of this opinion.

There is another possibility which lies in what might be called inter-industry competition. As retailing has become more and more a business of very large mass selling, firms like the great food chains, mail-order houses, and department-store chains, which have the financial resources, have engaged in manufacturing. If makers of tires, to take an actual case, attempt to raise prices so high that sales are reduced, a mail-order house anxious to sell in as great a volume as possible at low prices may in effect become a tire manufacturer itself and cut prices. Thus tendencies to monopoly among manufacturers may be checked by the interest of big retailers in expanding mass distribution.

Beyond Monopoly. It may be that in the future government policy may not be concerned so much with the problem of preventing or checking monopoly as it has in the past, the more so as the government's efforts have not been markedly successful, and indeed may run counter to the economic current. What may concern the government more in the future is not so much attempts to monopolize a particular industry as the power which can be exercised by large firms whether directed against their competitors or not. One example of how important the policy of a single large firm may be is afforded by the Ford Motor Company's several months' shutdown in 1926 to change models which, according to some authorities, occasioned the minor business recession of that year because this billion-dollar company stopped buying and selling during that time. The government may consider it more important to influence such decisions than to prevent particular firms from gaining monopolistic advantage.

We live in an era of business giants that appear here to stay, and the government should perhaps be more concerned with trying to get them to work for the common good than with indulging in more or less futile attempts to eliminate them.

Questions and Problems

1. Define a monopoly.
2. Explain the nature of buyers' and sellers' monopolies. To what extent do they overlap?
3. What is a public monopoly? Give examples illustrating two kinds.
4. Explain three different kinds of monopoly classified as to origin.

5. What characteristics of an industry or market give rise to monopolistic competition? Give illustrations.
6. Give at least five illustrations of class price by partial monopolies.
7. Summarize the limits to monopoly control of price.
8. What benefits are claimed for monopoly, and to what extent are these claims valid?
9. Take the case of an industry which has been primarily competitive. Show by means of a graph the effects of a successful brand-advertising campaign by one firm on that firm's costs, demand curve, marginal-revenue curve, and price. Then suppose three other firms "fight back" by advertising campaigns of their own. What is the effect on the demand curve of the first firm? Are any of the firms now better off than before the original move toward differentiation?
10. Summarize monopoly tactics and mention some illustrations of them.
11. Name one business organization not mentioned in the text which you consider a monopoly, and summarize the evidence which leads you to consider it a monopoly.

Suggested Readings

1. A. R. Burns, *The Decline of Competition* (1936), presents the argument that effective competition is gone permanently from a large part of our business and that a plan of control must be set up.
2. A. L. Meyers, *Elements of Modern Economics* (1941), Chaps. 9 and 10, and A. M. McIsaac and J. G. Smith, *Instruction to Economic Analysis* (1938), Chaps. 7 to 9, are recommended as excellent brief discussions of price under monopolistic competition.
3. Edward Chamberlin, *The Theory of Monopolistic Competition* (1938), treats that subject in an extended and more technical manner.
4. Walton Hamilton and Associates, *Prices and Price Policies* (1938), contains a series of essays on how prices are set in a number of important industries under imperfect competition.
5. Federal Trade Commission, *The Merger Movement* (1948), an account of how large firms are growing larger by absorbing smaller ones, and *Reports on International Steel and Electrical Equipment Cartels* (1948), which describe the methods used for sharing international markets, are recent and interesting.
6. Matthew Josephson, *The Robber Barons* (1934), contains colorful accounts of the making of some great fortunes by monopolistic methods.
7. The following reports of the Temporary National Economic Committee will be of interest: No. 16, W. Hamilton and I. Till, "Antitrust in Action"; No. 21, C. Wilcox, "Competition and Monopoly in American Industry." The "Final Report of the Executive Secretary" sums up the work of the committee.
8. Corwin Edwards, *Maintaining Competition* (1949), is a new and dynamic approach to the antitrust problem.

CHAPTER 12

MONOPOLY AND AGRICULTURE

Those persons who are employed in agriculture or interested in the welfare of agriculture are concerned with the question of monopoly from two points of view. From the first point of view the question may be expressed as follows: To what extent and how may farmers practice monopolistic price fixing? From the second point of view the question may be worded: To what extent is the farmer, or may he be, the victim of monopolistic price fixing by either buyers' or sellers' monopolies controlled by others?

THE FARMER AS A MONOPOLIST

The Individual Farmer as a Monopolist. In a few rare cases the individual farmer may occupy a position involving some degree of monopoly. An illustration of such a position may be that of a livestock breeder whose breeding stock is widely held in high esteem. Such breeders have been known to put an arbitrarily determined minimum price (a rather high one) on animals to be sold for breeding purposes, and to practice what is essentially *dumping*, with regard to all animals for which no market for breeding purposes can be found at these prices, by selling them in such a manner as to be assured that they will be promptly slaughtered. In such a case the farmer as truly names the price at which his product—that is, the breeding stock—is sold, and limits production to what may be sold at that price, as do some other sellers of products of which they are said to have a monopoly. At least the farmer as seller in such a case *names* the price.

Careful attention should be given to the characteristics of a good which enable the single seller thus to name its price. Most outstanding is the fact that the seller controls the coming into existence of the entire supply of that particular good, which good, at least to some degree, is unique. No other farmer may have livestock for breeding purposes exactly like that of farmer Smith. This uniqueness may be to a large degree only a matter of opinion or imagination. Trade-marked goods often have a price advantage over those not trade-marked, and though the quality of the unadvertised, untrade-marked goods may be higher, more of the former will be bought than of the latter. In such an in-

stance and in the great majority of cases where reputation is more important than real merit, the qualities of the good are inscrutable—that is, the real merit cannot be readily ascertained but is hidden, and the good has been bought on faith. In such cases the seller may create the belief in *inscrutable* qualities which do not really exist.

Again the *good* which is really sold may be not only the commodity but a certain service which is supplied with the commodity. Different retail stores may secure different prices for commodities very little different in *intrinsic value* partly because the intrinsic value of the goods is not easy to recognize, and partly because the retail store sells in each sale not only the commodity but certain services, such as convenience of location of the store, pleasant surroundings in which to trade, personal attention, as well as sometimes guarantees of quality, credit, delivery, etc. The buyer is willing to pay a higher price in some stores for the sake of this service. In a large city one restaurant may charge twice as much as another restaurant within the same block, and sometimes in the same hotel, for substantially the same food, because what is sold is not simply food but service also. Where selling by the farmer includes such service items, he can name the prices for his products to the same extent as can the merchants or others who sell goods under similar circumstances.

In respect to the vast majority of their products, however, farmers are in a position different from those of the above illustrations. The products of any farmer are so much like those of other farmers that the buyers to whom they must be sold can see no outstanding individual differences, and they feel quite competent to judge the extent of the differences which do exist. The fact that farmers as a rule sell their products not to final consumers, but to such expert judges of intrinsic value as millers and meat packers, interferes with their ability to develop a belief in peculiarly distinctive values by such means as advertising. The amount of distinctive service furnished to the buyer with the commodity by the farmer usually is relatively small. The results are that the products of different farmers will compete with each other; that there will be but one price (or approximately so) for a given commodity of a given quality or grade in a given market at a given time; and that the price which prevails for a product will vary from time to time, in order that price may perform its function of equilibrating supply and demand. Though farmers do not generally sell with their products such unique services as those supplied by retailers, when they do this, they have about the same capacity to *name* the price as does the retailer.

Collective Monopoly by Farmers. Because farm products essentially alike are produced and supplied to the market by so many different farmers, it follows that, if farmers are to practice monopolistic price fixing to any appreciable extent, they must do so acting together. It

must be a monopoly by agreement. This brings us to the question: To what extent may farmers through agreements or by cooperative associations control the prices of their products, provided that restricted production is not enforced by the government? A careful study of historical events and a close analysis of the principles involved lead to the conclusion that with some commodities this may be done to a very slight extent, but that its possibilities vary according to the commodity and the circumstances and that, in general, especially for the chief agricultural staples, they are of relatively slight importance.

To control the prices of most farm products to any appreciable degree for any extended period of time, farmers must be able to control not only the selling of those products but their creation. However, it is practically impossible through cooperative associations depending on voluntary group action to keep an individual farmer from producing products if he thinks it is going to be more profitable for him as an individual to produce them than not to produce them. Each farmer individually adds so little to the total supply of a product within a given market area that his personal addition to that supply has practically no effect on the price. Accordingly, it is not to the individual's advantage for him personally to reduce production solely for the purpose of enhancing the price; and, because of the great number of farmers and their isolation from each other, it is very difficult under all conditions and impossible under most conditions to bring about by joint action reduction of supply for the sake of enhancing price.

The possibilities of controlling prices of farm products through organization are different with fluid market milk from what they are with butter, different with lemons from what they are with apples, and different with rice from what they are with wheat. Certain things that have been done by producers' organizations in influencing the prices of some of the products just named may properly be called *controlling the price*, provided it is recognized that the degree of control is limited. But much popular discussion of price control through organization reflects a woeful lack of appreciation of its limitations and its dangers.

A Tobacco Monopoly. Probably as successful a case of reduction of production through organized effort as has occurred in the United States is that of Burley tobacco in 1908. The events have been vividly summarized by Professor B. H. Hibbard as follows:

In the Black Patch the growers of tobacco had felt that until about 1904 or 1905 there had been genuine competition among the tobacco buyers. After that time the supposed competitors rode in the same buggies, or divided up the territories and paid a price apparently fixed previously by agreement. The farmers were aroused and formed an association of some forty thousand tobacco growers. The purpose was to raise the price of tobacco from 5 or 6 cents a pound to 11

cents. Not all growers were willing to join, and an unfortunate plan of compulsion was adopted. The so-called "Night Riders" visited the laggard farmers and by intimidation, or even by rough measures, forced most of them to join. Tobacco beds and fields were destroyed. A few lives were sacrificed. Temporarily the measures were successful. The tobacco could not easily be duplicated in any other part of the country, was pooled, and eventually the American Tobacco Company, and other buyers, rather than go without the tobacco, paid the price demanded by the farmers. This was a great triumph, and a large part of the credit was claimed by the American Society of Equity, which, although not approving of the outlaw tactics, had been of great assistance in guiding the projects.

Greater still was the victory in the Burley tobacco district. This kind of tobacco had been produced for years almost exclusively in the hill country to the east of the Blue Grass region. It was believed that it could not be successfully grown in the richer Blue Grass soil. A trial disproved this belief, and before long the output had increased enormously. Meanwhile, the American Tobacco Company had become almost the sole buyer of this kind of tobacco. The price which had usually been 20 cents, or over, a pound fell to 6.5 cents. It could not be profitably grown in the hills for less than 20 cents, while in the Blue Grass Country it paid well at 10 cents. At 6.5 cents it was grown anywhere at a loss. The Burley Tobacco Association was formed in order to resist the power of the American Tobacco Company. The plan was to pool the tobacco; to set a price on it fair to both parties, as the farmer believed; to limit the amount produced in order to insure continued high prices. The growers, as a class, were anxious to join, yet some, especially the hill farmers, resisted. The "Night Rider" methods brought them about all in. The crop of 1906 was assembled in warehouses, erected largely under the inspiration of the American Society of Equity, and pooled. A price, 15 cents, was set on it. Where the grower needed the money, and this was frequent, arrangements were made whereby it was borrowed and advanced. When sales were made the money was divided on a *pro rata* basis among those who had tobacco in the pool. But sales during the first year were few. Another crop was grown and added to the pooled stores of the warehouses. The American Tobacco Company professed indifference, since it claimed to have a ten-year supply on hand. The third year the tobacco growers determined to reduce the amount grown. In fact, in 1908 they undertook to prevent its production almost altogether, and they were remarkably successful. The Equity Society was very active, especially in the matter of financing the farmers before the sales of tobacco were made. The case as presented to the tobacco grower was substantially this: "We have a certain quantity of tobacco on hand; we can sell it for around 15 cents a pound if we do not add to the amount in stock. Is it not better to sell one or two crops at 15 or 18 cents than to add a third crop to the amount and sell the entire quantity for the same aggregate sum, or for even less?" In spite of the protestations of the American Tobacco Company that they did not need any more Burley tobacco, they paid the prices asked, from 17 to 20 cents, for the pooled tobacco.

This was a victory such as few organizations of farmers have ever won. However, the production of Burley tobacco, which was but about one-tenth of the

normal amount in 1908, suddenly rose to the usual amount in 1909. The price which had been held at such a high figure immediately slumped to half the amount. The pooling of the crop came to an end. The monopoly of the American Tobacco Company was more complete than before, on account of the refusal of the Burley Tobacco Growers' Association¹ to sell to independent tobacco manufacturing companies using low-grade tobacco, their supply at anything below the general price for the pool. In short, what had happened was substantially this: The conditions under which Burley tobacco was produced underwent a pronounced change. The price fell. A concerted resistance to the reduction of price, accompanied by a rigid limitation of supply, succeeded in effecting a return to the old price for a period. After this the economic forces again asserted themselves, the resistance weakened, and the normal conditions, a new normal, prevailed.²

Although the Burley Tobacco Society, aided by extralegal methods, was able to exercise considerable monopoly power, it is significant that *economic forces again asserted themselves*. In other words, the high prices brought by the monopoly stimulated production, and the tobacco pool was added to the list of those temporary attempts at monopoly practices by cooperatives which have died at their own hands.

Collective Bargaining and Milk Prices. *For the exercise of monopoly principles of price control, fluid market milk probably offers as great opportunities as any agricultural product of large importance.* Market-milk producers around certain cities have organized into bargaining associations and, by control of the product, have in some cases held prices several cents per gallon higher than they would have been, judging by prices in other cities, had the producers not been organized. Such organizations, known as *bargaining organizations*, have refused to sell to retail milk distributors except at designated prices and have succeeded in getting the higher prices demanded. But the success of all such schemes requires that the plans for keeping surplus milk off the market be carefully worked out and executed.

Price cannot be increased unless the demand can be increased or the supply reduced. Most of the people who talk about price control will agree that it necessitates control of the supply. Many, however, do not appear to realize that such control of the supply must extend to the degree of being able to reduce the supply coming on to the market, not only temporarily, but, generally speaking, permanently, so long as prices are to be held up.

Milk bargaining organizations which have enhanced prices have been successful in working out and executing devices for keeping down the supply. One device which has been used much has been to pay each

¹ The actual name of this association was the Burley Tobacco Society.

² B. H. Hibbard, *Marketing Agricultural Products* (Appleton, 1921), pp. 233-235.

member the price agreed upon with distributors by bargaining for only a definitely limited amount of milk for each producer, this amount, or quota of the member, being frequently referred to as his *basic* supply. For excess milk the member receives a lower price, based upon its value for manufacturing into butter or other products, and this milk is frequently referred to as *surplus* milk. As such bargaining organizations generally operate in areas where it is not profitable to produce milk for butter purposes, the fact that the member gets only the butter price for his production above his basic quota tends to discourage him from increasing his production above that amount. The above statements, of course, need to be modified to the extent of saying that some bargaining organizations operate very close to large surplus-milk areas. But in such cases the extent to which the bargaining organization can raise the fluid-milk price is closely limited.

If milk bargaining associations insist upon too high a price, they may get it temporarily, provided they have signed up in their organization practically all milk producers in the city's natural milkshed. But *surplus milk* will appear, and some distributor of fluid market milk will arrange to take all the surplus of a number of farmers at a price above the regular surplus price but below the price bargained for by the association. At this stage there are frequently milk wars, and usually the *basic* price is reduced.

Another method which milk bargaining organizations have used to keep surplus milk out of a market has been a close working agreement with the city's health department. Bargaining associations usually have inspectors checking up on members' milk and often have considerably improved the average quality of a city's milk. The result often is considerable assistance from the health department. This is illustrated by a statement made by the manager of the San Diego, Calif., bargaining association. Fluid milk prices in San Diego were comparatively high. The manager of the San Diego association was asked how he was able to keep milk from more remote territory from coming in and spoiling prices. He replied that the nearest surplus area was the Imperial Valley, but that the milk of no farmer could be sold in San Diego unless his dairy was approved by the city's health department, and that thus far the health department had refused to inspect dairies in the Imperial Valley.

Some of the features of the milk market which permit control of prices of fluid milk to be carried to a greater degree than has been possible with most products are the following: (1) Milk is so perishable that a surplus cannot be carried over to come upon the market and lower prices later. (2) It cannot be economically shipped long distances, which reduces the number of producers within a market area whom it is necessary to keep organized and to hold in line. (3) The cost of marketing

services is so great that a substantial increase in prices to farmers has but slight comparative effect on prices paid by consumers. (4) The demand for milk is relatively inelastic, so that consumers will not greatly decrease their consumption because of a moderate increase in price. (5) Prices collectively agreed on, if not too high or too low, result in stability and regularity of price and supply, which are pleasing to retail distributors and consumers as well as farmers. (6) Collective-bargaining organizations usually give considerable attention to improving the quality of the milk. (7) There must be a seasonal surplus anyway, and a method must be provided for taking care of this. (8) The surplus can be converted into butter and other products and thereby be removed from the fluid-milk market more easily than surpluses of most other products can be disposed of.

In recent years, an influence more powerful than any of those just enumerated has been invoked to maintain the price structure in the country's milksheds. This has been the authority of the Agricultural Marketing Agreements Act of 1937 and precedent Federal laws for interstate milksheds and of state milk control laws like the Young-Desmond Act in California for intrastate sheds. In general, agreements under these laws provide that farmers get a fixed price (a combination of *surplus* and *basic* or *fluid* prices) for milk and establish penalties or quotas on new or outside producers. Thus the milk distributors do not compete with each other for milk, since as they all pay the same price and are protected against interlopers who might bid their sources away from them. The farmers are assured of a satisfactory price for their milk and protected against the competition of milk from other areas or the entry of new producers into their market.

Despite the protection afforded by law, charges have been made that even stronger measures are resorted to in some areas to maintain milk prices. In the spring of 1948, several milk distributors and a milk producers' cooperative in the Washington, D.C., milkshed were indicted for violation of the Sherman Act. In this case, where the indictment was dismissed by the District Court, it was alleged that the producers' cooperative and the leading milk distributors had conspired to eliminate competition by depriving distributors (outside the association) of supplies, by keeping prices unduly high, and by inducing the Virginia and District of Columbia officials to limit the inflow of milk from other states than Virginia or Maryland. In fairness, it is necessary to reiterate that this indictment was dismissed in the U.S. District Court.

Monopoly Attempts with Other Farm Products. For many years before 1937 the California Fruit Growers Exchange, a cooperative through which about 75 per cent of the Western citrus crop is marketed, successfully regulated supply. It did this by limiting the shipments of

fresh fruit to market to such amounts as it believed would bring advantageous prices. Excess fruit was converted into by-products.

Under the authority of the Marketing Agreements Act and the California Pro-Rate Act of 1933, similar arrangements were in force for many fruits and vegetables in the years before the Second World War. In the case of pears, for instance, growers restricted market supplies not only by limiting shipments, but by agreeing not to ship low-grade fruit.

The authority of the government is necessary to make this kind of agreement work, because such agreements advantage outsiders more than they do insiders. The insiders "hold the umbrella," as it is called, for the outsiders to walk under. The insiders raise prices, as in the case of citrus, by limiting the market supply of fresh fruit. But they do not get the equivalent of the fresh-fruit price for all their produce because part of it is turned into less remunerative by-products. An outsider, however, can sell all his fruit at the higher fresh price, since he is not bound by agreement to convert part to by-products. Soon, therefore, there are more outsiders than insiders and the plan collapses.

Under present law, however, if a majority of growers vote in the affirmative, every producer has to be an insider, whether he likes it or not. It may be noted that the practice of farmers combining to fix prices, which has been prevalent in milk and in citrus and various other crops, would probably be illegal in respect to an industrial commodity, and indeed *was* illegal till 1922. Before that time officers of cooperative associations had actually been jailed for brief periods for violation of the antitrust laws. In 1922, however, the Capper-Volstead Act was passed which almost, but not quite,³ freed agricultural cooperative marketing associations from prosecution under the antitrust laws. The Agricultural Marketing Act of 1929, the Triple-A Act of 1933, and the Agricultural Marketing Agreements Act of 1937 made it the positive duty of the government to assist farmers in enforcing schemes of supply restriction.

These laws were in part an attempt to allow the farmer to form monopolies of his own the better to market his product in a world of monopoly. They also illustrate the ambiguous nature of our official policy, which on the one hand is against monopoly, yet on the other encourages it in various ways and certainly has not eliminated it.

Except in the case of a few products like some of the California fruits and nuts, which are grown in a limited area by relatively few farmers, cooperatives have not been successful without government sanction in holding crops off the market. When they have succeeded in holding part of the crop back, the usual result has been that they later had to sell at lower prices than the outsiders got while the cooperative was holding

³ As shown by the indictments just mentioned.

back. This practice was an important contributing factor to the failure of the large-scale cooperative tobacco marketing associations which operated in Kentucky and adjoining states from 1921 to 1925, each of which associations had over 70,000 members. It was one of the causes of difficulties experienced by the Sun-Maid Raisin Growers' Association of California a little later and by many other associations.

Cooperatives can smooth out the fluctuations in prices to a slight degree. For a few commodities with certain peculiarities connected with their marketing, a certain degree of price lifting through collective action is possible. But all such possibilities are very limited. The success of cooperative marketing organizations has been due primarily to their offering better products through improved grading and standardization, to improved selling, and to reduction of marketing costs, rather than to ability to control the price. Price-controlling plans must always consider supply and demand, and only by influencing these can price be controlled.

The Government and Supply Restriction. Monopolies, when they are effective, succeed in raising prices through limiting the supply. To do this is beyond the powers of farmers themselves in the case of most crops, especially the staples, which are produced by millions of farmers and handled through numerous domestic and foreign outlets. What farmers could not do by themselves the government has done, beginning in 1929, when the Federal Farm Board commenced operating. The reason for the government's attempts to restrict supply was the low level of farm prices and income in the ten years after 1929.

The government restricted the supply of staples and many other crops in three chief ways:

1. By lending money on crops or buying them up, to keep them from coming to market, through the Federal Farm Board from 1929 to 1932 and through the Commodity Credit Corporation thereafter.

2. Through direct crop restriction by government regulation. From 1933 to 1941 the production of all the basic crops was limited. With the great need for food during the war, production restrictions were lifted on all food crops. In 1948, however, limits were put on potato production.

3. Through diversion from the domestic market. This has been done by enlarging the exports of wheat, cotton, and other crops by the payment of export subsidies. Another method of reducing supplies in what might be called the *primary markets* has been to divert part of the crop to secondary uses. Thus there have been programs almost every year under which potatoes have been converted into starch or livestock feed, and thus the supplies in the regular edible market have been reduced.

These restriction programs, like the ones instituted by farmers them-

selves, were also attempts to enable the farmer to stand up to the monopolized industries which buy from and sell to him. And they were often justified on that basis.

Their main justification, however, was that in the years after 1930 American farm income was very low and the economic conditions of farmers bordered on the desperate. Action had to be taken and taken quickly. Critics of the New Deal farm programs, looking back on them, are often prone to forget the urgency of the times when they were initiated. This does not mean that the AAA programs should not be criticized. Although they enhanced farm income at the time, they had certain unfortunate effects. By raising prices of American products, especially of cotton, they limited exports and encouraged the expansion of competing growths, particularly in Brazil. By raising cotton prices, the expansion of the production of competing fibers, notably rayon, was encouraged. To the extent that the prices of the many farm commodities affected by the New Deal program were lifted, consumers had to pay more, which left them less money for the purchase of other things or forced them to buy smaller quantities of farm products than they would have otherwise. It can hardly be asserted, however, that prices of farm products in the 1930's were raised high enough to be put out of the reach of most consumers.

These programs, of course, are only part of the whole government farm program, which will be treated more fully in Chap. 27.

Monopoly in Allotments. As a result of the crop-restriction programs certain farms now have a distinct monopoly value. These are farms which have a "history" of growing restricted crops, and thus have acreage allotments on which these crops can be grown. Tobacco, for instance, cannot be grown by anybody anywhere. Since tobacco under present conditions is a profitable crop, the owner of a farm with a tobacco allotment can sell it for much more than an equally good farm on which tobacco cannot be grown for lack of an allotment. Although there were no restrictions on wheat acreage through 1948, a farm with a "history" of being planted to wheat was worth more than one without such a history, because if wheat production were to be limited the regulations would almost undoubtedly permit it to be raised on the first farm, but not the second.

So much for the farmer as monopolist. We have made frequent reference to laws being passed to enable the farmer to make his way in a monopolistic world. Let us look at that world in its bearing on him.

THE FARMER AND MONOPOLISTIC INDUSTRY

Farmers in Relation to Buyers' Monopolies. We have pointed to the presence of monopolistic elements in certain industries which use

farm products as raw material. To return to the most important of these, meat packing, it may be noted that the four largest firms have rather consistently handled about 60 per cent of all meat animals slaughtered in the United States.⁴ This pattern of buying the same proportion of marketable livestock would seem to argue that even if a policy of conscious sharing does not exist, at least a policy of live-and-let-live is followed.⁵

If buying on the part of the farmer's customers is not competitive, he gets a lower price for his product than he would otherwise. In fairness to the four large meat packers it should be pointed out that such competition for animals as they may not care to provide might well be provided by the half-dozen or so firms next in line and by the thousands of smaller slaughterers.

Indeed, it is cogently argued that meat producers and consumers both gain from the setup of the meat-packing industry, with its dozen or so large "national" packers and thousands of smaller, local concerns. The large firms are able to bring the economies of scale to meat processing, while the competition of the others prevents them from making undue profits, forcing them to pass the savings on to farmers or buyers.

We have also called attention to the possibility that a certain amount of collusive buying has existed in the tobacco industry. In many milksheds there are only two or three principal distributors who serve as outlets for the dairy farmers. Sometimes, too, these distributors are branches of a nationwide firm like the National Dairy Company or the Borden Company. Nevertheless, because of the special features in milk marketing already noted and protective legislation, farmers' cooperatives are now able to meet the distributors on fairly even terms. In fact, it has often been charged that dairy farmers and milk companies combine to use their political and economic power to the detriment of the consumer, as in the case of the indictments mentioned earlier.

While there are many large firms canning fruits and vegetables and milling flour, the degree of concentration in these industries is hardly great enough for these firms to exercise much pressure on farm prices. In particular localities, however, a single packing plant may be the only outlet for fruit or truck crops and thus may have a monopoly hold over the growers. Much the same may be true of sugar beets, but for the last fifteen years the minimum price in this product has been fixed by the government.

One other form of organization to which farmers sell, directly or indi-

⁴ A. C. Hoffman, "Large-scale Organization in the Food Industries," Temporary National Economic Committee, *Monograph* 35, p. 16.

⁵ W. N. Nicholls, *Imperfect Competition within Agricultural Industries* (Iowa State College Press, Ames, Iowa, 1941), p. 349.

rectly, might be mentioned. This is the large chain stores, which have been accused of using their buying power to beat down prices to farmers and others who sell to them. Their power in this respect is probably limited, however, because the five largest together handled only about 25 per cent of the food sold at retail before the Second World War.⁶

On the other hand, chain stores have undoubtedly conferred benefits that probably have more than offset the low prices they may have at times enforced on farmers. First, they have provided a capacious, steady and well-financed market, able to take and sell large quantities of produce without disastrous reductions in price. More important, chain stores have been responsible for an efficiency in the handling of food and in the actual retail selling which had never been known before. Therefore they were able to reduce the costs of marketing, which means that prices are lower for the consumer, enabling him to buy a larger volume, and that the farmer has a chance to get a larger share of the consumers' dollar than he would in the absence of so efficient a marketing mechanism.

While farmers have been forced to take reduced prices for their products because of the existence of middlemen's or processors' monopolies, the evidence available leads to the conclusion that the extent to which farmers have been victims of monopoly has been much greater as the result of sellers' monopolies of goods and services.

Sellers' Monopoly and the Farmer. Like the rest of us, when a farmer buys a tire, gasoline, an automobile, or an article made of steel, aluminum, or copper, he is buying something the price of which has directly or indirectly been subjected to a certain amount of monopolistic influence. Of particular interest to farmers, however, are the existence of monopoly or oligopoly in the manufacture of farm machinery, as already noted, and in the production of fertilizer raw materials. The existence before the Second World War of a potash cartel has also been noted. As far as this country is concerned, before the war the production of the synthetic nitrogen that goes into mixed fertilizer was almost exclusively in the hands of two companies, Allied Chemical Company and du Pont de Nemours & Company, which together had 86.8 per cent of the total capacity. Due to the policy of disposing of war plants so as to widen competition, many of the nitrogen works erected during the war were sold to others, so that by September, 1946, the percentage of capacity in the hands of the two largest companies was 60, and they had at least three competitors of importance.⁷ Further sales of nitrogen plants still owned by the government to companies other than Allied Chemical or du Pont will reduce their percentage yet more.

Railroad Monopoly and the Farmer. One of the fields in which mo-

⁶ Hoffman, *op. cit.*, p. 8.

⁷ *The Disposal of Synthetic Ammonia Plants, War Assets Administration Report*, Oct. 31, 1946, p. 10.

nopoly used to cause greatest resentment among farmers is transportation. In the third quarter of the nineteenth century, in particular, when railroad rates were unregulated and when most Middle Western and Western communities were served by only one road, feeling against the roads for their practice of charging what the traffic would bear and discriminating between shippers ran high. In fact it was one of the sources of the strong Populist political movement of the 1880's and 1890's and was largely responsible for the creation of the National Grange some years earlier. The farmers exercised enough political pressure to force the legislatures of several Middle Western states to pass the so-called "Granger" laws in the 1870's regulating rail rates. Farm sentiment was also largely responsible for the passage of the Interstate Commerce Act for the national regulation of rates in 1886. This Act was strengthened by the Hepburn Act of 1906 and subsequent legislation. Extensive regulation plus the competition of other forms of transportation like motor trucks, pipe lines, ocean freighters, and barge lines have greatly limited the power of railroads over shippers.

While railroad rates and other public-utility charges are regulated by the government, their rates for that very reason are likely to be rigid, as regulatory bodies move slowly. Since farm prices are inclined to be flexible, in times of falling prices farmers are disadvantaged, because as we pointed out in Chap. 9, the farmers' share of the consumers' dollar is reduced. In times of rising prices, such as were experienced after the Second World War, the farmer has an advantage, because his prices rise faster than do those of the distributing and transportation services that get his product to the consumer.

The Farmer and Monopoly. There always has been a feeling among farmers, whose most recent strong manifestation occurred during the Great Depression, that they have been particular victims of monopoly. This was so, they believed, because they produced and sold competitively while the manufactured goods they bought and the transportation services they used were largely monopolized. This feeling, which certainly had considerable justification, was in part responsible for the AAA legislation of the New Deal, intended to put the farmer on a basis of bargaining equality with those to whom he sold and from whom he bought.

The postwar years of great farm prosperity have gone far to assuage this feeling. If, however, times of depression should return, it is not unlikely that farmers will demand more stringent regulation or the breaking up of monopolies.

ATTITUDES TOWARD MONOPOLY

The reader will remember that in this and the previous chapter references were made to the ambiguous nature of the government's policy in regard to industrial concentration. He will also have noticed a similar

ambiguity on the part of this text, in the discussion of the meat-packing industry and chain stores in this chapter, and the general discussion of the benefits and disadvantages of concentration on pp. 256-258, Chap. 11. The reason for this uncertainty is not far to seek. It arises from an unresolved division of opinion among economists. On one hand there is what might be called the *classic* or *traditional* point of view, most clearly set forth by Professor Chamberlin of Harvard in his *Theories of Monopolistic Competition*. This view has it that under monopolistic competition in particular, output tends to be smaller and at a higher cost than under free competition. This follows because selling costs have to be covered and because the firm is at equilibrium before the lowest point on the average-cost curve is reached. Under competition, the equilibrium position is at the lowest point of the cost curve.

Undoubtedly under monopoly or partial monopoly, output has been restricted and prices raised. This has an obvious disadvantage for consumers and narrows the market for the labor and the commodities used in producing the monopoly goods.

The chief argument on the other side has already been partly presented. Briefly, it asserts that the output of individual firms under monopolistic conditions, regardless of Professor Chamberlin's theory, is larger than would be the case under competition and that therefore economies of scale and other advantages, as described on p. 258, are thereby made possible. Further, it is felt by advocates of this view that there is sufficient competition in most situations, even where it is limited, to force the passing on of these gains to consumers. Lastly, as pointed out in Chap. 11, mass production is inevitably a method that must be employed by large firms, and large firms inevitably make for small numbers in an industry.

The authors admit that they do not know how to resolve this difference. They hope that researches on the subject such as those carried on by the Brookings Institution may help provide the basis for an answer. One thing, however, is certain: up to now concentration has been a steady, if not a growing, characteristic of American economic life, which would seem to demonstrate that bigness in a firm is not incompatible with sufficient efficiency for survival and, as stressed, is in accord with the economic fact of mass production. In fact it is those who are most critical of the effects of concentration, like the Federal Trade Commission, that have most often called attention to its vigorous growth.

Questions and Problems

1. Explain the circumstances under which individual farmers or farmer organizations can successfully exercise a degree of monopoly power. Give illustrations.
2. What have been usual consequences of monopolistic activities on the part of cooperative marketing associations? Why?

3. What is the position of farmers' cooperative marketing associations as to monopolistic practices under the Capper-Volstead Act?
4. In what ways has government aid enabled farmers to practice monopoly?
5. How are farmers affected by monopoly practices on the part of other businesses? Give illustrations.
6. What are the pros and cons of the controversy regarding business concentration?

Suggested Readings

1. H. R. Wellman, "Possibilities and Limitations of Control of Shipments as a Method of Dealing with Tree Fruit Surpluses," *American Cooperation* (1938), pp. 478-495, is a penetrating analysis of the problem of limiting shipments with reference to experiences in California.
2. A. C. Hoffman, *Large-scale Organization in the Food Industries*, TNEC Monograph 35 is a valuable review of the situation before the Second World War.
3. W. N. Nicholls, *Imperfect Competition within Agricultural Industries* (1941), is an interesting theoretical presentation, with special reference to monopsonistic situations.
4. TNEC Monograph 36, *Reports of the Federal Trade Commission*, Report on Agricultural Implement and Machine Industry.
5. A. L. Meyers, *Agriculture and the National Economy*, TNEC Monograph 23, discusses concentration in agriculture.

CHAPTER 13

MONEY AND CREDIT

Our study now passes from the consideration of the factors determining the prices of particular goods to the examination of the meaning of the general price level and the factors causing it to vary. The term *general price level* refers to the change which occurs from time to time in the average of prices of all kinds. Thus the general price level rose rapidly during the inflation of the First World War, collapsed thereafter, rose again in 1922 and 1923, and then remained on a fairly even keel until a new and marked decline began in 1930, which continued to 1933. Then followed an irregular upturn, often interrupted, which lasted till 1937, when there was a brief break, after which prices again remained fairly stable, except for a brief upward flurry at the beginning of the war in September, 1939, till the spring of 1941. Then began a great upsurge, which was moderated to a sort of plateau from 1943 to 1945 by government price control and which culminated in the rapid upward movement of 1947 and 1948. That the general price level went through these gyrations does not indicate that the prices of any particular good did likewise. In fact, some individual prices often move opposite to the general level, for that level is only an average; and individual prices may vary much more than, much less than, or contrary to the average.

In contrast to variations in values of particular goods which are due to changes in the demand or supply of these goods, fluctuations of the general price level are usually attributed to developments in the field of money and banking and the upward and downward movements of business activity. Indeed, changes in business activity are so closely associated with monetary developments that it is often difficult to tell which is effect and which is cause. Thus, the most generally accepted explanation of general price movements asserts that these changes are due to variations in the quantity and rapidity of use of the medium of exchange as compared to variations in the volume of goods to be exchanged. Price-level fluctuations are accompanied by a greater change in the medium of exchange or its rapidity of turnover than in the volume of goods and services offered for sale. But these variations in the quantity and use of money are both cause and effect of the state of business activity, and the state of business in effect is the volume of goods and services offered for sale.

These are perhaps confusing statements, but there is no point in trying to disguise from the student the fact that the study of money and prices is a difficult subject. This difficulty is in large part due to the complicated interrelationships of the factors mentioned, particularly to the interdependence of their relationship, so that it can be said that quantity of money is cause and price an effect or that the state of business is cause and quantity of money an effect. Unfortunately for ease of analysis each of the three affects the others and is affected by them simultaneously. In this and the following chapter we shall, however, try to isolate the effects of the quantity and rapidity of use of money on prices.

Since money, in the sense of hand-to-hand cash, now performs less than 10 per cent of all exchanges (the other 90 or more per cent being carried on by the use of credit instruments), it is necessary to discuss the major characteristics of commercial banks, because these banks are the source of most of the credit instruments. Obviously, not all the principles of money and banking can be presented in the confines of this book. In the selection of the principles to be discussed, especial emphasis will be given to the supply of money and credit instruments, the factors which cause this supply to vary, and the resulting effects upon prices.

PRINCIPLES OF MONEY

Nature of Money. Money, in the sense of hand-to-hand cash, in which sense the word is most commonly used, may be defined as any medium of exchange of general acceptability. In this usage, money does not include such credit instruments as checks and drafts, for they are acceptable only when offered by persons of recognized responsibility. A study of the history of money materials reveals that the articles or commodities which are of such general acceptability and have other characteristics which make them usable as mediums of exchange, have changed from time to time. Early American settlers along the Atlantic seaboard made use of Indian wampum as money. Later the tobacco planters of the South used warehouse receipts for tobacco as money. However, the coins made of the precious metals gold and silver, and paper money redeemable in these metals, have proved to be the most successful forms of money. The characteristics which caused these precious metals, up to the 1930's, to replace almost completely all other commodities as *basic money* are the following: (1) they are widely in demand for uses other than their use as money; (2) they do not deteriorate to any appreciable extent; (3) they are uniform in character and easily divisible; (4) they are easily recognized or identified; (5) they are neither so plentiful as to be too bulky for use nor so rare as to be easily lost; (6) the total quantity does not change rapidly in short periods of time, and hence their value is correspondingly stable.

Despite these advantages, the role of gold and silver as the world's basic money materials has been in a state of flux since the early 1930's. They are not used as a medium of exchange in the internal business of any important country, but they are still used in certain international exchanges. In addition, in this country and in many others, holdings of gold and silver are required as reserves for paper money, which means that the amount of paper money issued can be limited to a specified multiple of the metallic reserve.

The reasons for the displacement of the precious metals will be touched on below. It can be said here, however, that it is hardly likely that their supply will have the same importance for monetary policy in the future as before the First World War.

In a broader sense, the word *money* is sometimes used to include such credit instruments as checks and drafts, or bank deposits subject to check, which are employed as mediums of exchange, but which are not of general acceptability. When the term *money* is used in this book, however, it will be in its more limited sense except where the context implies the broader meaning. Occasionally, we shall also use the word *money* in an even more limited sense, such as *standard money* and *lawful money*, which will be defined later in this chapter.

Functions of Money. 1. *Medium of Exchange.* In the modern exchange economy in which goods are produced for sale, money acts as a lubricating oil to facilitate exchange operations and is at the same time the tool by which the consumers' wishes are "telegraphed" to the producer. Barter, or the exchange of goods for goods, for several reasons presents such difficulties as to be possible only on a very limited scale. First, in a barter system the problem of divisibility of goods exchanged is confronted. A man who has a cow to trade cannot "break it up" to purchase a pig and keep the remainder of the purchasing power to buy some wool next month, probably from a different seller. Second, in a barter system the seller cannot offer his goods for sale in a general market but must find someone who wants his particular goods and whose goods the seller also wants. The development of a medium of exchange in the form of money (and of credit instruments calling for the payment of money in the future) has made possible the specialization and accompanying productive efficiency of the exchange economy. Contrary to barter, a money system permits the seller to offer his goods in a general market and to receive in exchange money or credit, which medium of exchange he may then apply to purchase whatever goods he desires. Money, in the broad sense, may be looked upon as generalized purchasing power.

In a system in which the producer and the consumer are separated by a series of exchanges of the commodity, the consumers who are ultimately

the source of demand must have some means of making known their wants and thus directing production. Money, as generalized purchasing power, can be used by consumers to buy whatever commodities they want, and, as this money is passed back through the marketing agencies to the entrepreneur who carries on the form-changing operations, the latter is stimulated to further production. On the other hand, in the case of those goods for which the consumers will not offer sufficient money to cover production costs, the activities of the entrepreneur who undertakes the form-changing operations are discouraged by the fact that not enough money reaches him to cover costs. Money thus becomes the agency whereby consumers direct production under the modern exchange economy. Entrepreneurs in turn, through the distribution of the income to the productive agencies, provide the income of consumers. As a *medium of exchange*, therefore, money not only facilitates the division of labor but assists in directing the productive activities into those lines which consumers most desire.

2. *Standard of Value.* Money is the only objective common denominator by which the value of different goods can be compared. The value of hogs in terms of corn is not found by the observation of the rates at which these two commodities are actually exchanged, for they are rarely bartered. Instead, their relative exchange values are compared by comparing the prices at which the two commodities are selling. Thus, if on a given day in Davenport, Iowa, corn is selling for \$1.50 a bushel and hogs for \$18 per hundredweight, the hundred pounds of hogs is twelve times as valuable as a bushel of corn and the hog-corn ratio is said to be 12. In a similar fashion the exchange value of corn in terms of all other goods is measured by the cents per bushel it can command. And, if the general price level remains unchanged, a change in the price of corn indicates a corresponding change in the value of corn.

3. *Store of Value.* The person who wishes to save part of his product is eager to store this value in a form which is convenient and which at the same time will have relatively stable power of commanding other goods in exchange. Money and credit instruments occupy but a small space, do not deteriorate materially, and have a more stable purchasing power than most other goods, and hence are the best available form in which to save. In a marketing economy, a man actually has little opportunity to undertake the first step in saving in any other form, for most, if not all, of his income is received in money.

Money, as generalized purchasing power and as purchasing power of relatively stable value, does not have to be used at any particular time. This fact may have broad economic consequences. The consumer is not bound to return his money income immediately into the market for consumable goods. He may save it—for instance, put it in a savings bank—

and thereby prevent the money from going into the consumers' market directly. It would be incorrect, however, to infer that the act of saving permanently takes this purchasing power out of the consumers' goods markets. Funds which are saved are used for the development of capital goods, and for the development of these goods raw materials must be purchased and labor hired. Yet the time elapsing before purchasing power which is saved gets into the consumers' goods market is considerably greater than if the money goes directly from the receiver of the income to the retail market. Furthermore, it is possible for consumers to save purchasing power and to hoard it rather than to put it into investments whereby it may flow back into the hands of consumers. Also, savers may so rapidly increase the funds available for capital investment that the investment market cannot absorb these funds. In these latter cases the purchasing power may remain out of the consumers' goods market for a considerable period of time, perhaps reducing the prices or volume of consumers' goods sold. This fact, that money may become suspended purchasing power, is significant in relation to those oscillations of business activity known as the *business cycle*.

4. *Standard of Deferred Payments.* Whenever one person lends to another or sells him goods "on time," money serves as the measure of the value to be paid at the future date. Obviously, if the value of money changes in the meantime, or, in other words, the general price level changes, the value paid at the future date will be more or less than the value given at the time the loan was made or the goods sold. When the price level dropped after 1929, each dollar paid by debtor to creditor had more value, for it could buy more goods at the lower prices then prevailing. Conversely, during times of rising prices as from 1940 to 1948, each dollar received by a creditor had less buying power. One of our major current problems is so to improve the monetary system that money will be an accurate standard of deferred payments.

The Money Standard. The basis of any monetary system is *standard money*. Standard money is that money which is designated by law as the measure of value and to which all other forms of money are so united that the value of the other money cannot depart from the value of the standard money. Standard money is always given the *legal-tender* power. This is a characteristic given to certain money by law and requiring that, when money designated by law as having legal-tender power is offered in payment of a debt, the creditor must accept it as a tender or offer of payment, unless there is a contract providing for payment in some other kind of money. If the standard money is metallic, it also will be coined in unlimited amounts or at least bought at a fixed price at the mint in case the proper metal is brought to the mint. This introduces us to the term *free coinage*, by which is meant that the metal of which the

coinage is free will be received by the government and coined in unlimited quantities whenever presented. Free coinage does not necessarily mean coinage free of charge but only in unlimited amounts. Coinage which is free of charge is called *gratuitous coinage*, which may be associated with free coinage but not necessarily so. There must also be free import and export of the monetary metal, if the money is to have the full characteristics of standard money.

Various monetary standards have been used at different times in history and are in use today. Prior to 1873 the United States was on the bimetallic standard, under which both gold and silver were standard money. Both metals were coined in unlimited amounts upon the presentation of the metals at the mint, and both gold and silver coins were legal tender. At the present writing no country is on the silver standard. During the First World War all the major countries, except the United States, and nearly all the minor countries of the world went on a paper standard. By January, 1930, all the major countries and most of the minor countries had returned to the gold standard. But during the financial stress from 1931 to 1933 and the wars which followed later in the decade practically all the world left the gold standard and thereby operated on a paper-money basis. In January, 1934, the United States returned to a form of the gold standard, the exact nature of which will be described in the following section.

The Gold Standard. The "orthodox" or "automatic" gold standard prevailed in the United States from 1879 to 1914 and, with the modification of some Federal Reserve System interference, until April, 1933. Under this system, gold is not only the standard of value but is coined freely and imported and exported without restriction. All forms of circulating mediums are convertible into gold. Gold occupies the role of the redemption fund for other money and of the specified reserve behind much of the paper money in circulation.

The gold standard was automatic in that the government did not interfere with its working. Its great virtue was that it provided an international medium of exchange accepted in practically every country and thus made possible the easy settlement of international accounts. Because the gold standard in effect made a country adhering to it subject to changes in the levels of business and prices in other countries, it often happened that gold would flow out of a country (for reasons which will be gone into in the chapter on international trade), thus removing the reserves behind the currency and threatening at worst financial panic and at best a severe price deflation. When this occurred, usually at the onset of a war or depression, the country might go completely off the gold standard by refusing to permit its outflow or impose other limitations on gold movements which came to the same thing.

The gold standard was therefore a "fair-weather" mechanism that broke down whenever the strain was severe, as during the world wars or the Great Depression.

No country is now on what used to be called the "automatic gold standard." This country is on a sort of modified gold standard, which is far from being automatic. Gold can be shipped out in settlement of debts due foreigners, and the Federal Reserve notes must have a backing of 25 per cent of gold. This requirement is in reality a fiction, because whenever the note issue has become so great as to approach the limit, Congress has lowered the reserve requirement. Because of the deficiencies of the gold standard, most countries now have managed currencies under which the monetary medium has no intrinsic commodity value.

A Managed Currency. Under a *managed currency* the volume of money and of other mediums of exchange is subject to the conscious control of the government or of the central bank. This is in contrast to the metallic standards under which the quantity of money presumably depends on the available supply of the precious metal or metals. In the actual operation of monetary systems the distinction ceases to be clear-cut. Even during the 1920's the gold standards of both Great Britain and the United States were subject to some "management," as will be described later in the chapter. On the other hand, British currency management involves occasional exports of gold and the accumulation of gold reserves.

A strictly managed currency uses paper only. No precious metal is necessarily available for reserves or for settling international balances. The circulating paper money is not redeemable in gold. Gold may be imported or exported, but only at the discretion of the controlling authority. The whole emphasis is on the conscious control of the quantity of money in such a manner as to obtain the desired value for the money. Aside from the problem of judicious control of the quantity of money, a paper-standard country faces the problem of public confidence. The frequent lack of public confidence rests to a large extent on the fact that in history, when nations have adopted a strict paper standard, the quantity has not been controlled. The temptation to "run the printing presses" as a means of meeting public expenditure is too strong, and the paper has depreciated in value to the disadvantage of those holding it. Nearly all these unsuccessful historical efforts to maintain a strict paper standard, however, have been in times when there was a national emergency, or when the knowledge of monetary principles was not widespread.

As the knowledge of methods of monetary control has grown and as people have gained confidence in their currencies, even though they might not be redeemable in metal, managed currency policies have been more successful. England and her satellite areas, including not only the domin-

ions but northern European countries like Norway, successfully operated managed currencies from 1931 to 1939 and through the Second World War. Every important country is now on a managed-currency basis.

Some of them, it is true, are not managing very well, but their troubles are not due to the impossibility of managing a currency successfully but to the inherent difficulties of the postwar situation and to the widespread destruction of resources, disruption of economic activity, and dislocation of men. As we have noted, in times of stress, as during and after wars, the gold standard has also broken down.

Types of Money. The United States has five types of money, which illustrate all but one of the kinds of money which have been developed. Though this nation is on a form of the gold standard, its circulating medium does not include gold. This standard money is used only for settling international trade balances and as a basis for the issuance of paper money and bank credit. The types of money in actual circulation are (1) metallic money other than gold, (2) representative money, (3) government-credit or fiduciary money, (4) bank notes, and (5) fiat money. These kinds of money will now be described.

1. The legally defined *standard money* of this country is gold, all of which is now kept as bullion. The 23 billion dollars of gold held in 1948 (Table 28) was about five times the number of dollars worth of gold which we had in the 1920's. This concentration of gold stocks in the United States illustrates the disordered state of world monetary and political affairs and is not an advantage to us. How we acquired this gold and the problems related thereto will be discussed in Chap. 19 on foreign trade.

2. *Other metallic money* includes silver dollars, subsidiary silver coins, and five-cent and one-cent pieces. The silver dollars still retain one characteristic of standard money, that of full legal-tender power. The subsidiary coins are legal tender up to specified amounts. In February, 1948, the silver dollars and bullion totaled 2,437 million, of which only 154 million were in circulation, and the subsidiary and minor coins totaled 1,299 million dollars. In 1933, provision was made for the purchase of 24 million ounces of newly mined silver a year, half of which was to be coined. In early 1934, Congress authorized the Secretary of the Treasury to purchase additional silver until that metal should equal 25 per cent of the precious metal behind our currency.

3. The United States government issues silver certificates, which are *representative* money and amount to deposit slips for coined silver dollars or bullion. The great amount of silver certificates in circulation, 1,952 million dollars in 1948, represents the effects of the provisions of the Silver Purchase Act of 1934, under which silver certificates are to be issued equal to the monetary value of the silver purchased.

TABLE 28. U.S. MONEY, OUTSTANDING AND IN CIRCULATION, FEB. 29, 1948
(Millions of dollars)

	Total outstanding	Money held in Treasury*	Money held by Federal reserve bank and agents	Money in circulation†
Gold.....	23,036	23,036‡		
Gold certificates.....	21,822	18,961	2,815	46
Federal reserve notes.....	24,943	52	1,033	23,857
Treasury currency, total.....	4,561	2,308§	387	4,116
Standard silver.....	493	337	3	154
Silver bullion.....	1,944	1,944		
Silver certificates and Treas- ury notes of 1890.....	2,249§	.....	296	1,952
Subsidiary silver coin.....	943	14	37	892
Minor coin.....	356	7	10	339
United States notes.....	347	4	36	307
Federal reserve bank notes.....	375	2	4	370
National bank notes.....	102	||	1	101
Total.....	¶	44,357	4,235	28,019

* Includes money as security against gold and silver certificates, Treasury cash, and for Federal reserve banks and agents.

† Outside Treasury and Federal reserve banks. Includes any paper currency held outside the continental limits of the United States.

‡ Includes \$156,039,431 held as reserve against United States notes and Treasury notes of 1890.

§ To avoid duplication, amount of silver dollars and bullion held as security against silver certificates and Treasury notes of 1890 outstanding is not included in total Treasury currency outstanding.

|| Less than \$500,000.

¶ Because some of the types of money shown are held as collateral or reserves against other types, a grand total of all types has no special significance and is not shown.

The government also prepares gold certificates, but does not put them into circulation. These certificates, which circulated freely before 1933, are now used for transactions in gold between the Federal reserve banks and the Treasury.

4. The United States government also issues notes, which are obligations of the government but against which the Treasury does not keep 100 per cent in metallic money. Such money is called government credit money or *fiduciary* money. The greenbacks or United States notes became a part of our money during the Civil War, but they were not made redeemable in gold until 1879. Since 1900 the United States government has maintained a special reserve in gold to redeem these greenbacks, although under present law such redemption cannot take place except for exporting gold to settle international balances. In 1948, there were 347 million dollars in greenbacks (307 million dollars in circulation)

against which the government maintains a gold reserve of approximately 156 million dollars. In addition to the greenbacks, the Federal government has outstanding approximately 1 million dollars of Treasury notes of 1890 (probably all lost or in collections) issued under the Sherman Silver Act of that year to purchase silver for coining into silver dollars.

5. Another type of money which has been used in American history, and used very frequently in recent years, both here and abroad, is known as *fiat money*. This is paper money which has no specific backing in precious metal, nor does the issuing body promise to redeem it at any particular time in metallic money. It is issued on the authority of the government and is forced into circulation by giving it legal-tender power, which forces the debtor to receive it from the government and enables the debtor in turn to pass on the money to other people. The greenbacks in practice were fiat money in this country from the time of their issue during the Civil War until 1879. Technically, all the United States money except gold became fiat money in March, 1933. Even after the new monetary system was established in January, 1934, paper money could be redeemed only in gold bullion and then only for export. To date the lack of the domestic redemption quality has not adversely affected our money.

6. The major portion of our actual circulating cash is composed of bank notes, or bank credit money. Formerly the national bank notes, backed by a deposit of specified issues of Federal bonds, ranked high in our circulating money. Now, however, these notes are being retired. Federal reserve notes and Federal reserve *bank* notes are discussed below.

Federal Reserve Notes. The Federal reserve banks issue two types of notes: Federal reserve bank notes and Federal reserve notes. The Federal reserve bank notes are being withdrawn from circulation by retiring the bonds which are used as their backing. The Federal reserve notes have risen to first rank in the volume of our circulating medium. The Federal reserve banks may issue Federal reserve notes when they deposit with the Federal reserve agent in their bank, who is a representative of the Board of Governors, an amount of gold certificates equal at least to 40 per cent of the value of the notes which they wish to issue. The remainder of the value of the notes must be deposited with the Federal reserve agent in the form of eligible commercial paper or of government bonds. Recently the enormous holdings of gold certificates by the reserve banks (about 19 billion dollars in February, 1948) has enabled them to issue Federal reserve notes backed almost exclusively by gold. There is no limit to the volume of notes which the banks may issue except that limit placed by the gold certificates and collateral which must be deposited.

Not only are the Federal reserve notes the largest part of the money

in circulation, but they are also important in that they give the money system an element of elasticity. The nation's requirement for money varies from time to time, and it is highly essential that the volume of money vary with this requirement. Experience prior to the establishment of the Federal Reserve System pointed out conclusively that the national bank notes, the greenbacks, and the metallic money are highly inelastic. But, in respect to the Federal reserve notes, the reserve banks ordinarily have unused issuing capacity and therefore the volume of circulating notes can be increased or decreased according to the requirements of business.

Elasticity may be required to offset hoarding, as in 1931 to 1933. During these years the *money in circulation* increased from 4.6 billion dollars in March, 1931, to 5.6 billions later in the same year and finally to 7.6 billion dollars in March, 1933, largely through an expansion of Federal reserve notes to replace various forms of money which, though listed as circulating, was actually being hoarded.

The elasticity of the system was also demonstrated during the Second World War when, on account of the great increase in business activity and prices, it was necessary to expand money in circulation very rapidly from 7.6 billion dollars on Dec. 31, 1939, to 15.4 billion on Dec. 31, 1942, and 28.5 billion at the end of 1945.

BANKING PRINCIPLES

Types of Financial Activity. Usually the various financial institutions known as *banks* are classified into commercial banks, savings banks, trust companies, investment banks, and miscellaneous. Data in Table

TABLE 29. NUMBER, DEPOSITS, LOANS AND INVESTMENTS OF BANKS IN THE UNITED STATES, DEC. 31, 1947

Types of bank	Number	Deposits* (millions of dollars)	Loans and investments (millions of dollars)		
			Total	Loans	Investments
All banks.....	14,714	161,850	134,908	42,999	91,909
Member banks.....	6,923	122,528	97,846	32,628	65,218
National.....	5,005	82,023	65,280	21,428	43,852
State.....	1,918	40,505	32,566	11,200	21,365
Nonmember banks....	7,791	39,322	37,062	10,371	26,691
Mutual savings.....	530	17,747	18,624	4,941	13,683
Other.....	7,261	21,575	18,438	5,430	13,008

* Includes interbank, demand, and time deposits.

29 show the magnitude of the banking business in this country. Although there are distinct institutions, such as savings banks and trust companies, the emphasis should be placed not on kinds of financial institutions but on types of financial activities. The word *bank*, when unmodified, refers to what are generally known as *commercial banks*. Yet these institutions ordinarily carry on savings and trust activities. Similarly, most institutions which carry the word *trust* in their title are actually commercial banks primarily.

Savings or time deposits whether in a separate savings bank or in a commercial bank presumably represent funds which the depositors do not expect to use for some time. Technically, neither are payable on demand, although the bank will usually permit withdrawal of savings deposits immediately upon request. By law time deposits are required to be left to the date of maturity of the certificates issued for them. Banks feel free to place considerable of their savings and time-deposit funds in less liquid investments, such as real estate mortgages, municipal bonds, and less marketable, but secure, corporate bonds. Savings and time deposits represented nearly half of the total deposits.

Though commercial banks carry on a wide variety of financial activities, their *commercial banking functions* have to do with the receipt and use of deposits payable on demand and transferable by check. Because the depositor views a demand deposit as his liquid funds, the banks keep these funds in more liquid assets. From the early days of English banking, it has been held that such deposits should be used to make loans to producers and merchants for their short-term, temporary needs. Liquidity of such loans presumably arises from their proximate maturity. In practice, however, this ideal has never been accomplished in American banking. Banks, in order to make use of all funds available, purchase long- or short-term obligations of governments and make longer loans to producers. Liquidity is obtained through holding large amounts of salable assets. Demand deposits of all banks were estimated at 89 billion dollars on June 30, 1947.

The Federal Deposit Insurance Corporation now insures up to \$5,000 each deposit in the national banks and in state banks which can qualify and which desire to become members of the corporation. Though most previous experience in American history with deposit-guarantee plans was unfortunate, this plan, being national in scope, has had a very satisfactory record.

The original form of the *trust company* was that of a financial corporation to act as the trustee for minors and defectives, to execute estates, and to do almost anything of a financial character. These liberal powers granted to trust companies enabled them to encroach on the field

of commercial banking until, at the present time, some organizations which started out as trust companies have come to be among the country's greatest commercial banks. No longer does the term *trust company* in the title of a financial institution indicate that it is purely a trust company. More frequently it will be a large commercial bank whose trust activities are carried on in a department of the bank.

Investment banks, which congregate largely in the greater cities, are financial institutions whose function is to underwrite the issues of bonds and other securities by corporations and public bodies. The process of underwriting consists of assuring the organization which is issuing the securities that they will be sold by a particular date at a given price, or, if they are not sold, the underwriting bank or syndicate of banks agrees to buy the securities at a certain price. These investment banks usually have agencies for distributing to such investors as savings banks, life-insurance companies, and private individuals, the securities which they underwrite.

Other types of financial institutions should be mentioned briefly. Of growing importance are the *savings and loan associations*, which are mutual organizations engaged in assembling relatively small savings and in the financing of urban building, primarily residential. In addition, there are such institutions as the Federal reserve banks and the various agricultural-credit agencies (described in Chap. 24) designed to solve certain specific credit problems.

Here our chief concern will be with the commercial banks. As the receivers and transferrers of demand deposits, they provide the medium of exchange in 90 per cent or more of our total transactions. Because the major purpose of our discussion of money and banking is to investigate what governs the quantity and value of our medium of exchange, this demand-deposit institution concerns us most. As we shall see below, however, the volume of demand deposits is related to the loans and investments of these deposit institutions. Lending and investing involve credit, a concept which is next explained.

Credit. Credit is the transference of wealth or value from one person to another upon the promise of the latter to pay a stated sum in the future. Thus a bank extends credit by advancing funds to its customer in return for the latter's promise to repay the loan in the future. The credit is extended at the option of the lender, after he has determined the credit standing of the borrower. The bank investigates the assets of the man who wishes to borrow, his ability to use the funds in business so that the loan may be repaid, and, above all, the character of the borrower. Sometimes these bases of credit rating are called the *three C's*, character, capacity, and capital.

Discounting. The process of making short-time loans is frequently referred to as the process of *discounting*. Technically, discounting means taking interest out in advance. Thus the ordinary commercial bank may not request that the borrower pay back the principal plus the interest but instead may subtract the interest from the principal at the time the loan is made. If A wishes to borrow \$1,000 for six months at 6 per cent, the bank would in that case advance him, not \$1,000 but that sum less the discount of \$30, reducing the sum advanced, or proceeds of the loan, to \$970. However, in financial parlance the word *discount* has come to refer, not only to the act of taking out interest in advance, but also to the whole process of making a short-time loan and to the loan itself.

It is in connection with the process of lending money that the peculiar characteristics of commercial banking become important. Although banks are sometimes described as institutions which gather together the surplus funds of stockholders and depositors, sums both large and small, and make these funds available to the business world, the volume of credit extended by commercial banks as a group is not limited to the amount of capital contributed by the stockholders plus the amount of "money" deposited by individuals, but they may multiply this "money" from five to ten times.

Bank Operations. The nature and activities of a commercial bank, particularly the process of creating credit, may be demonstrated by noting the steps whereby a bank builds up its business after its founding and how it then carries on its day-to-day operations. Suppose a new bank, to be called the First National Bank of X, is started with a total capital stock of \$75,000, plus an additional contribution by the stockholders of \$25,000, which will appear in the bank's statement or balance sheet as *surplus*. Of the \$100,000, \$40,000 is used to buy a building and equipment, the remainder being kept as cash. Of the cash, \$40,000 is sent to the Federal reserve bank as the legal reserve behind the deposits which the bank expects to receive or create in its lending activities. The statement would read:

Assets		Liabilities	
Bank Building	\$ 35,000.00	Capital Stock	\$ 75,000.00
Furniture and Fixtures	5,000.00	Surplus	25,000.00
Cash and Due from Banks	60,000.00		
	<u>\$100,000.00</u>		<u>\$100,000.00</u>

On the first day the new bank is open, it receives deposits of \$10,000 in cash and \$25,000 in checks, which may be converted into cash by presentation at the banks on which they are drawn. The next day additional deposits of \$25,000 in checks are made. The bank's statement now reads:

ECONOMICS WITH APPLICATIONS

Assets		Liabilities	
Bank Building.....	\$ 35,000.00	Deposits.....	\$ 60,000.00
Furniture and Fixtures.....	5,000.00	Capital Stock.....	75,000 00
Cash and Due from Banks..	<u>120,000.00</u>	Surplus.....	<u>25,000 00</u>
	<u>\$160,000.00</u>		<u>\$160,000 00</u>

Suppose that John Jones, a farmer, asks for a loan of \$500 to harvest his wheat crop. After due consideration of the credit position of John Jones, the bank agrees to lend the money on Jones's note secured by a chattel mortgage on his wheat crop. The bank discounts the note for three months at 6 per cent, adding to John Jones's deposit account the sum of \$500 minus the discount of \$7.50, or \$492.50. In the balance sheet, portraying the condition of the bank, the deposits will be increased by \$492.50 and the assets by \$500 under loans and discounts. The discount of \$7.50 appears among the liabilities as "Undivided Profits." During the day additional loans totaling \$30,000 are made, the proceeds of which total \$29,750, of which \$4,000 is taken as cash, the remainder being advanced as deposits. Discounts on the \$30,000 of loans are \$250, which is assigned to "Undivided Profits." The statement now reads:

Assets		Liabilities	
Loans and Discounts.....	\$ 30,500.00	Deposits.....	\$ 86,242.50
Bank Building.....	35,000.00	Capital Stock.....	75,000.00
Furniture and Fixtures.....	5,000.00	Surplus.....	25,000.00
Cash and Due from Banks..	<u>116,000.00</u>	Undivided Profits.....	<u>257.50</u>
	<u>\$186,500.00</u>		<u>\$186,500.00</u>

Jones now proceeds to pay out \$125 for labor by means of checks drawn on his account. If the employees demand cash from the bank upon presenting the checks, the following changes take place on the balance sheet of the bank. The deposit item is reduced by \$125 and the cash item for a similar amount; thus the assets and liabilities stay balanced. John Jones then pays out \$75 for machine hire to his neighbor, Frank Smith, who, in turn, deposits the check in the same bank. The bank then reduces the account of John Jones by \$75 and increases that of Frank Smith by a corresponding amount. Because Smith deposits the check of Jones in the same bank, the whole process of making payments is a bookkeeping transaction which goes on within the bank, and no change occurs in the bank statement. If Smith had deposited the check in another bank, however, the latter could demand \$75 in cash from the First National Bank, cash being reduced by \$75 but the deposits on the liability side also being reduced by a corresponding amount. In fact, during a day the bank will be called upon to pay many checks drawn on it but deposited elsewhere, say \$15,000. If so, its cash will be reduced by \$15,000 unless at the same time it receives deposits of an equal or greater amount of cash or checks drawn on other banks.

When Jones, after the sale of his wheat, pays off his loan with a check drawn by a wheat buyer on the buyer's bank in a distant city, the "Loans and Discounts" are reduced by \$500, but amount "Due from Banks" is increased by a corresponding amount. The complete explanation of the events which take place when more than one bank is involved in the credit transaction, and when payments in different communities are involved, will be discussed below in the section dealing with the clearing of checks.

According to the last balance sheet presented, the bank had total cash of \$116,000 and deposits of only \$84,742.50, or a reserve ratio (cash to deposits) of about 130 per cent, whereas good banking practice allows that less than 35 per cent of deposits be held as cash and due from banks. Therefore the bank is in a position to make more loans in the form of discounting promissory notes for farmers and local businessmen, to buy out-of-town short-time loans such as banker's acceptances and commercial paper, to lend on mortgages, and to buy bonds. Interest and other earnings begin to come in and, when in excess of the expenses of operating the bank, are put in "Undivided Profits," until such time as the directors either put the profits into "Surplus" or declare a cash dividend on the capital stock. All these transactions together, plus additional deposits, loss of cash from buying bonds and commercial paper, etc., so change the bank statement that at the end of six months it reads:

Assets		Liabilities	
Loans and Discounts.....	\$346,576.50	Deposits.....	\$418,576.00
Bank Building.....	35,000.00	Capital Stock.....	75,000.00
Furniture and Fixtures.....	5,000.00	Surplus.....	25,000.00
Cash and Due from Banks..	135,250.00	Undivided Profits.....	3,250.50
	<u>\$521,826.50</u>		<u>\$521,826.50</u>

The Bank Statement. After this bank has become firmly established, the various parts of the balance sheet come into a normal relationship to one another as in the typical balance sheet of a bank in a small town presented in Table 30. On the assets side of the balance sheet, the item Loans and Discounts includes all loans the bank has made to its customers on short-time promissory notes or on mortgages, and purchases of bank acceptances and commercial paper. Loans and discounts usually form the major asset of this type of bank. Overdrafts arise when depositors overdraw their accounts, an asset or a claim against depositors which is not desirable, and this bank shows overdrafts of \$375.13. The items "Furniture and Fixtures" and "Bank Building" need no explanation. The asset "Other Real Estate" would usually refer to real estate seized to satisfy debts, perhaps by the foreclosure of a mortgage. Each bank which is a member of the Federal reserve system must actually buy stock

TABLE 30. THE FIRST NATIONAL BANK. STATEMENT AT THE CLOSE OF BUSINESS
SEPT. 30, 1947

Resources	
Loans and Discounts.....	\$ 593,281.75
Overdrafts.....	375.13
Furniture and Fixtures.....	8,800.00
Bank Building.....	67,000.00
Other Real Estate.....	6,406.55
Stock in Federal Reserve Bank.....	4,200.00
U.S. Securities.....	\$1,157,350.00
Other Stocks, Bonds, and Warrants.....	131,573.42
Due from Banks, and Cash.....	524,118.51
	<u>1,813,041.93</u>
Total.....	\$2,493,105.36
Liabilities	
Demand Deposits.....	\$1,662,144.50
Time Deposits.....	749,329.76
Due to Banks.....	97,210.48
Reserves.....	14,982.50
Capital Stock.....	\$75,000.00
Surplus.....	70,000.00
Undivided Profits and Reserve.....	24,447.12
Invested Capital.....	<u>169,447.12</u>
Total.....	\$2,493,105.36

in the Federal reserve bank of its district to the amount of 3 per cent of its paid-in capital and surplus.

The meaning of the last three items in the assets is clear, but their significance should be emphasized. "Due from Banks and Cash" composes the *primary reserve* of the bank. This fund is the first line of defense in case depositors demand an unusual amount of cash. Although the minimum ratio of cash and due from banks to deposits is prescribed by law, usually about 7 to 15 per cent of demand deposits, conservative bankers always keep more than the minimum. The size of the primary or cash reserve limits the amount of credit which may be created. The two other items of "U.S. Securities" and "Other Stocks, Bonds, and Warrants"—being composed to a large extent of securities which may be easily sold for cash—are included in what is known as the *secondary reserve*.

Turning to the liability side of the bank statement, we note that the two items of "Demand Deposits" and "Time Deposits" form about 80 per cent of the total obligations. In this bank about two-thirds of the deposits are demand deposits and about one-third are time deposits. Reserves of \$14,982.50 appearing on the liability side is an item set up to care for future losses on assets. The next three items ("Capital

Stock," "Surplus," and "Undivided Profits and Reserve"), which are put together as "Invested Capital," represent the stockholders' equity in the bank—claims which would not ordinarily be realized (except undivided profits) unless the bank decided to go out of business. The surplus represents in part a payment of more than \$100 a share for stock when the bank was founded, and in part a return of earnings into the business.

Credit Expansion. By experience, banks have learned that on a given day, during times when the people have confidence in their government and financial institutions, depositors will withdraw in cash but a small portion of their funds. A large part of the deposits withdrawn are used to buy goods, the sellers of which will redeposit the cash or the checks used in making payments. The minimum ratio of cash reserves to demand deposits is prescribed by law as from 7 to 13 per cent, according to the locality of the bank.¹ In the case of banks which are members of the Federal Reserve System, these legal reserves must be deposited in the reserve banks. Nonmember state banks usually carry part of their legal reserves as deposits in other banks. Banks must have additional cash for till purposes and for unexpected demands, since they are not expected to pay out legal reserves. Therefore banks usually keep for safety an amount in cash and due from banks equal to from 20 to 35 per cent of the deposits. A considerable part of the individual bank's liquid reserves, however, are carried as deposits in other banks. As a result the cash possessed by the banking system as a whole is usually less than 20 per cent of total deposits. Experience has shown that these reserves are ample in ordinary times.

For every \$100 in cash deposited, the banks need not keep over about 10 per cent in actual cash, though each individual bank will have a considerable reserve in "Due from Banks." Therefore, for every \$100 in *lawful money* added to the cash reserves of the banking system, the banks together may create demand deposits equal to from \$500 to \$1,000. It is through this process of *creating* demand deposits (or checking accounts) as a means of lending by banks that there has been 90 billion dollars in deposits subject to check and 55 billion of time deposits in this country at times when there was only 30 billion dollars of money in circulation.

Though the banking system as a whole, in the manner explained above,

¹ The minimum legal reserve for national banks is 3 per cent against time deposits, and from 7 to 13 per cent, depending on the size of the town or city in which the bank is located, against demand deposits. The Board of Governors of the Federal Reserve System has the power to double the minimum legal reserve requirements of its member banks. In June, 1948, reserve requirements were 6 per cent for time deposits and 14 to 24 per cent for demand deposits.

can create deposits of many times the amount of the reserves of *lawful money*,² the reader should not conclude that a single bank can greatly increase its deposits simply by making loans. This is because checks will be drawn against the deposits thus created and most of these checks (perhaps four-fifths of them) will be deposited in other banks. A single bank would, therefore, lose its cash in the clearing process. But when all banks lend freely, they all gain deposits by the lending process. The limit to such lending is the amount of reserves which must be kept against the deposits thus created.

Neither should the reader conclude that all the interest collected on created deposits is a part of gross profit to the banks. To attract deposits banks pay interest on practically all time deposits. Banks perform a number of services in connection with demand deposits, not all the costs of which are covered by service charges.

The Collection of Checks. The fact that over 90 per cent of the business transactions of the United States are carried on without the use of hand-to-hand cash is made possible by a comprehensive system of offsetting claims, one against the other. This offsetting process goes on within every commercial bank as between its own depositors, and, when depositors outside the bank are involved, the offsetting is done through the process of clearing checks.

When John Jones draws a check against his deposit in the First National Bank and hands this check to Frank Smith in payment for a cow, the check closes the transaction so far as the two men are concerned. When Frank Smith deposits the check in the First National Bank to his account, the bank's bookkeepers add the sum, let us say \$110, to the account of Frank Smith and subtract it from the account of John Jones. If Frank Smith takes part or all of the check in the form of cash, then money, in the sense of hand-to-hand cash, comes into the transaction. But ordinarily the larger proportion of checks will be presented to the bank for deposit rather than to obtain cash.

Suppose now that Frank Smith does not deposit with the First National Bank but in the Citizens National Bank. The transaction then becomes involved. The Citizens National Bank will add the sum of \$110 to the account of Frank Smith, but, in order to reimburse itself for this increased deposit, it must obtain the funds from the First National Bank. It could present the check at the First National Bank and obtain cash. It is quite probable, however, that the First National Bank has some checks drawn on the Citizens National Bank. In that case a system of

² Lawful money is here used to refer to that money which may be counted as a part of basic reserves against deposits. This includes gold or gold certificates, silver or silver certificates, and United States notes, but does not include bank notes. Bank notes must be redeemed in *lawful money*. The term is also used with other meanings.

offsetting claims between the First National Bank and the Citizens National Bank would be more convenient. In small towns having only two or three banks, the checks can actually be presented by one bank to the other and then at the end of the day the balance be settled in cash. In larger cities where several banks are involved, clearinghouses are organized. At the daily or semidaily meetings of representatives of the various banks each bank presents all checks it has drawn on other banks, and all other banks present to it checks which it must pay. Then the banks which have more checks drawn on them than they have drawn on other banks must make up the balance in cash. The cash is then paid over to the banks which gain in clearing for the day. Whether settlement shall be daily or weekly or whether it shall be by cash or by checks on some out-of-town banks or the Federal reserve bank depends upon the organization of the clearinghouse. If the city has a Federal reserve bank or branch, clearing balances will be settled by checks on deposits in the Federal reserve bank. The important thing to grasp is that through the process of clearing the volume of cash required for the tremendous amount of transactions is relatively small.

When more than one city is involved, the geographic separation of the various banks prevents daily meetings of the clearinghouse. The organization under the Federal Reserve System, known as the *par check-collection system*, has facilitated the collections of interstate and inter-sectional payments. Each bank which is a member of the check-collection system may send checks drawn on out-of-town banks to the Federal reserve bank of the district. That bank sends them on to the bank on which the checks are drawn, and after a period of time varying with the distance between banks the account of the latter is reduced and that of the former bank is increased by the amount of the check. Thus the reserves which banks have on deposit with the Federal reserve bank of the district are used as the basis for clearing transactions. A bank which has more checks drawn against it than it deposits against other banks must take steps to maintain its deposit with the reserve bank. Clearing between the Federal reserve districts is done through the gold settlement fund in Washington. Par collection, which is required of all banks clearing through the Federal Reserve, means that banks on which checks are drawn may not deduct an exchange fee.

BANKING SYSTEM OF THE UNITED STATES

Commercial banks receive their right to do business by a charter from either the national government or the state government of the state in which they expect to do business. Nonincorporated or private banks, prohibited in most states, are unimportant. The laws usually prescribe the minimum capital with which banks may be established in relation to

the size of the city in which they expect to do business, the minimum cash reserves which they must keep behind deposits, types of loans which may be made, and the duties and responsibilities of the officers. To give greater assurance that the banks are properly conducted, the laws provide for periodic examinations by expert examiners under the direction of the state banking department or national Comptroller of the Currency. The activities in which banks may indulge are primarily those determined by the nature of the commercial banks as outlined above. There is some variation in banking laws from state to state and between the laws of states and those of the national government. Because of a fear of large banks, our laws used to favor the development of many small banks. Legislation since 1933, however, has permitted statewide branch banking in most states. The number of commercial banks has been reduced from 20,834 in 1930 to 14,060 in 1947 partly by liquidation of failed banks and partly by absorption into branch systems. In this way our banking system is becoming more like those of Canada and major European countries, which are made up of a few very large banks with hundreds of branches. In Canada there are only ten banks with hundreds of branches and three of them do two-thirds of the total banking business. Other institutions, savings banks, trust companies, Morris Plan banks, and most savings and loan associations operate under state charters. Federal land banks, Federal intermediate-credit banks, other recent farm-credit agencies, Federal savings and loan associations, and Federal reserve banks have charters from the national government.

The Federal Reserve System. Superimposed upon the ordinary commercial banking system is the Federal Reserve System, established in 1914. The Federal Reserve System was organized to remedy the chief defects of the old national banking system, particularly as these defects had come to light in the panic of 1907. First, the system was to *mobilize* the banking reserves of the country and to use these resources to aid banks in times of financial stress. Second, it was designed to provide greater unity among the thousands of independent banks and thus to exercise a degree of *control* over the *credit supply*. Third, reserve banks were to provide a more *elastic currency*, the Federal reserve note.

The United States is divided into twelve Federal reserve districts, each of which contains a Federal reserve bank, and, in the case of some of the districts covering a wide area, the Federal reserve bank has one or more branches. These banks are owned by member banks, each being required to subscribe 6 per cent of its capital stock and surplus in the stock of the Federal reserve bank of its district as called for. Up to the present time only 50 per cent of the subscription has been called for. All national banks must belong to the system; state banks may belong if they wish, provided they meet the requirements of the Federal Reserve Sys-

tem. Each Federal reserve bank is operated under the control of a board of directors, the majority of whom are elected by the member banks of their district, and the remainder are appointed by the board of governors of the Federal Reserve System. The responsibility for the general supervision of the system and the coordination of the activities of the separate Federal reserve banks is placed upon the shoulders of the Board of Governors of the Federal Reserve System which is appointed by the President of the United States with the consent of the Senate.

Federal Reserve Rediscounting. The most important activities of the Federal reserve banks are three: (1) the issuing of bank notes, (2) the advancing of funds to member banks, and (3) credit-control activities, the nature of which will be explained below. Whenever a member bank has discounted the note of a customer and the bank wishes in turn to obtain the funds represented by the loan before the loan is due, the bank may rediscount this note. Prior to the establishment of the Federal Reserve System there was no organized plan of rediscounting. Each bank had to find some other bank which had surplus funds and which was willing to rediscount the note. Now the Federal reserve banks stand ready to rediscount all commercial paper or promissory notes submitted to them by member banks, provided this paper is of the type which the law allows the reserve banks to purchase and appears to the reserve bank to be a good risk. Federal reserve banks may rediscount bank loans only when they arise out of agriculture, industry, or trade and have no more than three months until maturity date. In the case of agriculture this time has been extended to nine months, inasmuch as the productive process there requires such a long time. To an increasing extent, however, member banks borrow from the reserve banks, not by rediscounting, but upon the member bank's own note secured by a deposit of government bonds, or at a higher rate, of other satisfactory collateral. The reserve banks obtain their funds for investment purposes from the original investments in the bank's capital stock by the member banks, from earnings on that capital put back into the business, from deposits by member banks with the Federal reserve bank, and to some extent from the creation of bank credit, as described below.

At the present time all the legally required reserves of member banks are deposited with the Federal reserve bank of the district and serve the dual purpose of reserves and the basis for check-clearing operations explained earlier. Behind these deposits by member banks the Federal reserve banks are required to keep as a minimum only 35 per cent in *lawful money*, so that the reserve banks can create deposits just as can the member banks for their customers. Thus, when a member bank finds its reserves are running low, it may borrow at the Federal reserve bank, which will add the proceeds of the loan to the account of the

member bank. Because the legal reserves of member banks are in the form of deposits with Federal reserve banks, this deposit increases the reserve of the member bank. The reserve bank, by crediting the deposit, has lowered necessarily its own ratio of cash reserve to deposits.

Centralized Reserves. The peculiar advantage of this system of reserves arises out of the fact that the reserves of a whole Federal reserve district are under central control and may be utilized to make advances or rediscount paper for the member banks in any section in which there may be financial stress. Without this mobilization the banks of such regions would have to seek aid in indiscriminate fashion wherever it might be obtained. The experience of the years prior to the establishment of the Federal Reserve System conclusively proved that organized reserves are highly desirable. Not only are the reserves organized within a Federal reserve district, but through relations between the reserve banks funds may be sent from one district to another. In 1921 the Minneapolis Federal Reserve Bank found its reserves strained by the rapid economic deflation in the wheat area and received aid in weathering this strain from other Federal reserve banks.

Credit Control. Based upon the experience of England in particular in the use of a central bank for the purpose of controlling the volume of credit, the supporters of the Federal Reserve System have expected it to assume a similar function. Excessive variation in the supply of bank credit seems to be an important factor in the extreme oscillation of prosperity and depression. If the reserve banks can control the credit supply, they should assist in preventing unsound credit conditions.

The Federal reserve banks have at their disposal three devices for controlling credit. First, the raising or lowering of the rediscount rate under the supervision of the Board of Governors is expected to have an effect on the interest rates which commercial banks charge their customers, particularly in the larger cities. This is expected in turn to bring increases or decreases in volume of bank credit. The degree of credit control which may be obtained by this method is much disputed among students of banking. By some it is believed that the change in the rediscount rate will have a psychological effect upon the businessmen of the nation. High rediscount rates should stand as a warning, whereas low rediscount rates should encourage businessmen by emphasizing the abundance of credit. Thus the rediscount rate of the New York Federal Reserve Bank was raised from $4\frac{1}{2}$ to 5 per cent on July 13, 1929, and to 6 per cent on Aug. 9 of the same year as an attempt to bring speculation into control. After the stock-market crash, the rate was lowered to $3\frac{1}{2}$ per cent by Mar. 14, 1930, and to $1\frac{1}{2}$ per cent on May 8, 1931, in an attempt to stimulate business.

As a result of the disturbed financial conditions from 1931 to 1933 the

rate was raised to $3\frac{1}{2}$ per cent. Beginning in 1934, in an attempt to encourage credit expansion, which in turn, it was hoped, would encourage an expansion of business activity, the discount rate was kept at $1\frac{1}{2}$ per cent till the depression of 1937 to 1938, when it was lowered to 1 per cent as a further encouragement to expansion; it was dropped to $\frac{1}{2}$ per cent at the end of 1942, in order to make it as easy as possible for businessmen to obtain credit to finance wartime construction and manufacture. Some months after the end of the war the rate went back to 1 per cent, and then in January, 1948, as a warning to commercial banks to tighten credit, it was raised to $1\frac{1}{4}$ per cent.

Second, in order to make the rediscount rates of the Federal reserve banks effective—in other words, to force the member banks to follow the lead of the Federal reserve banks—the latter operating as a unit through the Open Market Committee may make use of their privilege of buying and selling government securities and bank acceptances in the open market. When the reserve banks wish to force down interest rates and ease credit conditions, they may buy in the open market a large volume of government securities, paying for these securities with surplus funds on hand or with created credit. Member bank reserves are augmented just as when the member banks themselves borrow from the reserve banks. Thus the credit supply in the hands of the member banks is increased and should be an influence in lowering interest rates. On the other hand, when the Federal reserve banks wish to force up interest rates, they may sell their holdings of government securities to the open market and thus absorb from the market a large volume of credit. This act should have a contracting influence on the supply of credit.

At the same time that the Federal reserve banks were raising their rediscount rates in 1929 to restrain speculation, they were selling government securities in an attempt to withdraw credit from the market. After the speculative collapse, the reserve banks bought securities in an attempt to pump credit into the market to support the falling security and commodity values. Later, in the second quarter of 1932, in a concerted effort to revive business, the reserve banks bought government securities at the rate of 100 million dollars a week until their total holdings reached the stupendous figure of 1,800 million dollars. Large purchases were also made in 1933; but in 1933, in particular, member banks did not put these created funds to work, preferring, under the conditions existing, to carry the funds as excess reserves at the reserve bank.

With the Second World War and the consequent need for credit expansion, the Federal Reserve System enlarged its holdings of United States government securities from about 2 billion dollars in 1941 to about 24 billion in 1945. The purpose of these purchases was to increase bank reserves. Each time the Federal Reserve bought a government bond

from a bank, that bank's account at its reserve bank, and thus its reserve, was increased. This enlargement of reserves made it possible for the commercial banks to expand their loans to business.

A third device for credit control was given to the Board of Governors by the Banking Act of 1935, *viz.*, the power to change the reserve requirements of member banks. The board could not lower the requirements below the minimum reserves which had existed since 1917, but it could place the reserve ratios anywhere between those minimums and maximums of twice the minimums. Because of a growing fear of inflation during 1936 and 1937, the board increased reserve requirements by 50 per cent as of Aug. 16, 1936, and to twice the old ratios as of May 1, 1937. A sharp recession got under way in 1937, and in April, 1938, reserve requirements were reduced to a point 75 per cent above the 1917 to 1936 level.

They were tightened up again between 1938 and 1942 to the limit allowed by law, except for banks in Chicago and New York (central reserve city banks), for which requirements were lowered somewhat, but here reserves of 22 per cent were required in February, 1948, and of 24 per cent in June, 1948.

These three methods of credit control have certain weaknesses, so that while they have been effective in meeting minor movements in business activity, they are not powerful enough by themselves to check a powerful swing. Thus when businessmen are confident that good times will continue, as in 1929 or the beginning of 1948, an upward movement of discount rates will not discourage borrowings and check credit expansion. In like manner in a time of depression, merely lowering the interest rate is not a sufficient inducement to businessmen to borrow and start an upward movement. Shifts in the interest rate may, however, have a psychological effect.

The Federal Reserve System's purchases of government securities which expand commercial bank reserves, or its sales of such securities which contract them, also have a limited effect. In time of depression nobody wants to borrow from banks and banks are reluctant to lend despite excess reserves created by Reserve System purchases of securities. With the government's debt amounting to about 250 billion dollars after the Second World War, and its bonds forming the chief investment medium for banks, insurance companies, colleges, and other charitable endowments, as well as for innumerable individuals, the Reserve System is most reluctant to sell government securities to contract credit (through the consequent shrinking of bank reserves), because such sales might seriously lower the market price of government securities and endanger the financial security of the bondholders.

Because the Reserve Board feels that it cannot sell government secu-

rities to draw cash away from banks, thus reducing their reserves, it requested Congress late in 1947 for the power to raise the reserve requirements of commercial banks. At the special session of Congress in July, 1948, this request was granted to a small degree.

Other Government Banking Agencies. In order to alleviate the effects of the Great Depression and to revive business activity, a number of government banking institutions were established. Perhaps the most important was the first, the Reconstruction Finance Corporation, set up in 1932 to make loans direct to business concerns, farmers, and to banks whose assets could not be used to borrow at the reserve banks under the then existing restrictions. The Home Owners' Loan Corporation, now in liquidation, was created for the purpose of taking over house mortgages where foreclosure was threatened.

Since 1934, in particular, some of the agencies, notably the RFC, and new ones, such as the Federal Housing Administration, the Federal Home Loan Bank, Federal Savings and Loan Associations, or new powers for old agencies, such as industrial advances by reserve banks, have all been designed to increase the flow of investment funds by making loans which were not attractive to commercial and savings banks or private investors. An interesting device, that of the "insured loan," has been introduced by a number of these agencies. Thus, in the case of the FHA, loans are made to home owners by banks, insurance companies, etc., whom the FHA insures against loss up to 10 or 20 per cent of the total of their loans of this type. The FHA builds up an insurance fund by charging 0.5 per cent of the base of the loan. In an endeavor to spur the building of rental housing after the war, the FHA Act was amended so that the government in effect guaranteed loans on such housing up to 100 per cent of the estimated value. During the war also, the RFC guaranteed industrial loans by commercial banks to holders of war contracts and lent large sums of money directly as well.

The new agricultural loan agencies are described in Chap. 24.

Recent Banking Developments. Banking developments of the last two decades may be summarized as follows: (1) The banking acts of 1933 and 1935 strengthened the Federal Reserve Board's control of bank operations and credit conditions. Experience during the boom of 1925 to 1929 and the chaotic 1931 to 1933 period showed the need of unity of action by the reserve banks and of larger powers for them. (2) Machinery, notably the deposit insurance system and powers of lending by reserve banks on a wider variety of member-bank assets, was set up to fight bank runs and epidemic bank failures. (3) A whole variety of new government banking institutions, making home, construction, and industrial loans, has been created. (4) With liberalized banking laws, commercial banks have been branching into new fields, like install-

ment and personal loans. (5) Most important, as a result of the increase of the national debt in the 1930's and particularly during the Second World War, government securities, rather than commercial loans, have become the chief asset and source of income for banks. At the end of 1947, all commercial banks held about 70 billion dollars' worth of United States government securities, about 9 billion dollars' worth of other securities, and had outstanding about 38 billion dollars in loans.

Questions and Problems

1. Distinguish three uses of the term *money*.
2. Compare exchange through barter, through the use of money, and through the use of credit instruments as to (a) their relative importance today and (b) the facility of the exchange.
3. Of what significance is the fact that money may become *suspended purchasing power*?
4. Rank the various kinds of money in the United States according to the volume of each kind in circulation. Give the percentage of the total for the two most important kinds.
5. Select some particular bank, and determine in what kinds of financial activities it engages.
6. Take the bank statement given on page 298 of your text, and make the necessary changes in that statement so as to show the effect of the following transactions on the statement:
 - a. A loan of \$3,500.
 - b. The cashing of a \$100 check drawn on a deposit in the bank.
 - c. The same as b, except that the check was drawn on another bank.
 - d. The paying of a dividend of 3 per cent on the capital stock.
 - e. The maturing of \$3,000 of bonds held by the bank.
 - f. The foreclosure of a farm mortgage for \$2,000.
 - g. The paying of an \$800 loan by John Jones.
7. Explain why the following statement is true: "Though the banking system as a whole, in the manner above explained, can create deposits to many times the reserves of *lawful money*, the reader should not conclude that a single bank can greatly increase its deposits simply by making loans."
8. Suppose you deposit in your bank a \$100 check drawn on a bank in a distant city. Explain how your bank will receive payment on that check.
9. What are the functions of the Federal reserve banks?
10. Explain how the Federal reserve banks attempt to control the volume of bank credit. How successful have they been?
11. Do additional changes in our banking system seem desirable? If, so, explain.
12. What is meant by a *managed currency*?

Suggested Readings

1. E. M. Bernstein, *Money and the Economic System* (1934), is an excellent brief text.
2. R. B. Westerfield, *Money, Credit and Banking* (1946), is a comprehensive text on money and banking.
3. L. A. Rufener, *Money and Banking in the United States* (1934), Chaps. X and XI, is a clear-cut exposition of how banks expand credit.

4. C. R. Whittlesey, *International Monetary Issues* (1937), is an excellent critique of the gold standard.

5. *The Federal Reserve System, Its Purposes and Functions* (1939), prepared and published by the Board of Governors of the Federal Reserve System, portrays the Federal Reserve System.

6. J. W. Beaty, *How to Understand Banks* (1934), is a brief, readable description of bank functions and operations.

7. W. R. Burgess, *The Reserve Banks and the Money Market* (1936), contains a full description of the Federal Reserve System, together with much emphasis on the credit-control tools and policies of the system.

8. L. V. Chandler, *Money and Banking* (1948), is a good recent review.

CHAPTER 14

PRICE-LEVEL MOVEMENTS AND AGRICULTURE

The disruption of our economic system during the drastic price-level changes that have taken place since 1914 has concentrated the attention of farm leaders, business leaders, and economists upon the serious social consequences of great changes in the price level. The study of the price level is here divided into five parts: (1) meaning and measurement of the price level; (2) causes of variations of the price level; (3) history of the price level and the outlook for the future; (4) effects of price-level changes; (5) means of controlling the price level.

THE PRICE LEVEL AND ITS MEASUREMENT

The Price Level an Average. The general price level is the average of all prices at a given time as compared to some other time. The price level is a relative, not an absolute, figure; for our interest is in whether prices have changed from a higher point to a lower point or vice versa, not in whether prices are on the average absolutely high or low. Since the price level is an average, individual prices may vary more or less than the average, or may move in a direction opposite to that taken by the average. Although, the average price level as indicated by the wholesale price index fell by about 33 per cent between August, 1929, and August, 1932, the price of cotton, in the same period, dropped from 18.0 to 6.5 cents per pound, or a decline of 64 per cent, and the composite price of steel declined only 10 per cent. During the period from 1923 to 1928, in which the general price level remained fairly constant, the price of beef cattle rose from \$9.40 to \$13.91 per hundredweight, a 48 per cent increase. Such a variation in an individual price series, when the general level is about constant, is related to conditions affecting the supply and demand of this particular good.

During a change in the general price level, not only different commodities, but different groups or types of goods change in price more or less rapidly or to a greater or less extent than others. Thus, where as the general wholesale price declined 33 per cent from August, 1929, to the same month of 1932, farm prices fell 59 per cent, and the index of consumers' prices, about 22 per cent.

In the great price rise following the Second World War, the same divergence is to be observed. From 1939 to 1947, the general whole-

sale price index doubled, the average hourly earnings of factory workers about doubled also, while the index of farm product prices at wholesale went up about 2½ times and prices received by farmers went up nearly three times.

It is the fact of differences in the reaction of different types of prices to a general price-level change that makes the change so serious. Therefore it is the change in the price level, not whether we operate on a high or on a low price level, which brings major economic consequences.

Measurement of the Price Level: Index Numbers. The statistical device of index numbers is designed to measure the average change of any large number of items, such as the prices of a number of goods, expressed as a relative to some time period taken as 100. A simple illustration will show the essential steps in the construction of index numbers as well as emphasize the nature of the price level as an average.

The data necessary for the construction of index numbers of grain prices at the farm for the years 1939 and 1946 are presented in Table 31.

TABLE 31. CONSTRUCTION OF INDEX NUMBERS OF FARM GRAIN PRICES, JANUARY, 1939 AND 1946

(1939 season price = 100)

Commodity	1939			1946		
	Dollars per bushel I	Production, millions of bushels II	Price times weight III	Dollars per bushel IV	Weight, 1939 production V	Price times weight VI
Wheat.....	\$ 0.69	741	511.29	\$ 1.85	741	1,370.85
Corn.....	0.57	2,581	1,471.17	1.41	2,581	3,639.21
Oats.....	0.31	958	296.98	0.79	958	756.82
Barley.....	0.41	278	113.98	1.74	278	483.72
Total.....	\$ 2.01	.....	2,393.42	\$ 5.79	.....	6,250.60
Per cent of 1939..	100.0	.....	100.0	290.0	.....	261

The index numbers might be constructed by adding up the prices in 1939 of a bushel of each of the four grains, totaling \$2.01, and taking this as 100. Then the total for 1946, \$5.79, would be expressed as a percentage of the 1939 figure, or 290 per cent. An examination of Column II in the table, however, reveals that these grains vary widely in their importance, whereas the method just used gives equal weight to each grain, except for differences in prices, and hence may distort the picture as to the true change in the average of grain prices.

To overcome this difficulty, each of the prices per bushel should be

multiplied by a weight, here taken as the 1939 production, as in Columns III and VI. The resulting products should be summed, the total being 2,393.42 million dollars for 1939, which we shall take as 100 per cent. Now the price data for 1946 should be multiplied by the 1939 production, that production being used since weights generally remain fixed throughout. The sum of prices times weights for 1946, 6,250.60 million dollars, is 261 per cent of 1939. Thus if the index number for 1939 is 100, for 1946 it is 261. If the price data for 1932, or 1940, or any other years, were put through this process, 1939 being used as a base, the index of grain prices for those years could be found relative to 1939. In this illustration we have used the single year 1939 as a base. Very often an average of several years is used as a base. *Index numbers*, constructed as illustrated above, are a device to measure the average relative change of a group of prices. *Index numbers* which measure change in other aspects of economic life, such as production or trade, can be constructed also. *They express degrees of change in a series of items relative to a base, usually on a percentage basis with the base used as 100 per cent.*

The Choice of an Index of Prices. A number of index numbers of prices are available, each one of them designed primarily for one purpose. The selection of an index for a particular use depends on the purpose for which it is to be used. Here our primary purpose is to measure the general level of prices.

The most frequent practice, which we shall follow, is to use the Bureau of Labor Statistics index of the wholesale prices of all commodities as the measure of the price level. Other measures, like the Bureau of Labor Statistics Consumer Price Index, which includes many services like housing and utilities, might be better, but the wholesale price index has the advantage that it covers a very wide range of commodities at various stages of production so that it is the most comprehensive available. It has been figured out for the years back to 1749 and thus affords a very long continuous record of price variations. Our use of this index will be supplemented by others, like the consumer price index, and indexes for the measurement of special types of prices, such as wages or farm commodities.

The Price Level and the Value of Money. The average prices of goods and services represent the average exchange ratios between money and goods. When this ratio changes, we say the value of money—its power to command goods in exchange—has changed. When prices in general rise, money commands less goods, and we say that the value of money has declined. Conversely, falling prices in general indicate that the value of a dollar is greater. Thus changes in the general level of prices indicate opposite variations in the value of money.

THE VALUE OF MONEY

Money a Commodity. Money is a commodity which differs from other commodities primarily in that the demand for it is not for consumption but as a medium of exchange. If gold were not used as the backing for most currencies, the demand for it would be much less and its value but a fraction of its present worth. Irredeemable paper money is in itself worthless, but the fact that it will be accepted by sellers, even though at a discount, gives it a value. Even irredeemable paper money will maintain a stable value if the quantity is properly restricted.

The Supply of Mediums of Exchange. When a nation is on the gold standard or a modified version of it, like the United States, the quantity of its money is limited to a specified multiple of that nation's holdings of gold. Even if the paper money is redeemable, which is not the case in the United States, a gold reserve of considerably less than 100 per cent is maintained back of it. Furthermore, these reserve requirements may be changed by law or by the habits of the people with respect to demanding coin for the paper and therefore make possible a reduction in reserve requirements. Then more paper money can be issued with a given amount of gold. In general, the tendency has been to lower reserves in standard money as the people have acquired more confidence in the integrity of governments. Prior to the devaluation of the dollar in 1934, the United States had about 9 billions of money as the term is generally used (with 5 billions or less normally in circulation, excluding bank deposits) with only about 4 billions of gold behind it. After the devaluation, by which the dollar value of gold was increased to about 7 billion dollars (and through domestic gold production and imports by which the dollar value of gold was increased to 23 billion dollars by 1948), the additional amount of paper money which could have been created on this added gold reserve was not immediately needed, and hence, after 1934, gold was a larger proportion of the total money than before.

To the extent that the ratio of reserves of standard money to the currency in circulation remains constant, variations in the money supply are made possible by variations in the gold stock. Clearly if a country's gold reserves are less than the specified minimum, it must reduce its money in circulation, change the reserve requirements, or reduce the gold content of its monetary unit. On the other hand, the possession of gold beyond that which is needed as reserve behind existing money can result in increased money in circulation only if the authorities see fit to issue additional money and the business community to use it.

The gold stock for the world as a whole is affected by discoveries of gold deposits at irregular intervals and by the profit to be derived from

operating the deposits already known. Since the price of gold is usually fixed by law—as in this country, where until October, 1933, it was \$20.67 per ounce for pure gold—the variable which affects the profits of gold-mining companies is the cost of operating mines. With the drastic drop in labor and other costs in the early 1930's, many old mines were reopened, small placer deposits opened, and the production of gold increased noticeably. After January, 1934, the new gold price of approximately \$35 per ounce stimulated gold mining to an even greater extent. A large percentage increase in gold production, however, means but a relatively small increase in the world's stock of monetary gold. In 1947 the new gold produced was worth about 770,000 million dollars, equal to 2 per cent of the total world monetary gold stock of 36 billions. Nearly two-thirds of this gold is in the United States.

Importance of Gold Supply. The importance of a gold stock in a country like the United States, where 90 per cent of the exchanges are carried on by the use of credit instruments and almost all the rest in irredeemable paper money, is that there is a relation between the quantity of credit and paper money and the supply of gold. This is so because banks keep reserves against their deposits, which are created by their credit operations, and if we trace back, we find that reserves must consist of or be backed by gold. In the nineteenth and early twentieth centuries, when most important countries were on the gold standard and there was a fairly definite relation because of law or custom between cash in circulation and gold, the quantity of gold available was of extreme importance. The increased gold production from California after 1849, and the larger Klondike and South African supplies after 1890, helped increase the quantity of money and thus raise prices the world over.

Now, however, the importance of the gold stock in a particular country or the world over has greatly declined, since so many currencies are on a "managed" or "modified gold-standard" basis. The importance of the level of the gold reserves has also been reduced by the general tendency mentioned previously to decrease reserve requirements or to modify them when they threaten to cut down the amount of money in circulation. Nevertheless, as long as gold is still required as a reserve in the most important nation, the United States, as well as in a great many other countries, and as long as it is a universally recognized medium of international exchange, the forces determining the quantity available must be studied and regulated. The time, however, may come when no metallic backing is required for currency, and then gold will lose its special importance—and value.

The Value of Money. Whenever, as during the years after the Second World War, there has been a violent upward movement of prices, people say, "A dollar isn't what it used to be," or "A dollar is really worth only

50 cents nowadays." People are very conscious of a change in the value of money at such times. A change in the value of money is the converse of a change in the general price level. What brings about these changes we shall now try to explain.

Very large movements up or down of the general price level have been frequent in our history, as shown by Fig. 25 and the discussion which follows. These movements are of the profoundest importance because of their influence on business activity and because they bring about changes in the relative economic position of different groups in the community. For instance, during a time of general price-level change, the prices of agricultural commodities move up (or down) faster than other prices. In consequence of this and for other reasons, farmers tend to benefit disproportionately in a period of price advance and suffer when prices fall.

As with so many major economic issues, explanations of price-level changes vary widely in emphasis, if not in fundamentals.

Quantity Theory. The most generally accepted theory of the value of money used to be the *quantity* theory, which explained price changes as being due chiefly to the effect of changes in the quantity and velocity of circulation of money (cash and credit instruments), assuming the volume of goods to be unchanged or at least that the volume of goods was determined by nonmonetary forces. This was therefore a *monetary* explanation of price changes.

The quantity theory was summarized in the famous equation of exchange,

$$MV + M'V' = PT,$$

made widely known by Professor Irving Fisher, in which:

M is the volume of money.

M' is the volume of credit instruments (bank deposits subject to check).

V is the velocity of money.

V' is the velocity of bank deposits.

P is the price level.

T is the volume of things to be exchanged.

Expressed simply as an equation, it is a truism, for obviously volume of mediums of exchange times the velocity (frequency of exchange within a given period) must equal the volume of things exchanged times the prices at which the exchanges take place. The important question is whether changes in the quantity of the circulating medium make for changes in prices or vice versa, and whether changes in *T*, the volume of trade, are independent of these or tied in with them.

Even a cursory examination of past price movements shows that price and volume of trade have often moved ahead of movements of M and M' and V and V' or in a way not to be explained by the movements of quantity and velocity. Thus the movement of T (volume of trade) preceded prices, up or down, in 1920 to 1921, 1922 to 1923, 1923 to 1924, 1924 to 1925, and preceded changes in M' in 1922 to 1923 and 1923 to 1924.

More recently, the price recovery from 1933 to 1937 did not go anywhere nearly so far as the increase in M' (bank deposits) would have indicated, and, again, there was a great increase in deposits between 1938 and 1941 with no important change in the price level. All these examples illustrate the difficulty of deducing price movements from the quantity theory. It is evident that variations of the price level with the ups and downs of business, extending over periods of (say) three to five years and occasionally more, are accompanied by variations in all the factors in the equation and a movement in any one factor may be the cause—or effect—of a movement in any other. As we pointed out in the beginning of Chap. 13, all these factors are interdependent.

Reexamination of the Quantity Theory. Questions like those raised above have led to a critical examination and qualification of the quantity theory. For one thing, it is clear that the theory strictly interpreted rests on the assumption of full employment of men and resources. This was best brought out in the period 1938 to 1941, when prices stayed on a comparatively even keel as bank deposits and volume of trade expanded. This was due to the large amount of unused capacity in the American economy at that time. As purchasing power and bank deposits increased in those years so did production. The flow of things kept pace with the increased circulation and prices therefore kept level.

At a time when the productive factors are pretty fully employed, so that production cannot increase while the circulating medium is increased and is used, prices will be bound to go up. But even here, notice, there are qualifications: there must be full employment, and any increase in the circulating medium must be actively used in order for prices to be affected.

Those who emphasize the importance of the quantity of money as a price-making factor, therefore, point out that changes in quantity have most effect when the factors of production are fully employed. At other times, while quantity has an effect on prices, it can be and usually is largely offset by increases in T , the volume of output and trade.

Other Theories. The qualifications and assumptions involved in the quantity theory, and the fact that it seems impossible to say in most instances which comes first, an increase in business activity or an increase in the quantity of money, have led many economists to look for other, or at least additional, explanations of the course of prices, chiefly

in the level of business activity or in anticipations of the course of business. In terms of the equation of exchange, they find T , or anticipations of T , a more important factor than variations in M . These economists, largely influenced by the views of J. M. Keynes (which will be discussed again in Chap. 28) believe that price largely depends on the level of business, which in turn depends on whether people are willing to spend their income on consumers' goods—use their purchasing power—and actively invest the rest. If people are actively investing and spending, there is an upward pull on prices, which may or may not be offset by changes in the quantity. If people are not willing to spend or invest, increases in the quantity will be of no effect.

In a certain sense what we are saying here is that velocity of circulation is as important as quantity in determining prices. But velocity does not stand by itself; it depends on the willingness to spend or invest, which are therefore the fundamental factors behind prices.

Role of the Treasury and Central Banks. Nor does quantity stand by itself. In all modern states, including the United States, the quantity of money is very largely determined by the credit policies of the central banks and the fiscal policy of the Treasury. If a government spends more than it receives in taxes and borrows the rest, this has the effect of increasing the quantity of money; a reverse policy reduces it. A price-level movement might therefore come about through an increase in the money supply by central-bank action coupled with government action to encourage business activity (increase spending and investment), such as lowering taxes.

The most important and clearly seen indications of the influence of government policy are in the great price rises always attendant upon wars. Here the government needs things, so it borrows or prints the money necessary to buy them. The quantity of money is increased truly, but this is a consequence of an overpowering demand, an overwhelming desire to spend and invest on the part of the government, whose appetite for things during a time of war is insatiable.

Summary. In conclusion it may be said, as was said at the beginning of Chap. 13, that the influences on the general price level are manifold and that the strength of these influences varies with the position of the business cycle and the psychology of the people. When people do not want to spend money and business activity is low, a great quantity of the circulating medium has no effect on prices. When business activity is high and no more things can be produced, an increase in the quantity of money will almost undoubtedly cause prices to go up, as there cannot be an increase in production to offset it. Further complicating the picture is the fact that the price level is influenced by other factors, psychological ones included. If people think that prices are going to rise,

business activity and bank deposits are likely to rise also. In fact, except where an excess of government expenditures over receipts is the cause of deposit expansion, the increased supply of the circulating medium, particularly bank deposits, must stem from business borrowing.

It may be true that really long price movements, such as the fall that occurred from 1865 to 1896 and the rise from 1896 to 1920 (see Fig. 25), may be more influenced by the quantity of money, while shorter term movements within a business cycle, as the fall from 1929 to 1932, may be due more to the level of spending and investment. Such a distinction may have had a good deal of validity before 1914, when the quantity

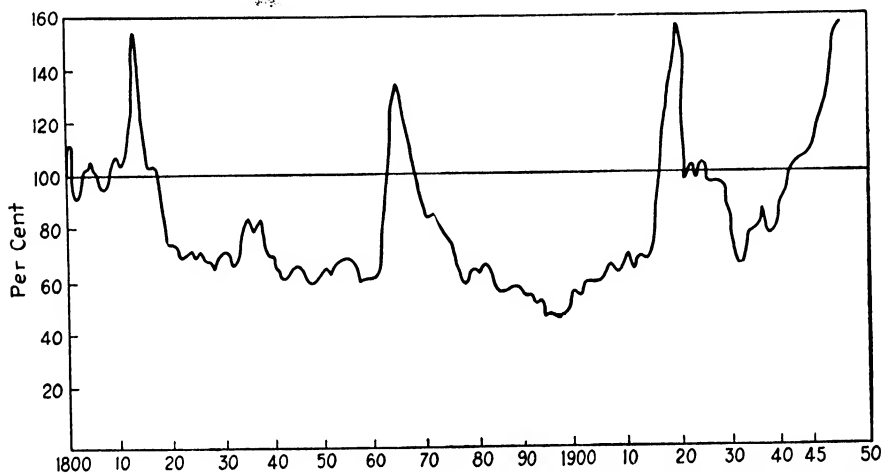


FIG. 25. Wholesale prices—all commodities—yearly average (1926=100). Source: Bureau of Labor Statistics, USDA.

of money bore some relation to gold, but less since that time, when the quantity has been largely subject to government control and not tied to gold stocks. The most prominent aspect of government influence has been the increase in both business activity and quantity of money arising in consequence of the government's voracious need for goods and services of every description during wartime.

It can hardly be asserted that it was the increase in the quantity of money alone during wars which increased prices; it was rather the whole complex, of which the increased quantity of money was part. As the government spent more than it received in taxes, it borrowed and created bank deposits, and so did businessmen expanding their production to meet war needs. As prices spiraled up in consequence of the very strong demand and expansion of the circulating medium, the government and business spent more and borrowed more, pushing prices up higher.

MOVEMENTS OF THE GENERAL PRICE LEVEL

Periods of Wartime Inflation. The first outstanding characteristic of the history of the price level is that during the years shown in Fig. 25 there are four points of very high prices, which correspond to periods of war. A period of extensive military operations cannot be financed without a considerable degree of inflation. This inflation may come through the issue of inconvertible money as during the Civil War or through the expansion of bank credit and government debt as during both world wars. In past cases, following the cessation of hostilities, came a period of sharp downward revision of the price structure. After the Civil War, the first downward movement accompanied the return of the greenbacks to convertibility, which was prolonged to 1879. After the First World War the first sharp deflation came with the contraction of bank credit in 1920, followed by eight years of stability, to be followed in turn by the still more drastic deflation after 1929.

It is impossible yet to tell what will be the nature of the decline that will presumably take place from the peak levels attained after the Second World War. After the first very sharp breaks which followed the attainment of the price peaks following the War of 1812 and the Civil War, a gradual decline ensued. After the sharp break in 1920 to 1921, however, there was a seven-year period of comparative price stability, followed by another sharp break. Which one of these two patterns will occur in the future, or whether either will, cannot be foretold. Indeed, though it is the almost universal belief that the price level will come crashing down within a few years, this is by no means certain. "What goes up must come down" may be a true saying in the physical world, but it is not necessarily so in the economic world. Those gravitational forces which make a rocket come down as fast as it went up are always the same and always exert the same pressure. In the economic universe, however, new forces are always coming into being, and the pressure exercised by existing forces is extremely variable. There is nothing, therefore, predestined about rises or declines in the price level.

Perhaps the most important new force on the economic scene which makes prediction on the basis of past experience almost impossible is the part the government now plays, not only in determining the volume of the mediums of exchange, which it does to a much greater extent than ever before, but also in affecting every kind of economic activity. Should a severe and apparently long-continuing fall in prices get under way, there is little question but that the government would, as it never did in the past, seek to counteract it. But how, with what immediate success, and with what long-term results, certainly cannot be foretold.

Other Movements, 1830 to 1914. Besides the wartime inflations and deflations and the tendency of the price level to continue to decline after the first sharp postwar deflations, certain other movements of the price level are significant. Prices rose abruptly during the 1830's, primarily because bank notes, many of them of relatively little value, increased greatly during this dark period in the history of American banking, known as the era of *wildcat banking*. It should be remembered that the mid-1830's were also a period of high business activity. After the various states undertook more careful regulation of banking, the notes became more sound and were issued in smaller volume, and the decline in prices began anew until stopped by the increase in gold with the California discoveries in 1849. From the last of the forties until the Civil War inflation, prices remained at a fairly even level.

The downward movement after the Civil War ended abruptly about 1896, to be followed by almost twenty years of consistent—and, for peacetime, quite rapid—upward movement of prices. In the twenty-five years preceding 1896, an upward movement of prices had been fought for by the debtor class, particularly the farmers, first, in an attempt to have the greenback issue expanded and, then, in the free-silver movement under Bryan in the nineties. By a strange coincidence this increase in prices began just as Bryan was defeated in 1896, not because of that defeat, but because of developments which produced an upward movement of prices on a gold standard.

The period 1896 to 1914 was one in which the volume of mediums of exchange grew more rapidly than the expanding volume of goods and services to be exchanged. Two factors explain the relatively rapid growth in money and bank credit. First were new gold supplies. In the nineties the rich gold fields of the Klondike were developed, bringing a large increase in the monetary gold stock of the world. Of more lasting effect on the supply, however, was the introduction at about the same time of the cyanide process for refining gold ores, which made possible the profitable working of the extensive but low-grade ores of South Africa. In recent years these South African mines have supplied about 50 per cent of the annual gold output. It is the large-scale working of extensive known ore deposits which can be relied upon to bring a consistent increase in the world's stock of gold. Second, and more important, this was a period of the extension of commercial banking in this country and abroad, which made possible the building of a larger superstructure of bank deposits subject to check as a medium of exchange. Note issue came to be a less important function of the average bank, and the creation of deposit currency a more important function.

Price Level since 1920. The period of stability from 1921 to 1929, during which wholesale commodity prices remained about 50 per cent

and general prices about 70 per cent above the level existing before the First World War, seems to have been related in part at least to Federal reserve policy. After the sharp first postwar deflation of 1920 to 1921, the reserve banks assisted in preventing further deflation. On the other hand, when prices rose sharply in 1923 and threatened again to be headed for the 1920 level, the Federal reserve banks, using the technique explained in the preceding chapter, applied the brakes effectively. During the years following, until 1929, the reserve banks had only one major price-level problem, that of preventing the excess gold in our possession from leading to a period of inflation. This was done by what was known as gold *sterilization*, a process whereby the Federal reserve notes came to be almost gold certificates and whereby the surplus gold in the vaults of reserve banks was not used as a basis for large increases in bank credit. The member banks were discouraged from borrowing from the reserve banks and hence from using this excess gold as a basis for undue credit expansion.

The sharp decline after 1929 witnessed the collapse of the Federal reserve control. It indicated that this agency is more capable of preventing inflation than of preventing deflation. It indicated that no country can divorce itself from conditions abroad, particularly as long as that country keeps a constant weight of gold in its standard money. The sharp financial difficulties of this depression in the United States were related to the financial weakness of Europe, whose difficulties came to a head in England's departure from the gold standard in September, 1931. The following drain on our gold resources by Europe, the hoarding by our people, and the failure of numerous banks, all led to a sharp contraction of bank credit and a tremendous decline in velocity of circulation, which forced prices down rapidly.

Following our departure from the international gold standard in April, 1933, prices moved up rapidly for about three months and then followed a fairly stable course. A major rise of prices got under way in 1936, but this was followed by a sharp recession in the middle of 1937, with irregular movements during 1938, 1939, and 1940, after which came the great war and postwar increases.

THE EFFECTS OF VARIATIONS IN THE GENERAL PRICE LEVEL

The effects of price-level changes result from the fact that not all types of prices vary at the same rate and from changes in the real buying power of payments made by debtors to creditors. The latter effect is quite obvious, but the former needs extensive demonstration, because it is not so generally recognized.

Wholesale Prices and the Cost of Living. In general, the nearer a price series is to the consumer, the more sluggish will be its response to a

change in the general level of all prices; and the nearer it is to a raw material the more prompt and marked will be its variation.

The Bureau of Labor Statistics Consumers' Price Index, which includes the cost of rent, power, and services, which are not in the wholesale index illustrates this. This index demonstrates the comparative sluggishness of retail price. Between 1929 and 1932 it fell only 20 per cent as against

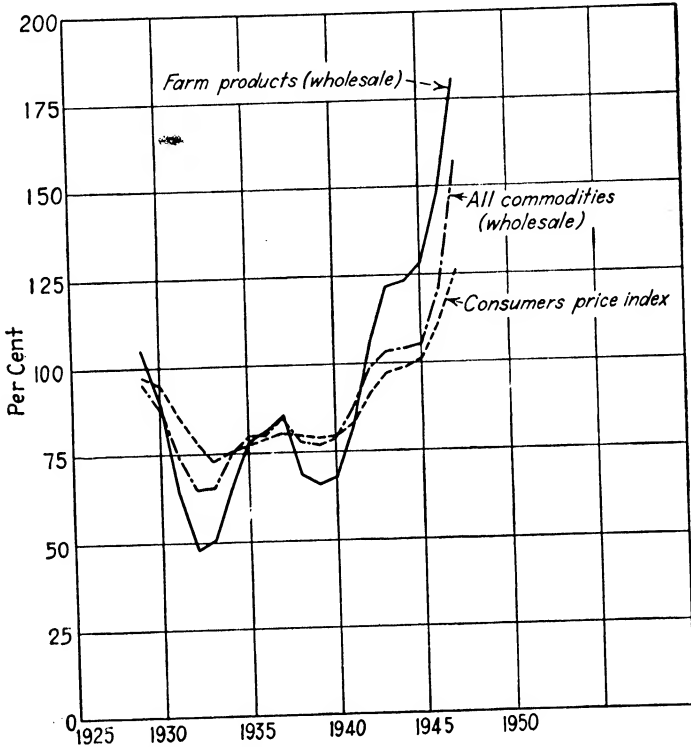


FIG. 26. Wholesale prices of all commodities and farm products and consumers' prices.* Indexes 1926 = 100.

* BLS Consumers' Price Index converted to 1926 base.

32 per cent for all wholesale prices and 54 per cent for wholesale prices of farm products. More recently, from August, 1939, just before the outbreak of the war, to August, 1947, the general retail price index went from 100 to 160 (1935 to 1939 = 100), the general wholesale index went from 75 to 153, an increase of about 100 per cent as compared to 60 per cent for the retail index.¹ In the same period wholesale prices of farm products tripled, representing an increase of 200 per cent.

¹ The retail index includes rent, which was under control in 1947, when other commodities were not, which is another reason for its slower movement. But as past experience demonstrates, it invariably moves more slowly than the other indexes.

Farm and Retail Prices of Food. Because farm prices move faster and relatively more violently than retail food prices, the farmer's share of the consumer's dollar rises in a period of falling prices and falls when prices are going down. As Fig. 27 shows, the farmer's share of the consumer's dollar hit a high of 51 per cent in 1918, during the high-price period of the First World War, and from then on with slight interruptions steadily declined to 32 per cent in 1932. Since that time it rose, again with slight interruptions, to an average of 53 per cent for 1946 and reached 55 per cent in September, 1947.

If the change in prices of farm products is due to peculiar conditions in the farming industry, such as bumper crops or a drought, while the general price level remains approximately constant, it is logical that retail prices should vary by a smaller percentage than the farm prices of the same commodities. The retail price includes not only the farm price but

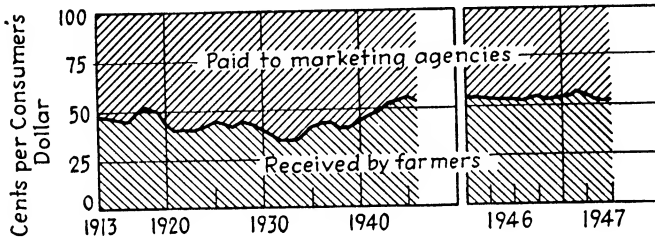


FIG. 27. The farmers' share of the consumer's dollar. Source: *Neg. 43745-X, BAE, USDA.*

also packing or processing, transporting, and merchandising costs, which do not necessarily change with farm prices under the conditions assumed here. Consequently, a 10 per cent decline in farm prices does not necessarily indicate that wholesale and retail prices of farm products should fall by the same percentage. A change of a certain number of cents or dollars in a price at the farm represents a much greater percentage than one of the same number of cents or dollars in the price at retail. When the farm price of a bushel of potatoes drops from \$2.00 to \$1.60, a 20 per cent decline has taken place. If this 40-cent decline is immediately reflected in the retail market so that potatoes drop from \$6.00 to \$5.60, only a 6.67 per cent decline has occurred.

Explanation of Price Lags. More important than the above are the instances of lags of retail prices behind farm and wholesale prices in connection with changes in the general price level. The basic reason is that farm prices respond much more rapidly to changes in economic conditions than do the prices of the goods and services involved in getting a farm product to the final consumer. There are a number of causes of this difference in response.

First, the movement of rents, interest rates, and, to a considerable extent, wages, which are costs involved in getting farm goods to market, are subject to *long-term contracts*, the terms of which can be rearranged (except in case of bankruptcy) only on expiration of the contract. Taxes, while not contractual, share the nature of contracted costs, because they are usually (especially property taxes) set for a year at a time, and in any case authorities are reluctant to change them. Likewise freight rates and other charges fixed by governmental bodies change very slowly. Second, as well as being often fixed by contract, the prices of labor (wages), of capital (interest), and of land and buildings (rent) tend to become customary ~~after~~ prices have been steady for some time and do not move till a general price-level change has been under way. Retailers are also very reluctant to change the customary prices of many articles, like cigarettes or chewing gum.

More important is the different organizational structure of agriculture and industry. When demand falls off an industrialist has the choice of reducing production or prices. Often, perhaps because of the presence of monopoly elements, he makes the former choice, holding prices steady and cutting his output. The farmer, with proportionately heavy fixed costs, making his plans a year ahead, or with crops already planted and livestock already bred, must wait for the harvest and feed his stock for slaughter. He cannot reduce his supply in the face of falling demand, as can the industrialist. Generally, farm production is not reduced till a succession of years of low prices brings bankruptcies and forces people entirely out of farming or to less intensive cultivation, and even then the effect is comparatively slight.

The rigidity of nonfarm costs works a double detriment on the farmer when prices are going down. This tends both to hold up the prices of the things farmers buy and at the same time to prevent a reduction in the margin between farm prices and retail prices, so that the farmer gets a smaller share of the consumer's dollar.

But what works to the disadvantage of the farmer when prices are falling works to his advantage when they are on the way up. Wages and the other costs mentioned are almost as sluggish in catching up with a rise in the general price level as they are with a fall. Monopolists, for their part, generally prefer stability in prices. Then industry, which normally operates at less than full capacity, can expand production rapidly under the spur of demand, whereas farm production, while it can expand more readily than it can contract, is not nearly so rapidly expansible as industrial production. In a situation where demand moves up but supply does not materially increase, prices go up. So now the farmer reaps a double advantage. His prices go up faster than the costs of distribution, so he gets a larger share of the consumer's dollar, and, because marketing

costs do not rise proportionately with farm prices, sales of his products can expand proportionately to total retail sales.

During the twenties and the thirties farmers were bitter because while their prices had fallen catastrophically, the prices of what they bought and of the elements entering into the cost of distributing their products, like industrial wages, freight rates, taxes, and interest, fell hardly at all. In the great price rise of the forties, however, the shoe was very much on the other foot, and farm prices rose much more than any other important price group, wages, or other costs. As a result, the farmers' protests were considerably muted.

Before closing this discussion of margins, one more point should be mentioned. That is the apparent tendency on the part of consumers to demand more highly processed, more elaborately packaged commodities—frozen chicken, all prepared for cooking, is an example—as well as a greater variety of goods. More elaborate preparation means greater processing cost, which means an increase in the more rigid elements entering into retail food prices. More variety requires a larger stock on the part of the merchant, necessitating a larger capital investment and thus a wider margin between retail and wholesale prices. To some extent, however, these added costs may be offset by economies in distribution, of which the supermarket method of retailing is an example.

Farm Prices and Farm Costs. A comparison of the changes in farm prices and farm costs logically follows the preceding analysis of the variation in particular types of prices, because many of the same elements of rigidity enter farm production costs as distribution costs. Farm-product prices are also more flexible than farm costs, and therefore farmers' profit margins widen on the upswing of prices and narrow on the downswing.

Figure 28 presents the variations in the prices of farm products sold and in the prices of the goods and services purchased for farm production and consumption. Farm prices rose more rapidly from 1916 to 1919 but did not reach so high a peak as did wages in 1920. Considering the fact that goods bought by farmers were as high as farm prices in 1920 and that farm wages were higher, we note that the profit margin of farmers was already being reduced. This process continued during the deflation of 1921, when farm prices fell almost 35 points below farm wages. From 1922 to 1930 farm prices remained 25 to 40 points below farm wages and from 10 to 25 points below the prices of goods farmers buy, as compared to the prewar situation. The continuation of this disadvantageous spread between farm prices and such commodities and services as are bought by farmers is explained in terms similar to those emphasized in the preceding section. Again in the deflation after 1929 the farmer suffered, though the drastic cut in farm wages alleviated the situation slightly. By the

spring of 1932 the buying power of farm products (index of farm prices divided by an index of the prices of commodities used in production and for family maintenance) had declined to 50 per cent of the 1910 to 1914 level. The farmer had to sell twice as much in physical volume in order to purchase as much as in 1913. Between 1933 and 1937 a sharp increase in farm prices occurred. The relatively slower increase of prices of commodities bought and of farm wages, plus the drastic reduction of farm

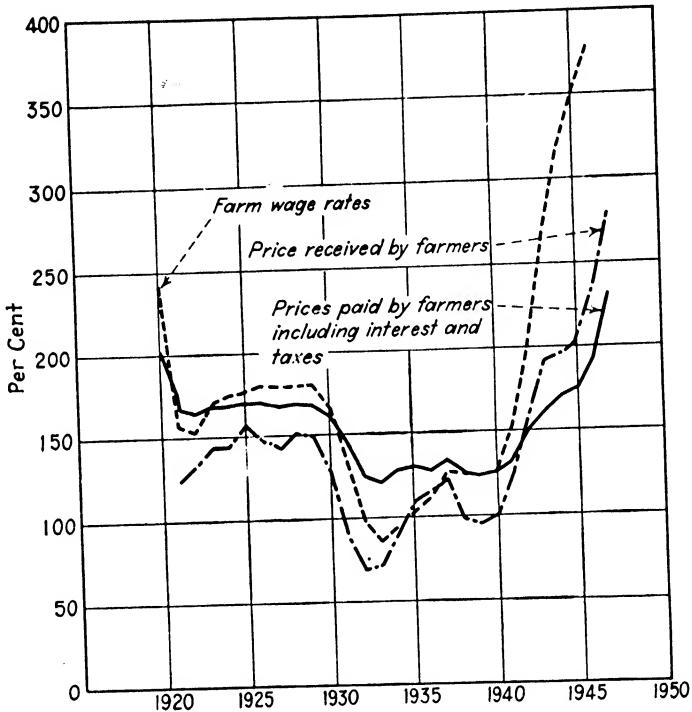


FIG. 28. Indexes of prices paid and received by farmers and farm wage rates 1920-1947 (1910-1914 = 100).

taxes, brought a price situation for farm products in 1937 which was nearly as favorable as in 1929. With the beginning of the Second World War, farmers really came into their own. Prices received by farmers went up much faster than prices paid, and although farm wages kept pace with farm prices, this did not have a material effect on farm income, because wages are comparatively a much less important cost factor in agriculture than in industry. By 1947 the buying power of farm products (on the 1910 to 1914 base) was about 120, which meant that for the sale of one physical unit of product, the farmer could buy more than

twice as much of other things as he could in 1932, when the index of his buying power (ratio of prices received to prices paid) stood at 55.

Two cautions should be noted in interpreting relative prices as indicators of agricultural welfare. First, there are occasions on which significant farm price changes are the result of crop yields. For instance, much of the higher farm prices of 1934 to 1937 was the result of the severe droughts of 1934 to 1936. With this qualification, changes of farm prices relative to prices of commodities and services is a good indicator of changes in the economic position of agriculture during a short period. The second caution is that over periods of a decade or more, changes in the efficiency of production may be so phenomenal that high prices for cost factors are more than offset by this efficiency.

Farmers as Debtors. Whether we operate on a high or low price level is immaterial, but the process of transition from one price level to another is painful to certain economic groups. A rising price level has disadvantages to those economic groups whose incomes are relatively fixed. With rising prices, wage earners, landlords, and creditors find that their incomes in money do not increase so rapidly as the cost of living rises, and hence their purchasing power is reduced. A creditor who lent a thousand dollars in 1940, when the cost of living was 100, and was paid back in 1947, when the cost of living was 159, received less than two-thirds as much purchasing power as he lent in 1940. At the same time the entrepreneurial class gained, for its selling prices rose more rapidly than its costs. Funds borrowed when the price level is low may be paid off in dollars of lower purchasing power. A much smaller amount of farm products had to be sold in 1947, when farm prices were 278 per cent of the 1910 to 1914 average, to retire a thousand-dollar mortgage than would have been necessary in 1940, when farm prices were just at 100.

The effect on specific economic groups is reversed when the price level declines. Wages and rents do not decline so rapidly as living costs, although in the case of labor this advantage may be offset by unemployment. Creditors gain, provided they can collect the loans they have made, for loans made in dollars of low buying power must be paid back in dollars of larger purchasing power. Entrepreneurs suffer, for selling prices drop more rapidly than costs. Debtors find the retirement of their debts unexpectedly difficult, for they must now sell more goods to obtain the same number of dollars. Even if farmers' costs had dropped proportionately with the prices of farm products a farmer, in making payments of interest and principal in 1931 on a farm mortgage contracted in 1926, was forced to sell almost twice as much volume, for farm prices fell from 142 per cent of the 1910 to 1914 average in 1926 to 82 per cent in 1931.

Through most of our history, farmers as a whole have been debtors and hence preferred a rising price level. The rural support of the post-Civil War greenback movement was not due to any widespread farmer support of any monetary theory but to the farmers' desire to stop the price decline of this deflation period. Similarly, farmers are no more wedded to free silver than they are to the gold standard. They rallied to the free-silver cause, not out of love for the silver miners, but to halt the continuous price-level decline of 1880 to 1896.

Farmers used the proceeds of their prosperity in the 1940's to pay off their mortgages and other debts. For several generations our farms have not been as relatively free of debt as they now are. Perhaps it is for this reason, and because they feared as severe a deflation of the 1945 to 1948 inflation as occurred in somewhat similar circumstances after the First World War, that many of them were willing to support government action to maintain a relatively stable price level.

PRICE-LEVEL STABILIZATION

The violent downward price movements of the thirties and the equally violent upward movements of the forties, with consequent large shifts in the status of the various economic groups in the community, have kept public attention focused on the question of price stabilization. If the entrepreneur, landowner, creditor, and laborer could conduct their daily lives and business transactions with the assurance that the purchasing power of the dollar would remain approximately constant, one of the greatest, if not the greatest, of economic uncertainties would be removed. There would be no basis for fear of loss due to a price-level shift, or in the other circumstance, a hope for a speculative gain. Moreover, if the general level of prices would remain constant, then overproduction or underproduction in a given commodity, or group of commodities, could be adjusted without the disruption of the whole price structure, accompanied by a sharp and prolonged period of business depression.

Some economists, in fact, are inclined to the belief that even better than an approximately stable price level would be one that rose gradually. A slowly rising price level would not greatly disadvantage those groups in the community with fixed incomes who are badly hurt by rapid inflation and it would at the same time encourage entrepreneurs to enter or expand their businesses.

Whichever the more desirable, a stable or a rising price level, it is generally agreed that the government should take active steps to bring it about. There are two general means by which it can affect the volume of money, which indeed tend to merge into one. They are (1) central-bank control of credit, and (2) a managed currency. It should be re-

membered, however, and it will be pointed out again, that monetary means alone are not sufficient to control price movements, which after all largely reflect the state of business activity. How business activity can be influenced is discussed in Chap. 28 on business cycles.

Central-bank Control of Credit. Central-bank control of credit as a means of price-level stabilization has been undertaken by the methods described in Chap. 13, but as noted there it has not been overly successful, either because the technique was not used properly or because the task was too big for banks alone to control, particularly when the central bank of each nation acted by itself. Bank control cannot be expected to be effective in controlling long-time trends of change in the price level due to changes in the world's supply of standard money relative to the volume of goods exchanged. Even in controlling short-time price-level movements during the business cycle, central banks face some difficult problems.

Bank control must be exercised through the control of bank credit, the growth of which can be restrained by high interest rates and even by the refusal of loans. On the other hand, in order to prevent undue deflation, or downward movement of prices, banks should be able to increase the volume of loans at will. However, even though banks offer inducements to borrowers in the form of low interest rates and show a willingness to loan on more uncertain projects, the final decision to borrow rests with the banks' clients. The latter in turn are influenced in their decision by the prospects of making profits by the use of borrowed funds; and, in a period of sharp and continued decline of prices, the lagging of costs behind selling prices undermines the profit outlook. Thus deflation, particularly if sharp, discourages borrowing and tends to make ineffective the attempts of banks to stop the deflation.

In minor price declines, as in that of 1924, businessmen do not become perturbed about the price-level decline and are willing to utilize the plentiful credit offered by banks. However, from 1931 to early 1933, at least, the continued and drastic downward movement of selling prices without a comparable reduction in cost discouraged borrowing. The reduction in bank deposits, as a result, further reduced buying and tended to lower prices, leading to a vicious circle between reduced borrowing and lower prices.

It seems to be easier for central banks to control upward price movements by raising reserve requirements and interest rates, and sopping up bank cash through sales of government securities, than to check a downward movement by the opposite policies. This points to the necessity of correlating banking with government fiscal policies in order to encourage business expansion.

Influence of the Treasury. As was indicated earlier in this chapter,

the government's spending, taxing, and borrowing policies have great influence on the price level and state of business, perhaps even more than the central-bank policy. For one thing the central banks have to go along with government fiscal policy. This was true during both of the periods preceding and during the Second World War, when the government was borrowing large sums of money. Regardless of what the Federal Reserve System may have wanted to do, it had to maintain an easy credit policy, standing ready to buy government bonds from banks, which meant it stood ready to expand their reserves. More important than any considerations of central-bank policy was the necessity of thus maintaining a good market for government bonds.

The Treasury, as the agency carrying out government fiscal policy, has another advantage. All the central bank can do is make credit available; it cannot compel businessmen to use it. By spending money on any sort of project, the government, however, can put money directly into circulation where it will be used. A synthesis of central-bank and Treasury control over money may be found in a managed-currency system.

Control of Inflation. While it is easier to control a price upswing than a downswing by purely monetary means, even in the former case these means will not suffice. The innumerable private discussions and public debates concerning methods of controlling the inflation of 1947 to 1948 brought this out clearly. The Federal Reserve System felt precluded, for the reasons given in Chap. 13, from selling government securities, but it raised rediscount rates and proposed temporary higher reserve requirements. If there was not full agreement, there was at least a wide degree of recognition that really to halt inflation, additional measures, like the maintenance of high tax rates to curb spending power, limitation of Federal expenditure (so that money taken in by the government should not immediately go out into the spending stream), and a leveling off of wages and profits would be necessary. Most important, in the terms of the Fisher equation, in order to match the increase of M and M' , an increase of production, that is, of T , would be required to keep prices steady.

This reemphasizes the interdependence of monetary measures with other economic policies, such as those relating to wages, profits, and investment, in any general program intended to influence the price level, because the price level is a function of business activity and the expenditure pattern of consumers, as well as of the supply of money. These broader matters will be considered in Chaps. 28 and 29, which discuss the business cycle.

Questions and Problems

1. Distinguish the price level and the price of an individual commodity (a) as to their meaning and (b) as to the general character of the factors causing each to vary.
2. Does the gold supply influence prices, and if so, how?
3. Describe and evaluate other influences on the general price level.
4. Summarize the price-level history of the United States, and point out what monetary, banking, production, or other changes seem to explain the price-level oscillations since 1860.
5. Why do price-level variations bring such major economic consequences? Give two reasons.
6. Point out the differing effects of a rising and of a falling price level on various economic classes.
7. What are some of the types of prices which lag during price-level changes? Explain the causes of these lags.
8. Point out the effects of price-level changes on agriculture with particular reference to the years since 1913. Why is agriculture affected in this manner?
9. What are the methods of central-bank control?
10. Would you favor a stationary or rising price level?

Suggested Readings

1. Lauchlin Currie, *The Supply and Control of Money* (1935), is an exposition of the monetary and banking developments since 1920, with conclusions which support the need for strong control of the quantity of bank credit.
2. M. Curtis and H. Townshend, *Modern Money* (1938), is an exposition of monetary principles which is based primarily on the ideas of J. M. Keynes.
3. L. A. Rufener, *Money and Banking in the United States* (1934), Chaps. IV and V, contains a lucid exposition and evaluation of the quantity theory and of the effects of price-level changes.
4. F. C. Mills, *The Structure of Postwar Prices* (1948), is a review of recent experience.
5. L. Tarshis, *Elements of Economics* (1947), presents the Keynesian theory of prices.

CHAPTER 15

LABOR AND WAGES

Our attention is now turned toward those forces governing the distribution of the national income. In this chapter, the returns to labor will receive special attention. In the next two, the returns to capital and to land will be considered. In Chap. 18 pure profit will be discussed further. This division of the social income among the factors of production is called *functional distribution*, in contrast to *personal distribution*, or the division among individuals and families. If we keep in mind the fact that an individual may represent more than one factor of production, we shall see that it is possible for these two aspects of income distribution to be quite different. A skilled laborer may obtain most of his income as wages, but he may have savings invested in a building and loan company, in life insurance, in the stock of his employer's business, or in something else, receiving interest and perhaps some profits as an entrepreneur. The typical farmer represents all four factors of production, and therefore the income available for the use of himself and his family may be part wage income, part interest earnings, part land rent, and perhaps even some pure profit.

DISTRIBUTION THEORY

The Productivity Theory. The most generally accepted theory of distribution is the productivity theory, a valid and valuable principle when properly understood and applied. This theory in brief holds that the return to any unit of *labor* or *capital* of a given grade at a given time will tend to equal the *marginal productivity* (or product) of that factor—that is, the product expected to be added by that grade of that factor in the least productive employments being newly undertaken. The return to *land* is a *surplus*, representing the excess returns expected from the better grades of land, above what is produced by labor and capital at the margin. *Pure profit* to the entrepreneur arises if there is any *residual* after the prior claims of all the other factors have been met. These statements will now be further explained.

Marginal Productivity and Wages. The productivity theory of distribution as applied to labor and to capital is known as the *marginal-productivity theory*. This raises two questions. The first is: How is the

marginal use of such a factor of production as labor determined? The answer to that question is that the marginal use is that point in the application of additional units of labor to existing amounts of land and capital at which the last units to be employed are employed. We learned from the law of diminishing returns that, if land and capital are fixed in quantity, labor is subject to diminishing returns; hence the marginal use is the least productive use. At this margin, competition among employers for the available labor will result in labor's being paid practically the full expected value of the product which it produces. If all the laborers of a certain kind in a certain region except a few are employed, and the labor of any one of those unemployed may be expected to add \$8 per day in value of product to the income of a score of employers, then competition among these employers for this labor will result in the workers being able to secure practically \$8 per day for their labor. At the margin, therefore, a wage prevails which equilibrates the demand for, and supply of, labor and gives to labor approximately the full value of its product. This further qualification, however, is necessary because employers advance wages to employees some time before they receive a return from the product. The expected future value of the product is *discounted*, to take care of interest on this advance.

Why All Wages Tend to Be Governed by Marginal Productivity.

The second question is: Why do all laborers of a given grade tend to receive only a wage equal to the value of the product added to the entrepreneur's gross income by the marginal laborer? The answer to that question is that labor is like other goods, in that what the marginal units sell for, other units will also sell for. There tends to be but one price for a given good in a given market at one time, and hired labor is as truly a good as other goods. A farmer may hire a dozen men who are all about equally effective as workmen. Perhaps he could afford to pay the first one \$12 per day, rather than go without his services. But ten men want work, and the tenth will add only about \$4 per day to the income of this farmer (or others in need of help). He will pay the tenth man only \$4, because that is all the man's product is worth. Each of the men whom this man may fully replace must then take \$4, if they are all to be employed.

Older Wage Theories. The marginal-productivity theory of wages has been widely accepted only for the last fifty or sixty years. Some of the older theories should, however, be mentioned because they are often referred to in economic literature and the student should understand these references. More important, current theory is in large part an outgrowth of older ideas.

The *subsistence theory*, best formulated by David Ricardo, held that wages would never rise above a level just high enough to enable workers

to sustain life. It was based on the Malthusian conception that population would always increase up to the limit allowed by the means of subsistence. Sometimes it was referred to as the *iron law of wages*, because it seemed to put a definite—and very low—upper limit on wages.

Ricardo, who understood his own theory better than most, knew however that if workers pushed their idea of a proper minimum level of living high enough, they might hold down their numbers and obtain higher wages. In other words, if subsistence is defined in sufficiently generous terms this theory takes on a more modern air, because it is unquestionable that one of the forces affecting wages is the determination of workers to attain certain standards of living by limiting their families to a size that they can maintain at those acceptable standards.

The *wages-fund* theory was popular in the middle of the nineteenth century. Its main tenet was that at any one time there is a fixed fund of capital out of which wages can be paid, and that therefore wages can go no higher than this fund permits. It is doubtful if this theory, which was ultimately abandoned by its chief expositor, John Stuart Mill, contributed anything to the understanding of economics except to call attention to the fact that wages are paid in advance of the sale of the product, out of capital. This capital fund, however, is by no means fixed, and in fact one of the factors determining its size is the demand for the products of labor.

Functional Distribution in the United States. Dr. W. I. King, an eminent student of the subject, estimated that between 1910 and 1928 the percentage of national income going for wages and salaries increased from 50 to about 58. The remainder, going to the factors of production other than labor, is designated as the return to property and entrepreneurship.

The Department of Commerce estimates for the years since 1929 would seem to demonstrate that the percentage going to labor has continued to increase. From 1929 to 1939 the percentage of total personal income going for wages and salaries went from 58.5 to 62.0. During the Second World War this percentage went much higher, up to 69.5 in 1944, presumably because other types of income were limited by price ceilings and excess profits taxes. In 1947, the wage and salary share fell back to 62.2 per cent. The apparent increase over the years in labor's share of national income is probably more apparent than real. It may represent the tendency for more labor to be hired than to be self-employed.

On the other hand, both Dr. King's and the Department of Commerce figures only include the labor income of those who are hired. A great part of the total income of farmers and owners of small businesses is labor income, so a truly accurate functional distribution would add the value

of this type of labor income to wages paid out. Calculated in this way, as much as 75 per cent of the national income could be considered as the return to labor.

Use of the Idea of Functional Distribution. In a strict sense, functional distribution is concerned with the share received by a factor of production in total, not per laborer or per acre of land. Our first concern in this and other chapters on the subject, however, will be with wage rates and interest rates and with rent and profits under particular conditions. The principles governing that part of the national income which goes to each of the factors of production are best analyzed by considering particular rates. After doing that, we can better consider the percentage distribution of the national income among the various factors and discuss the possible means by which the part going to any factor may be increased.

TYPES OF WAGES

Wages Are the Price of Labor. Wages are the remuneration for human labor. Labor is human effort, either physical or mental, undertaken for an economic motive. The inclusion of mental effort in the term *labor* indicates that much of managerial activity, particularly of a routine character, is labor and as such receives wages. This definition does not mean to infer that labor cannot be enjoyable, for much labor is enjoyable and would be more so if hours were shortened.

Cash and Imputed Wages. Wages as the price of labor may actually be paid out by the entrepreneur for hired persons or may be imputed wages. By an imputed wage, we mean that part of the entrepreneur's income which is assignable to his own labor or that of a member of his own family who is not actually paid a money wage. Imputed wages are particularly important in agriculture, because, of the 10,157,000 people employed in agriculture in 1947, only about 2,227,000 or 22 per cent, were hired. The rate assigned to each kind of work performed by the farmer or members of the farm family should be equal to the price prevailing for that kind of labor in the general labor market, allowance being made for the fact that the possible earnings of some members of the family might not be very large if removed from the family farm. With allowances for such a situation, the problem becomes one of determining the forces which fix the wages of hired labor.

Time and Piece Rates. Cash wages are of two types: time rates and piece rates. Most farm labor is paid on a time basis, such as the hour, day, or month, but for certain work, particularly in the harvesting of some crops, labor is hired by the piece. Both time and piece rates are used extensively in urban industry. Piece rates tend to be fixed at such

a figure that the average laborer will earn in a day an amount equal to the general daily wage paid on a time basis. Fundamentally, the forces determining piece rates and time wages are the same.

Wages as a Cost and as Income. Wages, the price of labor, occupy a dual role, that of a cost of production and of income to the laborer. The entrepreneur is interested in wages as a cost of production and therefore as one factor determining the possible profit to be received from the enterprise. As a result, the entrepreneur is interested in the wage cost per unit of product more than in wages paid to each laborer.

The farmer's concern with wages, however, cannot cease with the cost-of-production viewpoint, for the average American farmer is not only an entrepreneur, a capitalist, and a landowner, but also a laborer. Part of his annual income above cash outgo and depreciation is a return to himself and his family as laborers comparable to the wages of other rural labor. Thus the interest of every farmer is bound up intimately with the welfare of rural labor.

Another aspect of wages that may appear to be only of theoretical interest to the individual employer but is actually vital for all entrepreneurs as a class is that consumers' demand is very largely dependent on the total earnings of labor. This is especially true of the demand for immediate consumption goods, of which food is the most important example, because the proportion of wage income spent on such goods is higher than the proportion of property and entrepreneurial income so spent. A large urban payroll is distinctly in the farmer's interest. The existence of such a payroll requires not only that wage rates should be high, but that employment be stabilized at a high level.

Real Wages as Income. Money wage rates often are not an accurate basis upon which to compare the income of labor from one period of time to another, or of laborers in different localities at the same time. First, wages in money must be interpreted in the light of the variations in the purchasing power of money. Comparison of wages between different times—and between different places as well—is possible only after these wages have been adjusted for differences in the cost of living. This fact is well illustrated in the case of wages before, during, and after the inflations of 1917 to 1920, and of 1945 to 1948, periods during which the purchasing power of money changed rapidly. In 1948 the hourly earnings of factory workers had risen to twice the 1939 average, but the cost of living had risen 60 per cent so that their gains were actually about 40 per cent of what they appeared to be. Wages when adjusted for purchasing power of money, or considered from the point of view of what money wages will buy, are called *real wages*. The reader should be careful to determine from the context whenever the term *wages* is used without qualification, whether the reference is to money wages or to real wages.

In a comparison of the real wages of rural and urban labor, the differences in the cost of living between city and country and the farm laborer's receipts in kind should be considered. Frequently single laborers are given board, room, and laundry in addition to cash wages, particularly on the farms of the Northern and Western states. Often, married laborers are given the use of a cottage and certain farm produce in addition. Even the growing number of laborers who live in small towns and commute to their work find that such important living expenses as rent are cheaper than in the large cities.

A second consideration that must be borne in mind when one interprets wages is that money wages, whether time or piece rates, should be adjusted to allow for unemployment in order to measure the real-wage income of labor. High daily or piece rates do not indicate a high degree of economic welfare for labor if such wages are received only in the busy seasons of the year, the labor being necessarily unemployed the remainder of the year. Also, during a business depression, unemployment reduces labor income, even though nominal wage rates decline but little. For instance, though the wage rate for New York factory workers fell only 26 per cent from 1929 to June, 1932, the employment of factory workers in the country as a whole during that time declined 50 per cent. Laborers in some occupations—such as harvesting and processing farm products, lumbering, and coal mining—face unemployment in certain seasons of the year. Sometimes, by entering other employments during slack seasons, these laborers are able to augment their income. But, in general, the relatively high wage rates which tend to exist in seasonal occupations give a misleading impression of the income of the laborers engaged in them.

Long-time Trend of Real Wages. A question frequently asked is whether the great improvements in production which were inaugurated by the Industrial Revolution have been to any great degree reflected in increased real wages. Some light is thrown on this by a study by A. H. Hansen which shows that real wages in the United States increased to $2\frac{1}{2}$ times their previous level between 1820 and 1890.¹ From that date until 1920 money wages rose rapidly, but the cost of living also increased at a rapid rate. That there was little increase in real wages during this period is the conclusion also reached by Paul H. Douglas, as the result of an extensive study published as *Real Wages in the United States, 1890-1926*. According to Douglas, both weekly wage earnings in all industry and the cost of living in this country practically tripled between 1890 and 1920, and, as a result, the purchasing power of weekly wages (real wages) was substantially the same throughout the period. There was a gain, however, for labor, because the average hours worked per

¹ "Factors Affecting Real Wages," *American Economic Review*, March, 1925, p. 32.

week declined from 58.4 in 1890 to 50.4 in 1920. The same weekly real wage was received for eight hours less work per week.

After 1920 weekly real wages increased. According to Douglas, they were 20 per cent higher in 1926 than in 1920. According to Warren and Pearson, the increase was greater than 20 per cent, and real wages were approximately 25 per cent higher in 1931 than in 1926.

Since that time real wages have apparently continued to increase. In 1947 the average weekly pay of workers in manufacturing was \$49.25 and the cost-of-living index 159, while in 1931 the average weekly earnings had been \$20.87 and the index 109. The rise in wages was much greater than the rise in living cost, and nonagricultural employment was 50 million as against only 32 million in 1931.

Wage Cost of Production. Although entrepreneurs collectively are interested in the real-wage income of labor as indicative of the ability of workers to buy the products of farms and factories, individual employers are more interested in the wage cost per unit of product. Wage rates by hour, day, week, or month do not always indicate wage cost. The latter depends in part on the efficiency of the laborer. Hence the farsighted employer does not compare laborers applying for work solely on the basis of the wage rate which must be paid but rather compares this rate with the probable output. Furthermore, the general variations of wage rates due to changes in business prosperity do not always indicate comparable variations in wage costs. When jobs are plentiful, output per laborer often declines, because laborers do not exert themselves so much. But when the threat of unemployment is present, labor efficiency, as well as management efficiency, increases.

THE SUPPLY OF LABOR

The Natural Increase of Population. The supply of labor in general depends upon the population, the age distribution of that population, and the proportion of women gainfully employed. Other factors are numbers of hours worked per week, intensity of work, age of retirement, number of youths in school, number of unemployable poor and idle rich, and number of holidays. Population growth is due either to natural increase (excess of births over deaths) or to net immigration. The earliest comprehensive theory advanced to explain the growth of population by natural increase was that of Malthus, already explained. At present, so far as the more advanced areas of the world are concerned, the rate of growth of population can be better explained by considering the effect of modern methods of life and modern ideals on the bearing and rearing of large families.

The standard of living or level of expenditure which people would like to have is not a constant but a changing standard, and hence, as the

population growth in all classes comes to be guided by the standard of living, population growth will respond differently to changes in income.

Immigration. In any particular region or country the total number of workers may be affected by emigration and immigration. The population of the United States (aside from the Indians) is composed of immigrants and the descendants of immigrants. That immigration has been an important factor in population growth in the United States is shown by the fact that of the 21 per cent increase in population in this country from 1900 to 1910, 11.51 per cent was contributed by immigration and only 9.45 per cent by birth within the country. During the decade which included the First World War, 1911 to 1920, the increase in total population was 15 per cent, of which only 4.5 per cent was contributed by immigration and 10.5 per cent by the birth rate. Further evidence of the tremendous volume of immigration into the United States is presented in Table 32. The decade 1901 to 1910 saw 8,795,386 people immigrate to this country, far surpassing any other decade.

TABLE 32. IMMIGRATION INTO THE UNITED STATES FROM 1870 TO 1947

Ten-year Periods	Number	Five-year Periods	Number
1871-1880	2,812,191	1920-1924	2,774,600
1881-1890	5,246,613	1925-1929	1,520,910
1891-1900	3,687,564	1930-1934	426,953
1901-1910	8,795,386	1935-1939	243,122
1911-1920	5,735,811	1940-1944	203,587
		1945	38,119
		1946	108,721
		1947	147,292
Five-year Periods	Number		
1910-1914	5,174,701		
1915-1919	1,172,679		

Immigration Policy. Prior to 1921, the United States made no attempt to restrict the number of immigrants in general. Orientals were excluded by the Chinese Exclusion Law of 1882 and the Gentlemen's Agreement with Japan. Laws had also been passed to exclude defectives, criminals, and those liable to become dependent on charity.

Beginning with the Immigration Restriction Law of 1921, a number of limitation laws were passed during the 1920's which had the final result that immigration from non-American countries is held to a maximum of about 154,000 per year. Since 1929, when the quotas now in force were established, immigration from such countries has actually been considerably below the permitted figure because during the depression people

were not attracted to this country. In fact there was actually net emigration in 1932, and during the war immigration from outside this hemisphere was in effect completely cut off for security reasons and lack of transport.

Immigrants from the Western Hemisphere are not on the quota plan, but may enter the United States in unrestricted number, with the exceptions mentioned above. An increasing number of Mexicans have entered to become agricultural laborers in the Southwestern states, forming a large part of the supply of cheap labor.

Economic Effects of Immigration. Whether immigration is economically beneficial or ~~not~~ to a country depends on the particular circumstances. No one would advocate general immigration into India, though doubtless that country would derive great advantage if a few specialists in technical and other lines would move there. On the other hand, France, with a small population relative to resources, with its rate of national increase insufficient to maintain its population, and with a desperate need to expand production, is quite properly taking positive steps to encourage immigration. The United States during much of the nineteenth century was in the position of a farmer who has too much land to cultivate—to put it technically, it was in the stage of increasing returns. This country, therefore, followed the policy of encouraging immigration.

While it is widely believed that immigration reduces wages, this is hardly the case. Though immigration does materially increase the number of laborers, it also increases the demand for products and, therefore, the demand for labor. Accordingly, immigrants add to the demand for labor as well as to the supply of labor. It is only insofar as additional labor comes into the country in such numbers as to make their absorption difficult, or leads to diminishing additional returns from their employment on our resources, that wages in general should tend to decline. Second, immigration increases the supply of labor primarily in the unskilled employments. Though it probably tends to reduce wages in these occupations in relation to wages in other occupations, it also tends to raise the wage level of the native-born population. The latter tend more and more to enter the skilled trades, clerical jobs, and the professions. Though after one or two generations the descendants of immigrants also tend to move upward into the higher paid occupations, some authorities have concluded that immigrants have, on the whole, pushed the descendants of the older stock up the financial ladder.

While immigration restrictions are preventing migrants from Europe coming in to fill unskilled jobs, there has in recent years been a large influx from Puerto Rico (not immigration technically, because Puerto Rico is part of the United States) and Mexico which performs this func-

tion. With full employment in this country, our economy might be advantaged by a larger immigration than is now permitted, though it is hardly to be expected that we could absorb as many as we did in the days before the First World War.

The Labor Force. The total labor supply, or, as it is now more often referred to, the labor force (which includes those seeking work as well as those working), is not simply a function of the total population. The size of the labor supply depends on the sex and age distribution, school-leaving age, retirement provisions, and specific regulations like the Wage and Hours Act, which has gone far to eliminate the employment of children in industry. The size of the labor force also depends on the demand. This was dramatically illustrated during the Second World War, when millions of women and retired persons, as well as teen-agers, were attracted by high pay and patriotism into war industries. An interesting aftermath of the war is that "about a half million fewer young men age 20 to 34 were in the labor force than might have been expected . . . largely due to . . . school enrollment . . . under . . . the GI Bill of Rights."²

The chief shifts in the labor force over the past few years have been the reduction of the proportion of younger persons and the increase in the proportion of women. The first has been due to several factors: legislation, as mentioned; a general tendency for education to be continued for a longer period of time, as well as for a higher proportion of the population to obtain higher education; and, most important, a shift in the age distribution of the population. The declining birth rate of the prewar years caused a decline in the proportion of young people. In 1920, 32 per cent of the total population was under fourteen (generally used as a lower limit in estimating the labor force), while in 1940 this percentage was only 25.

The movement of women from the household into the labor force has been due to the "growing concentration of population in urban centers, the declining trend in family size, the shifts from heavy manual labor to the use of machines, and the widespread introduction of labor-saving household devices."³ The proportion of women in the labor force was 22 per cent in 1930, 22.2 per cent in 1940, and 28 per cent in December, 1946. As far as American agriculture is concerned, women are not an important constituent of the labor force, accounting for less than 20 per cent of the total.

A trend of minor importance before the war was the declining pro-

² *Monthly Labor Review*, December, 1947, p. 643. At the same time an abnormal number of young persons who had been attracted into the labor force during the war stayed in.

³ *Ibid.*, p. 639.

portion of elderly people in the labor force because of the increasing mechanization of industry, with its emphasis on speed and lesser need for skill, the declining importance of agricultural employment, which offers "more scope than urban industry for the older worker," as well as public and private old-age pension plans. In the long run, however, the tendency of the average age of our population to be higher (due to the declining birth rate and better medical care) will bring about a significant upward shift in the age composition of the labor force. In 1940, 19 per cent of the working age population (fourteen years and older) were over fifty-five years old. In the year 2000 it is estimated that the corresponding percentage will be 31.⁴

The most striking thing revealed by the war experience was the flexibility of the labor force in response to pronounced changes in demand. There are apparently "many persons who can readily be attracted into the labor market when job openings expand, and who are likely to drop out when conditions become less favorable."⁵

The supply of labor, like the supply of other commodities, responds to changes in demand as well as to changes in the population and its composition. How it has changed in recent years is shown by Table 33.

The supply of labor is only one of the influences on wages. The other important influences are the demand, which depends on the state of business, and the productivity of labor, as well as legal and other arrangements affecting the division of the social income among the factors of production. These will be considered in connection with the marginal-productivity theory of wages.

WAGE GROUPS

Noncompeting Groups. Although many wage theories have been presented to explain the general level of wages, economists, especially since the days of the publication of J. M. Cairnes' *Leading Principles of Political Economy* in 1874, have recognized that labor is not a homogeneous commodity, and hence that there is no general wage rate for all labor. Instead there is a series of group wage rates, the whole number of laborers being divided into quite clearly marked groups. Movement of laborers from one occupation to another within the same group is frequent, but movement from one group to another is not frequent in Western Europe and is becoming less so in America as our society becomes older. Hence these groups are spoken of as *noncompeting groups*.

⁴ *Ibid.*, p. 644.

⁵ *Ibid.*, p. 643. In April, 1945, there were 8,000,000 more people in the labor force than would normally have been expected. By April, 1947, this excess had been reduced to only 1,620,000 (p. 641).

TABLE 33. ESTIMATED TOTAL LABOR FORCE, CLASSIFIED BY EMPLOYMENT STATUS,
BY YEARS, 1929-1947

(Annual averages, in millions)

Year	Total labor force	Armed forces	Civilian labor force				
			Total	Employed		Unemployed	
				Total	Agricultural		Non-agricultural
1929	49.4	0.3	49.2	47.6	10.4	37.2	1.6
1930	50.1	0.3	49.8	45.5	10.3	35.1	4.3
1931	50.7	0.3	50.4	42.4	10.3	32.2	8.0
1932	51.2	0.2	51.0	39.0	10.2	28.8	12.0
1933	51.8	0.2	51.6	38.8	10.1	28.7	12.8
1934	52.5	0.3	52.2	40.9	9.9	31.0	11.3
1935	53.1	0.3	52.9	42.3	10.1	32.2	10.6
1936	53.7	0.3	53.4	44.4	10.0	34.4	9.0
1937	54.3	0.3	54.0	46.3	9.8	36.5	7.7
1938	55.0	0.3	54.6	44.2	9.7	34.6	10.4
1939	55.6	0.4	55.2	45.8	9.6	36.2	9.5
1940	56.2	0.5	55.6	47.5	9.5	38.0	8.1
1941	57.5	1.6	55.9	50.4	9.1	41.2	5.6
1942	60.4	4.0	56.4	53.8	9.2	44.5	2.7
1943	64.6	9.0	55.5	54.5	9.1	45.4	1.1
1944	66.0	11.4	54.6	54.0	9.0	45.0	0.7
1945	65.3	11.4	53.9	52.8	8.6	44.2	1.0
1946	61.0	3.5	57.5	55.2	8.3	46.9	2.3
1947	61.8	1.6	60.2	58.0	8.3	49.8	2.1

The following major groups are usually identified:

1. Higher managerial group.
2. Professional and small business group.
3. Skilled-labor group.
4. "White-collar" group, such as clerks.
5. Unskilled-labor group.

Farm laborers are for the most part in the last class, although, with the increased application of machinery and scientific methods of agriculture, farm labor which is skilled along particular lines is becoming more important.

The typical wage per worker varies among the various groups in the order of the enumeration of groups presented in the previous paragraph. The wage of the managerial group is highest, and that of the unskilled

workers is lowest. This differentiation in wages among the various groups is due to a greater number of workers relative to the demand situation in the lower wage groups. Why is there such an undersupply of labor in the higher wage groups so that they receive higher wages?

The Choice of Occupation. The number of men engaged in any particular occupation—or in any series of occupations which together form a wage group—is partly determined by the choice of occupation made by laborers themselves or by their parents. This choice depends on a variety of factors. First, the sacrifice of effort and money necessary to acquire the skill of an artisan or to train for a profession deters many workers from entering the higher wage groups. Frequently the necessity of assisting in providing for his relatives prevents a young man from accepting the low income of a training period. Second, many young people enter those occupations which carry little opportunity for advancement because they are lured by the relatively higher beginning wages. Among some young people, the desire to improve their economic status does not seem sufficiently strong to urge them to undergo the sacrifices of a training period. Third, entrance into certain occupations is limited, as by unions desiring to keep down the labor supply and thus maintain high wages. This is often accomplished by strictly limiting the number of apprentices or new workers who can join the union, as in certain of the building trades, and then by obtaining an agreement with employers to employ union labor only. Likewise, insiders occasionally close higher positions to anyone lacking influential connections. Fourth, racial prejudice, particularly against Negroes, closes off skilled or professional employment to whole classes of the population. Lastly, a certain number of people simply lack the native ability to engage in highly skilled or professional work. As a result of the influence of all the above-enumerated factors on the choice of an occupation, workers enter the unskilled occupations in relatively larger numbers than other employments.

With persons other than unskilled workers, influences other than the wages received have relatively more effect on the choice of occupation. Certain types of work carry with them sufficient social prestige that young people will enter this work even if the probable wage is not large. This factor explains to some extent the "white-collar" group, whose work usually requires some training, yet whose wage in many cases is not much higher than that of unskilled labor. The environment of the work influences men to choose one occupation rather than another, the evaluation of specific environmental factors varying from person to person. One man may be willing to accept a lower real wage if he can live in the exciting city environment. Another may be willing to make a monetary sacrifice in order to work, live, and rear his family in a rural region. A dangerous occupation usually attracts fewer men than does

one which is relatively safe, though the added risk does not deter so many as might be supposed. The enjoyable character of the work itself is a significant factor in directing people of particular interests into particular work, especially when the choice is among the various professions.

The opportunity to wield power and the chance of obtaining public acclaim influence many people, as in the choice of government positions, where the salaries for top executives are much below the comparable level in industry. A disinclination to plunge into the hurly-burly of business life inclines others to quieter, if less remunerative, occupations like teaching.

The differences in the availability of different jobs and the differences in persons' training and temperament have led to the creation of a hierarchy of wage groups, each being on a different wage level. Any influence which upsets the usual wage differential between the groups will tend to be remedied by the intergroup movement of labor if such movement is possible. Any factor which facilitates the acquisition of manual skill or of professional training will tend to reduce the wage differential between the lower groups and the higher groups, for large numbers will then train themselves for higher wage positions, leaving fewer workers for lower wage work.

THE MARGINAL-PRODUCTIVITY THEORY

The problem now at hand is to analyze the determination of wages in any occupation within the wage group. Since there exists a relationship between the value of a laborer's output and his wages, it results that, except where custom, union rules, or other similar factors interfere, the able-bodied, alert man will tend to receive higher wages than his less efficient fellow. This is especially true in agriculture, where conditions are most highly competitive. In such cases there will tend to be as many wage rates as there are occupations and levels of personal efficiency within an occupation. In many skilled and some unskilled occupations, however, the standard-wage policy prevails, and hence all employed in a certain occupation on a given job—or frequently in the whole region—will be paid the same wage rate.

Where there is relatively free competition among employers and among laborers, the tendency is for wages as the price paid for labor to be fixed by supply and demand, as are other competitive prices—wages tending to equal marginal productivity. The demand and supply of labor, however, have many characteristics different from the demand and supply of finished consumable goods, and the labor market is not freely competitive.

The Demand for Labor. The demand for labor is in large part a derived demand, since labor is employed to produce goods which con-

sumers desire. In the wages that he can pay, the producer is limited by the price which he can obtain for the products of labor. Farmers and other entrepreneurs employ laborers because they expect that the products of labor will be bought at a price sufficient to pay the wages and other costs, with at least the hope of profit for the enterpriser.

Part of the demand for labor is direct—a demand for the services of the professional man, the household worker, the gardener, and so on. As in the case of the consumer demand for any commodity, the number of laborers who will be hired for direct service and the wages paid will depend on the purchasing power of the consumers and the intensity of their desire for the services of labor. But, since the direct demand for most types of labor is limited, we shall study especially the derived demand for labor. In fact, the three groups of laborers whose services are most likely to be demanded directly—*viz.*, public service not elsewhere specified, professional services, and domestic and personal service—composed in 1940 less than 20 per cent of the gainfully employed.

The Demand Curve. The fact that the demand curve of employers for a particular kind of labor slopes downward from left to right represents that more labor will be hired at low than at high wages; but the reasons for this situation are more complex than those applicable to the consumers' demand curves for finished products. Instead of the major motivating factor behind demand being utility or the want-satisfying power of a good, the demand for labor as a derived demand is determined primarily by the amount that labor can add to the income of employers. But with all other conditions outside of that industry remaining the same, employers in a given industry cannot afford to pay as high wages for additional employees as for fewer employees. The reason is primarily that more employees and larger output require that more goods must be sold, and that, because of the downward-sloping demand curve for goods of a particular kind, such additional goods can be sold only at lower prices. Accordingly, additional laborers can be employed profitably lower only at lower wages.

In addition, in industries which operate under increasing costs, as is in general true of agriculture, the application of additional units of labor does not add proportionately to the output. Capital at a given time is fixed, and land also is fixed unless poorer land is used. To farm more extensively involves bringing into use less desirable land—that is, pushing out the extensive margin—with diminished productivity per laborer at the margin. To farm the same land more intensively brings into effect diminishing returns, and, consequently, smaller returns at the intensive margin. The diminished output added by each additional laborer may be summarized in the term *diminishing productivity* of labor—that is, fewer units of product added to the gross income of the

entrepreneur with each additional laborer and therefore less ability to pay wages for added workers. The above analysis explains fundamentally why higher wages prevail in the United States than in such a country as India or China.

Man and Machines. A third factor which at times operates to influence the contour of the demand curve for labor in a particular employment is the substitution of men for machines or land, or machines and land for men, according to the relative cost of land and capital as opposed to the wages of labor in the industry under consideration. This is the principle of variable proportions of the factors, explained in Chap. 5. If the wage rates in a particular industry are high in relation to the cost of using the machines adapted for use in this industry, employers will tend to use more machines in comparison with the number of men. An example comes from railroad transportation industry. Whereas from 1923 to 1931 railroad freight rates were only 145 per cent of the 1914 level as compared with 240 per cent for railroad wages, the railroads, partly in order to avoid these wage costs, introduced heavier rails, larger cars, longer trains, and more powerful locomotives, operated by the same-sized crews, for the purpose of economizing on labor. On the other hand, if the labor is cheap in relation to machine costs or land costs, it will be used more plentifully at these lower wages. European farmers have always economized in the area of land used and have employed large amounts of labor, their abundant and relatively cheaper factor. In contrast, in America labor has always been a relatively scarce factor of production, with land being relatively abundant, and hence labor has been scattered over much land, so that the product per laborer has been large.

The reader, however, should be careful to notice that the use of machinery is not at all inconsistent with very high wages. In fact the most highly mechanized industries, like the automobile industry, pay high wages, because the great productivity necessary in order to pay high wages must be based on machine methods of production. It is only in those cases in which a process, such as many farm activities, can be performed almost equally well by few machines and many laborers, as opposed to many machines and few laborers, that the change from one general technique of production to the other will follow changes in the relative costs of labor and of machines. When some advanced machine is developed, such as the modern machines for spinning and weaving, it will be introduced in spite of very low wages, as is witnessed by the use of textile machinery in factories in India and China. The consequent increased output per man will permanently raise wages; unless, as Malthus explained, the higher wages lead to a rapid increase in population. In the United States the use of machine methods has raised wages.

The Supply and Price of a Particular Kind of Labor. The supply of a certain type of labor is likely to be relatively inelastic at any particular time and place, which is why the supply curve in the accompanying Fig. 29 has been drawn steep.⁶ The demand, let us say for automobile work, in a particular region, is shown by the curve *DD*, which represents the marginal productivity of man-days of such work. Since at a wage of \$6 a day the marginal productivity equals the supply, that will be the wage for one man-day of work in the automobile factory.

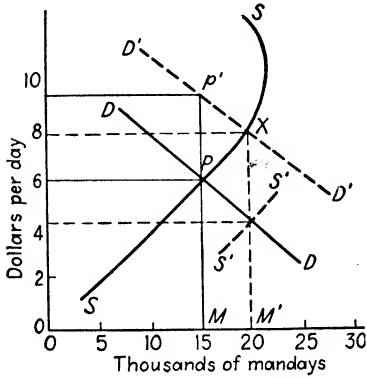


FIG. 29. Wages under competitive conditions (assumed case).

added to the employer's income by the use of an added man-day of work just equals the wages which must be paid in order to get this work done. Applying the idea of the margin to Fig. 29, we see that, as more labor is hired, its productivity in terms of increase of the employers' incomes becomes less as depicted by the descending curve *DD*. The point of marginal productivity depends on the amount of labor available, if competition is free. Thus, if there are only 12,000 man-days of work available, about \$7.00 can be paid for the marginal man-day when the demand is represented by *DD*, though in terms of the situation represented by the diagram, there would not be equilibrium at this wage. Marginal product would exceed the wage necessary to induce more labor into the market, so more men would be hired, reducing the marginal product till it equaled the supply forthcoming at \$6 per day. If, on the other hand, the supply curve were lowered (as shown by *S'S'*) because of an increase in the availability of workers, 20,000 man-days would be demanded at \$4 a day, the marginal productivity of that supply of labor.

Marginal Productivity. The demand for and supply of a given type of labor tend to come into equilibrium at the point of marginal productivity in a manner similar to the tendency for the supply and the demand for commodities to balance. The point of marginal productivity has been reached when the amount

added to the employer's income by the use of an added man-day of work just equals the wages which must be paid in order to get this work done. Applying the idea of the margin to Fig. 29, we see that, as more labor is hired, its productivity in terms of increase of the employers' incomes becomes less as depicted by the descending curve *DD*. The point of marginal productivity depends on the amount of labor available, if competition is free. Thus, if there are only 12,000 man-days of work available, about \$7.00 can be paid for the marginal man-day when the demand is represented by *DD*, though in terms of the situation represented by the diagram, there would not be equilibrium at this wage. Marginal product would exceed the wage necessary to induce more labor into the market, so more men would be hired, reducing the marginal product till it equaled the supply forthcoming at \$6 per day. If, on the other hand, the supply curve were lowered (as shown by *S'S'*) because of an increase in the availability of workers, 20,000 man-days would be demanded at \$4 a day, the marginal productivity of that supply of labor.

⁶ The backward slope of the upper part of the curve is probably of more theoretical than practical interest. It represents what would happen if wages were raised very high, say to \$5 or \$10 an hour. In that case a great many people would prefer to work less because they could make an adequate living in fewer hours. This would reduce the labor supply. It may be that situations like this were actually encountered during the Second World War, accounting for some absenteeism. Wages were high, living costs were kept down by the Office of Price Administration, and there were few things on which money could be spent.

Should the demand suddenly expand to $D'D'$ the point of equilibrium would be raised to \$8 at X and 20,000 man-days would be worked.

Illustrations of the Effect of Marginal Productivity. That individual employers or employers collectively tend to balance wage cost and labor product and to use labor to the margin has already been emphasized in Chap. 5 as well as in the present discussion; yet a few illustrations may be added. When the price of farm products rose from 1915 to 1919, farmers hired more labor, even at rising wage rates, because their selling prices were rising more rapidly. In other words, the value of the product of labor engaged in agriculture was rising. During the deflation of 1930 to 1932, the reverse took place, so that, even though the farm wages fell below the prewar point, farm prices fell even further, and farmers hired less labor.

Wages under Changing Demand. Because of the steepness of the labor-supply curve for a particular industry, the first response to a sudden increase in demand will probably be a sharp increase in wages, rather than in the supply of labor. To return to our illustration: the first effect of the change of demand to $D'D'$ would be to raise wages to P at \$9.50 a day. But since this is not an equilibrium condition, in the course of time the supply of labor would increase and the wage tend toward the equilibrium level of \$8. The promptness with which the additional laborers will be available depends on the mobility of labor, both between occupations and between localities. At first, Jack-of-all-trade people, somewhat skilled at several occupations, will devote themselves solely to that work for which demand has increased. Young people in large numbers will enter this work. People skilled in this activity will in some cases move to the locality of higher wages; the attractive force of high wages in causing people to move was dramatically demonstrated during the Second World War, when millions of people left rural areas to work in munitions and other industries.

An actual example of the way in which numbers in particular occupations change as the result of wage changes is illustrated in the case of women stenographers and teachers from 1918 on. From 1918 to 1920 there existed a distinct shortage of stenographers, and their wages were relatively high. At the same time wages of teachers had not risen comparably to the price-level rise which had occurred after 1915. Young women trained in larger numbers as stenographers, and fewer, relatively, prepared for teaching. This fact, among others, accounts for the reverse trend of wages in the years from 1922 to 1929—upward for teachers and downward, relatively, for stenographers. After 1929 there came to be a surplus of teachers, partly because of declining demand; then salaries declined, and enrollment in teacher-training courses decreased.

During and after the Second World War there was again a great

shortage of teachers, partly because comparatively few people had entered the profession for the reasons just outlined, partly because as is usual in the case of government employees, their salaries had not been raised so quickly as those of employees in private business. At the same time the number of school children had begun to increase because of the higher birth rate of the first war years. The result was that most communities in 1946 and 1947 made substantial increases in teachers' pay to attract sufficient numbers into the profession. The reader will recognize similar examples portrayed in the choice of college curriculums by students and in the interregional movements of farm laborers.

Effects of Wage Fixing. In Fig. 30 the demand for labor at the beginning of this discussion is represented by DD and the number of man-days by OM . Suppose that, by union action or minimum-wage legislation, wages are fixed at OP' instead of OP , the wage which would prevail under competitive conditions. Temporarily, employers may be forced to pay wage OP' and use all the labor because of contracts let or because of greater loss by immediately reducing operations. After a time only ON man-days of work will be offered and those who could work MN days will be unemployed.

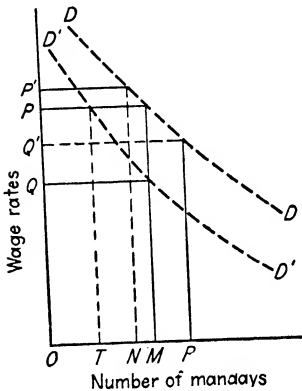


FIG. 30. The effect of a changing demand and of wage "pegging" on wages and employment.

man-days of work will be offered and those who could work MN days will be unemployed.

If it happened that a wage level fixed at OP was still high enough to attract a greater labor supply into the industry, up to OR , holding wages at OP would leave MR of the labor supply unemployed as long as demand was represented by DD . The total supply OR can be employed only at wage OQ' , unless a comparable increase in demand occurs.

The student can work out for himself what would happen to employment if demand fell to $D'D'$ and attempts were made to fix wages at the various levels suggested.

Economists have long and bitterly debated the value of minimum-wage legislation and whether unions are worth while.⁷ The answer would seem to depend on the assumptions. In a truly competitive situation, an attempt to hold wages above or below the level justified by marginal productivity will either result in unemployment or be followed eventually by the proper adjustment of wage rates to supply and demand conditions. It may be asserted, however, that inasmuch as truly competitive situations in the labor market are conspicuous by their rarity,

⁷ A recent example is the articles on this subject in the issues of *The American Economic Review* for 1947 by Messrs. Lester, Stigler, Blum, Machlup, Oliver.

and inasmuch as individual workers are at a great bargaining disadvantage, unions and minimum-wage regulations serve a real purpose in the real world. That purpose paradoxically enough is to force wages nearer to marginal productivity than they would be if they were left to individual bargaining.

Let us therefore look into the elements that interfere with free competition in the labor market and which have inspired attempts at social control by governments and nongovernmental organizations.

SOCIAL CONTROL OF LABOR AND WAGES

Social control of labor and wages varies from the pressure of public opinion and the influence of such voluntary associations as labor unions to governmental controls like minimum-wage laws. All these social influences on wages, hours, and working conditions are coming to be more frequent and more powerful in affecting the conditions of work and remuneration of employees. As noted above, it is the noncompetitive conditions in the labor market which have given rise to attempts at social control.

The Labor Market. The first element making for imperfect competition in the labor market is the generally weak financial position of most wage workers. To achieve results in accord with theory there must be some equality of strength between the parties to a bargain. Typically, however, the employer can wait till his offer is accepted, but the worker, who generally does not have any sizable reserve to carry him through a prolonged period of unemployment, cannot. If a man needs a job, he will take a wage at less than full marginal productivity, assuming he or his employer knows what it is. To some extent those workers covered by unemployment insurance are in a much stronger position than this. Occasionally, too, an employer may also be desperate, as when a rain-storm is threatening the farmer's hay on the ground or when a building contractor has a contract calling for the completion of a large building within a short time. In these exceptional situations, a worker may get a good deal more than he is normally worth.

The inequality of bargaining power between worker and employer might be offset if the worker refused to work at a low wage and sought out another employer. The difficulty is that in actuality there often is no other employer. In many smaller cities and towns there is only one large plant, or only one plant in a particular industry, so that those trained for that industry have nowhere else to go. To move to the next city requires capital, which the worker often does not have, and time, which may be lost and once lost can never be regained. And there may be no employment in the next town. Then, once a man has bought a house

and he and his family have formed attachments, it is not easy to move. Thus, workers are relatively immobile; they cannot move readily to take advantage of alternate opportunities.

Another disadvantage which the individual worker labors under is ignorance. He knows little or nothing about what the employer can afford to pay, about demand conditions, about the going rate of wages or alternate opportunities.

In sum, then, because the individual worker has a perishable commodity—his labor, the supply of which shrinks with time—to sell, because he cannot afford to wait, because it is difficult to move or he does not know where to move, because he often can offer his work to one firm only, he is at a great bargaining disadvantage in confronting the employer. Ordinarily the employer can afford to wait and knows more about market conditions. Therefore the chances are that the individual worker bargaining for himself is likely to get less than the marginal product of his work.⁸ The fact that nonexistent competitive conditions cannot be depended on to force wages up to marginal productivity provides one of the bases of the usefulness of unions and minimum-wage laws.

Labor Organization. In Chap. 3 we listed the principal labor organizations in the United States and their membership. Both the American Federation of Labor and the Congress of Industrial Organizations are composed of so called international (because they have Canadian members) or national unions. Traditionally, member unions of the AFL are "craft" unions, made up of men of one particular skill, like the carpenters or the musicians. A single AFL union, the teamsters, for instance, may deal with employers in every industry which uses trucks. The recent tendency, however, has been for many AFL unions to come closer to the "industrial" type. To cite one example, the International Ladies' Garment Workers' Union (AFL) is an industrial union, one that covers all the workers in a particular industry, from unskilled to skilled operators. The issue of craft *vs.* industrial unionism, over which the CIO originally split off from the AFL, has therefore become largely academic.

Industrial unions like the Steelworkers or the United Automobile Workers cut across craft lines, and a man operating a steel press in an automobile factory belongs to the U.A.W., while one doing similar work in a plant making electric refrigerators belongs to the United Electrical Workers.

⁸ Since many, if not most, employers are selling in imperfectly competitive markets, they cannot, by the very nature of the fact that they face sloping demand curves, pay the full value of their marginal physical product to their employees, though they may be making no profits themselves. Cf. Joan Robinson, *The Economics of Imperfect Competition*, Chap. XXV.

The national (or international) unions are composed of locals, which comprise all individual members working for a particular plant or in one city, and sometimes there are state or district combinations of the locals. In almost every large city and state there is a council or federation of all AFL or CIO locals, which acts as spokesman for their organizations on general labor matters within the area.

Before 1933, the typical trade-union, like the Typographers, the Railroad Engineers, or the building trade-unions, was composed of skilled workers. Because the supply of skilled workers in any trade is likely to be limited and cannot be rapidly augmented, such workers are in a comparatively strong position, so that were able to organize and maintain powerful unions. Because of the great number of unskilled workers, allowing an employer to obtain substitutes readily should his workers strike, unions of unskilled or semiskilled workers in the mass-production industries were small and impermanent till the National Industrial Recovery Act of 1933 and the Wagner Labor Relations Act of 1935 extended the protection of the law to efforts to organize unions. Under the latter law, employees were specifically given the right to organize and to choose their own representatives without interference on the part of their employers.

The National Labor Relations Board, established by the act, can order employers to desist from certain unfair labor practices, like blacklisting or firing union members for no other reason than that they are members, planting spies in unions, or using "yellow-dog" contracts, which provide that as a condition of employment a worker must agree not to join a union. The National Labor Relations Board is empowered to hold elections to determine if a majority of employees in a firm or group of firms wishes to be represented by a union. If a majority so vote, the union is the representative of all employees in negotiations with the employer, whether they belong to the union or not. The Supreme Court has held that an employer must negotiate with the representative of the employees in good faith, but he is under no legal compulsion to come to any agreement.

The protection afforded by the Wagner Act, the revival of business activity in 1936 to 1937 (periods of good business are favorable for labor organization; there is less competition from the unemployed, employers are better able to meet wage demands and are unwilling to interrupt profitable operations), and the great upsurge of industrial employment during the Second World War were responsible for the growth of unionism to its present magnitude. As things stand at present, unions are strong in most manufacturing industries, in construction, mining, and transportation, and to a lesser extent in the communications industry. Unions, however, have had little success with white-collar workers or

among agricultural laborers, who are unskilled, scattered when at work, and not covered by the Wagner Act.

A large body of opinion, indeed, held that the Wagner Act tipped the scales too far in favor of unions. The result was the passage of the Taft-Hartley Act of 1947, which forbade the closed shop, permitted the union shop only under certain specific conditions, imposed a waiting period before a strike could be called, forbade certain unfair labor practices such as coercion of nonmembers or "featherbedding" on the part of unions, and in effect banned jurisdictional strikes or secondary boycotts. Featherbedding means forcing the use of more employees than actually required. A jurisdictional strike is one called to force an employer to hire the members of the striking union, or to stop using members of a rival union. Such other of these terms as are unfamiliar will be explained in the following section.

Labor Activities. Labor is organized primarily to carry on collective bargaining with its employers on the subjects of wages, hours, and working conditions. All other union activities are incidental. The tools which are used to obtain favorable action by the employers are varied. Unions usually prefer to obtain their objectives, whether they be higher wages or shorter hours, by negotiation. If that fails, they may threaten to quit work collectively—that is, to strike. A strike is generally a last resort. Neither union members nor their leaders want to strike, if for no other reason than the lack of financial reserves mentioned earlier (on the whole union strike funds are altogether inadequate to maintain their members for any length of time) but the strike, the withholding of labor, is the only powerful weapon most workers have.

To keep employers from replacing them during a strike, workers picket to prevent scabs or strikebreakers from entering. Sometimes sympathetic labor groups, say union truckmen, will *boycott* or refuse to handle the product of a plant in which there is a strike. This is a secondary boycott, denominated an unfair labor practice by the Taft-Hartley Act. Another form of boycott is for union members to refuse to buy products not made by unionized firms.

The *closed shop* (one in which only members of the union can be hired), banned by the Taft-Hartley Act, has been one of the objects of unions, in order to increase their power in collective bargaining. The act does permit the *union shop*, under which anyone, member or nonmember, can be hired but must join the union on accepting employment.

These tactics and devices are the response to antiunion policies on the part of employers. The closed shop is the answer to open-shop tactics by those employers who attempt to break unions by hiring nonmembers. In England, where employers have not followed open-shop policies, unions

have in general not striven for the closed shop. *Picketing* is the answer to the use of strikebreakers, and boycotts are attempts, short of a strike, to bring an employer to terms.

Objects of Union Activity. While higher wage levels and improved working conditions are the main objects of union activity, there are many others associated with them that deserve mention. One of the most important is limitation on arbitrary dismissals by employers. Without the protection of a union, a worker is subject to dismissal at the merest whim of his employer. Others, associated with this, are promotions from within and job retention on a seniority basis. Lately many unions have been successful in obtaining agreements for old-age pensions to supplement social-security payments.

While unions, particularly CIO affiliates, have taken an active part in political campaigns, the usual object has been not to bring about any important changes in our political or economic system, but merely to elect candidates sympathetic to labor. This is in the tradition of "business" unionism, to which most American unions adhere, which has it that the object of union activity is to improve the economic condition of members within the framework of things as they are.

The Union as Bargaining Agent. The individual seeking employment from a giant corporation is nearly helpless and to say that he can or does bargain is to misrepresent the case. A union representing all the employees can bargain in the true sense.

It may be remarked here that one of the benefits conferred by membership in a union that has nothing to do with wages or working conditions is its contribution to the worker's self-respect. An individual worker for a large firm feels himself helpless, without any voice in directing his own affairs. As a member of the union he is lifted to somewhat the same plane as his employer and he can participate in decisions of the utmost importance to himself, such as how much he should get paid and under what conditions he should work. Economists, treating labor as in theory like any other commodity, are prone to forget that when a man sells his labor, he has to go along with what he sells.

Besides giving the employee something like equality in bargaining power, the union can negotiate more skillfully than an individual. Its negotiators, who are not in the employ of the firms engaged in the dispute, have a knowledge of labor conditions, corporation accounting, and finance, which the average worker cannot have.

As a result of the bargaining power and skill of the union, wages may not only be forced up to the point of marginal productivity but even beyond it, if the union has a strong enough hold on the labor supply. Wages so high, however, might have the result of raising the employer's costs and prices thus reducing sales and then employment. It is also

possible that high wages might attract so many workers into the industry that the union's control of the labor supply would be weakened.

In those instances where a union comprises the total labor force of an industry, and the industry itself consists of a few firms or of many firms united in an employers' association—automobiles and coal are examples—the situation is said to be one of *bilateral monopoly*. There is no pre-determined equilibrium point in such a situation, and what the wage will be depends on the economic power and bargaining skill of the parties.

National unions are the natural result of large-scale economic organization in the United States, just as are large corporations selling their products in every state.

Wage and Hour Legislation. After various state minimum-wage and maximum-hour laws, which in earlier years had been held unconstitutional, were approved by the Supreme Court in the mid-thirties, the national Fair Labor Standards Act, more generally known as the Wage and Hours Act, was passed in 1938. Under its terms, workers in industries operating in interstate commerce, except agriculture, the processing of farm products, and certain others, must be paid at least 40 cents an hour and time and a half for work in excess of forty hours a week. This law in effect also prohibits child labor. In 1949 the minimum was raised to 75 cents.

The purpose of this law and similar state legislation is to protect workers so low in the economic scale and so unskilled that they cannot form unions to protect themselves from *exploitation*, which might be technically defined as paying a man less than his marginal productivity. In a truly competitive market minimum-wage laws which set the rate above the level called for by marginal productivity will cause unemployment, but the workers whom the Wage and Hour Act is designed to protect are the very ones who have the weakest bargaining power in the least competitive labor market.

In any case, if the true marginal product in an industry is such that its wages are below the standard of decency, that is an industry which has no place in America, the wealthiest of nations.

Qualification of Marginal Productivity. The marginal-productivity theory is of value in providing a basis for understanding the broad principles involved in the determination of wages, and there are many illustrations, some of which have been cited, which are evidence that these principles govern economic trends. Nevertheless there are any number of particular instances, which may perhaps be a majority, where the conditions are so different from those assumed in the statement of the theory that they result in wages which are unrelated to the marginal product or are related only remotely and indirectly. The differences

between the theoretical assumptions and actuality chiefly revolve around the fact that the labor market is largely noncompetitive, while the theory assumes competition.

The noncompetitive nature of the market has helped give rise to unions and labor laws whose object is to remedy the bargaining deficiencies of the individual worker, and the unions and laws in themselves enhance the noncompetitive features of the labor market and make it less and less like the theoretical model.

Before leaving this subject one more remark might be made. It is difficult, if not impossible for an employer to know what is the marginal productivity of an individual worker or of a group of workers. For one thing, except in a most general way, a firm does not know the shape of the demand curve for the products it sells. It is even more difficult to calculate marginal productivity, which is derived from that demand curve but has other elements in it, like the productivity of the individual worker.

This ignorance as to what the wage should be leaves wide room for bargaining and provides a considerable justification from the worker's point of view for having a skilled bargaining agent in the form of a union, which also has a much stronger bargaining position than an individual.

CHARACTERISTICS OF WAGE MOVEMENTS

Rigidity of Wages. Wage movements tend to lag relatively to movements of prices. In addition the fluctuation in the wage level are of lesser amplitude than price fluctuations. These tendencies for wages to move more slowly and less violently than prices have important consequences, some of which will be discussed briefly below.

A compilation of wage data for a group of important industries, including agricultural implements, automobiles, chemicals, iron and steel, etc., showed an hourly wage rate decline of only 17 per cent from 1929 to 1932. Although the cost of living had declined about 20 per cent, these wages rates give a false impression of the purchasing power of labor, because of the 12 million unemployed. The effect of unemployment is in part indicated by the fact that, whereas wage rates in New York State declined only 28 per cent in this three-year period, factory payrolls declined 55 per cent.

This wage rigidity, together with other rigid prices, particularly those of monopolized goods, is considered by some students to have been a major factor in prolonging the depression of the thirties, during which time 13 million workers were unemployed and business activity was 45 per cent below normal. They believe that wage and other price rigidities in certain urban industries, when they have the result of maintaining the

prices of goods which farmers buy in spite of large unemployment in the industries producing them, are in conflict with the interest of those engaged in agriculture.

Other students, on the contrary, believe that even if wages and prices had been cut sharply, the depression would have run much the same course as it actually did, since it was due to a collapse of investment and business prospects. Such students would further hold that the maintenance of urban wages (since a decline would not in any case have revived business) was of benefit to farmers, since it maintained purchasing power for their products. In Chap. 28 on business cycles we shall try to strike a balance between these two views.

The cause of wage rigidity is not entirely clear. It could not, during the 1929 to 1932 depression, have been attributed to union policy, because the most important industries, like steel and automobiles, were at that time completely unorganized. Total union membership was only 3 million and, with 12 million or more unemployed, unions were in a very weak bargaining position. The fact that monopolistic industries held their prices up may have had something to do with it. An industrialist who was not reducing the price of his products did not have a very strong excuse for reducing wages. Custom also had an effect; when a wage rate has been unchanged for some years it acquires a certain aura of untouchability. Public opinion had some influence; in general people believe that wages should at least afford a minimum living standard. But none of these explanations, or all together, are quite satisfactory.

The fact remains that monopoly prices stayed up and so did wages in monopolistic industries. Competitive farm prices went down, as did agricultural wages, about 50 per cent from 1929 to 1932, compared to the 17 per cent reduction in industrial wage levels.

Urban and Farm Wages Compared. Prior to 1921, the money wages of factory workers and farm labor moved closely together. In 1921, however, farm wages fell to 155 per cent of the 1910 to 1914 average, whereas industrial wages did not fall below twice the 1914 level. Both types of wages rose again in general until 1929, but industrial wages remained much higher than farm wages. In the deflation period after 1929 farm wages fell the most, dropping in 1933 to 85 per cent of the 1910 to 1914 level, while industrial wages were still about twice the 1914 level. Through 1935 to 1939, factory wages continued relatively high above farm wages. With the war, however, farm wages rose, relatively, to industrial wages, which in 1947 were not quite twice the 1939 level, while farm wages were more than three times what they had been in 1939.

Despite the relatively enormous rise in farm wages in recent years, farm workers' wages in money terms are still far below those of indus-

trial workers. In October, 1947, the *monthly* farm wage rate without board was \$112. At the same time, the *average weekly* earnings in manufacturing industry were \$51, about twice as much on a *monthly* basis. On an annual basis, farm wage workers fare even worse, for their work is highly intermittent and seasonal. In 1946, a year of comparatively high wages, "farm wage workers in the United States had an average cash income of \$521, including \$391 from farm work and \$130 from non-

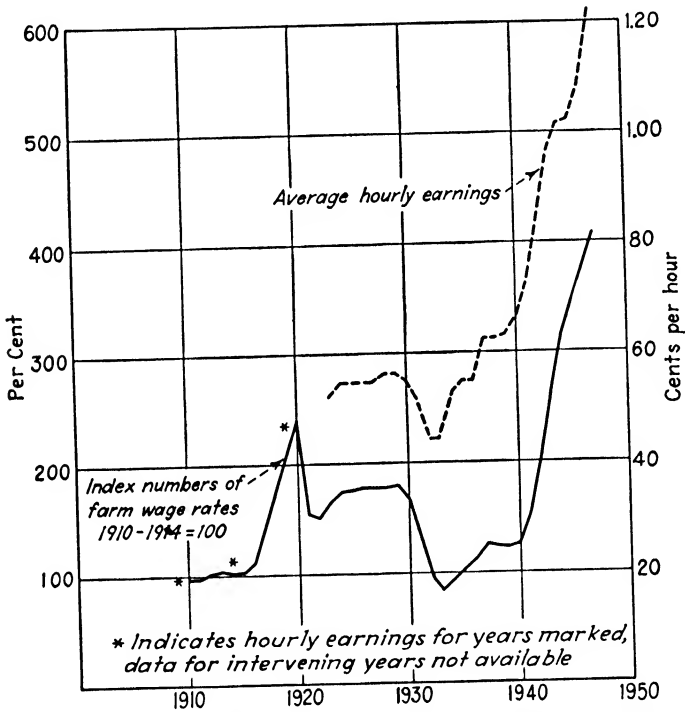


FIG. 31. Index of farm wage rates and average hourly earning in all manufacturing. Sources: BLS, U.S. Department of Labor and BAE, USDA.

farm work. This represented cash earnings from an average of 142 days of wage work, with one fifth of this time spent at non-farm work.”⁹ These comparisons may not be quite so disadvantageous to the farm worker as they seem, when the much lower cost of living on the farm is remembered.

The absolute low level of farm wages is related to the low level of agricultural income in comparison with that of other economic groups, which in turn is probably due to the larger number of persons in agriculture than in industry, relative to the resources employed.

⁹ L. J. Ducoff and M. J. Hagood, *Farm and Non-Farm Wage Income of the Hired Farm Working Force in 1946*, U.S. Department of Agriculture, BAE, June, 1947, mimeographed.

The relatively great decline of agricultural wages in the 1930's as compared to industrial was due to several causes: (1) The expansion of demand for labor was primarily in urban industries, and the movement of population from country to city during this period was far from being great enough to bring wage equality. (2) Farm workers, being unorganized, were in a weaker bargaining position than city workers. Their bargaining position was rendered even worse because there was relatively more surplus farm than urban labor and this in turn was partly due to a back-to-the-farm movement on the part of city people which aggravated the normal rural overpopulation. (3) The drop in farm-product prices was much greater than for industrial products, and the effect on farm wages was correspondingly greater. The greater rigidity of urban wages, of course, was in part cause, as well as effect, of the comparative rigidity of industrial-product prices.

The high wages and tremendous demand for labor in war industries drew workers from the farm and improved the bargaining position of farm wage workers, and the high prices of farm products after 1941 made it possible for farm owners to pay higher wages and still make large profits.

Questions and Problems

1. Distinguish between cash wages and imputed wages; between wages as a cost and as an income; between money wages and real wages.
2. By illustrations show that the degree of change in money wages is not always a true indication of the degree of change in real wages.
3. Summarize the history of immigration to the United States and of the United States immigration laws.
4. What influences the size of the labor force?
5. Mention five so-called noncompeting groups of workers, and mention the forces which tend to keep them noncompeting. Are these five classes more or less rigid than they were thirty years ago? Why?
6. Explain the essential features of the marginal-productivity theory of wages. To what degree is it valid?
7. What are the objects of union activity?
8. What are the most important post-1933 bills affecting labor? Describe them briefly.
9. What elements limit the free play of competition in the labor market?
10. In a fully competitive market, what will be the effect of wage regulation? Illustrate by diagrams.
11. What do you think is the future outlook for wages in this country?

Suggested Readings

1. R. A. Lester, *The Economics of Labor* (1941), is the best and most comprehensive recent text.
2. Dale Yoder, *Labor Economics and Labor Problems* (1939), is a thorough study of labor organization, legislation, and problems.
3. Paul Douglas, *Real Wages in the United States, 1890-1926* (1930), is an ex-

haustive statistical study of wages during that period; *The Theory of Wages* (1934) should be consulted by all who desire an acquaintance with the most scholarly literature on the subject of wages.

4. Paul H. Douglas, "Wage Theory and Wage Policy," *International Labor Review*, March, 1939, is a comprehensive evaluation of wage theory and policy under a variety of circumstances.

5. R. R. R. Brooks, *When Labor Organizes* (1937), is an interesting and sympathetic account of union organizing methods, with particular reference to the 1933 to 1937 period.

6. C. O. Gregory, *Labor and the Law* (1946), is a very interesting history and analysis of labor legislation.

7. C. R. Daugherty, *Labor Problems in American Industry* (1938), is particularly valuable for the nontheoretical aspects of wages and labor problems.

CHAPTER 16

CAPITAL AND INTEREST

Interest is important both as a cost and as a type of income. Interest income in the United States amounted to 7.9 billion dollars in 1947, not counting imputed interest coming to owners of farms and other businesses. Imputed interest is earned on that part of the capital of an enterprise which is invested by the owner himself and which is not paid out to others. In 1945 farmers paid out 250 million dollars in interest on mortgages and perhaps half as much interest on other types of debt. Large as this amount is, it is much smaller both absolutely and proportionately than it used to be. During depression years like 1932 or 1933 farm interest charges averaged over 600 million dollars, or nearly 10 per cent of gross farm income. Since then, interest has become a much lighter burden, but it is important for many individual farmers and not to be disregarded in the aggregate, especially as it represents a fixed charge which may become painful if prices decline materially. In any case, in view of the total value of farm property, including land, buildings, livestock, and equipment, which was estimated to be worth 89.2 billion dollars on Jan. 1, 1947, the imputed interest is clearly a considerable amount, as only about 9 per cent of this total value was covered by debt. The remainder was owned free and clear.

On all this investment or ownership of wealth not represented by debt, the farmers could have secured interest by exchanging their owned wealth for money and investing it so that interest would have been received. Not only in agriculture but also in all other kinds of business activity, interest plays a large part. Most people in the prime of life hope that, as they grow older, they will be able to live at least in part from interest on savings and investments. A considerable portion of life insurance income is from interest.

Interest is important as income to those who receive it and as a cost to those who pay it. It is also important as a sort of direction giver to the economic system. Those industries which can pay the highest rate of interest attract capital and thus are the ones which can expand their facilities to the greatest extent.

THE NATURE OF CAPITAL

Interest Paid for Use of Capital. The term *interest*, like most terms in economics, is used with different shades of meaning. In all cases

where interest is paid, however, it can be said to be paid for the use of capital. But the term *capital* also is used with different meanings. In fact, there is no economic term which is used with a wider range of meanings and in regard to which there has been more dispute as to its proper or best use than the word *capital*. Fortunately, however, it is usually possible to tell from the manner in which it is used in any case what meaning it is intended to convey. When we say, as above, that interest is paid for the use of capital, we intend that in this usage capital shall include all forms of wealth, though this statement will require further explanation to be accurately understood. The banker and businessman think of interest as money paid for the use of money, but an understanding of its cause and of the factors governing its rate requires that we look deeper and examine the operation of forces not apparent on the surface.

Classical Concept of Capital. By the classical economists the term *capital* was not applied to land but only to wealth of other kinds used in such a manner as to furnish income. Adam Smith refers to goods which are accumulated or stored up, such as "materials and tools," or "goods of different kinds," as "stock." He then says that when a man

... possesses stock sufficient to maintain him for months or years, he naturally endeavors to derive a revenue from the greater part of it, reserving only so much for his immediate consumption as may maintain him till this revenue begins to come in. His whole stock, therefore, is distinguished into two parts. That part which he expects to afford him revenue is called his capital.

Adam Smith's use of the word *capital*, accordingly, refers to produced goods devoted to income-producing purposes. This is the concept of capital as generally used by the classical writers on political economy and also in much of the discussion of capital and interest by modern economists.

Capital and Money. Capital is sometimes regarded by persons who are not careful in their thinking as being solely or almost entirely money. This view results from the fact that exchange values are expressed for the most part in terms of money. Let any man, for example, be asked how much capital he has invested in his business, and he will mention a sum of money. The owner of a store may say that his capital amounts to \$75,000. If asked, however, of what his capital consists, he may say: land, \$5,000; building, \$20,000; merchandise for sale, \$30,000; accounts receivable, \$5,000; cash, \$5,000; equipment and other things, \$10,000. The above illustration is given to emphasize that capital for the most part consists of things other than money, though values of all capitals are expressed in terms of money, and money itself is a form of capital. Money as the medium of exchange is *fluid capital*. By this is meant that

it is capital value which may be quickly converted into other forms of capital. It is a peculiar and necessary form of capital in an exchange economy. But in addition to being in a fluid form, money differs in one other important respect from other forms of capital. The more a nation possesses of most kinds of capital, the more abundantly the people of that nation may satisfy their wants. A very great increase in the quantity of money for the nation as a whole, on the contrary, would not satisfy any more wants, or enable production to be carried on more effectively, but would only result in higher prices. The student should be careful not to think of capital as consisting entirely, or even to any large degree, of money, and to remember that though money is a form of capital it differs in several ways from other forms of capital.

Capital in Corporation Accounting. As has already been explained in an earlier chapter, by the capital of a corporation may be meant either the authorized capital or the paid-in capital—usually the latter. This refers to the amount of investment of stockholders in the corporation for which stock is issued, excluding surplus. When the capitalization of a corporation is spoken of, that which is meant is usually the sum of the par value of the stock and the amount of bonds outstanding. With these concepts of capital, however, we are not concerned in this chapter.

Is Land Capital? The precedent of the classical political economists in not including land as a part of capital is followed by a large part of present-day economists, especially in explaining what governs the rate of interest. The most common definition of capital in economics is that it is the sum total of savings from past production (excluding land) used in present productive processes. When land is excluded from the category of capital, however, land is not used as a synonym for real estate. Instead, it refers only to land as a gift of nature, to natural resources without improvements. In practice most land with any appreciable value at present is a mixture of natural resources and of improvements made by man. When interest, as that term is used in the language of business, is paid for the use of money with which to buy real estate, it is impossible to tell what part of this payment is made in order to get control of a stock of savings which are the result of past production, and what part is made to get control of resources which are originally the gift of nature. Accordingly, in the business world land is considered capital to the same degree as any of the goods other than money from which income is derived.

The authors of this text hold that there are sufficiently important differences between land as a natural resource and capital which is accumulated from the savings of past productive effort to justify the distinction made between them by the classical economists. Among these differences are the following:

1. *Fixity in Amount.* Land as a natural resource in the aggregate and of particular grades is relatively fixed in amount for all time. Capital as a result of saving can be increased manyfold. Most kinds of saved capital also wear out or depreciate more rapidly than does land as a natural resource.

2. *Immobility.* Land as a natural resource is fixed as to location. Capital which is accumulated from the savings of past production possesses a considerable degree of mobility. Some forms are absolutely mobile at all times. When first saved most forms may be placed in almost any location.

3. *Price Determination.* Resulting from the above, there are important differences in the manner in which the prices of these two classes of property are determined in the long run. The normal or long-run value of capital goods, excluding land, tends to equal their cost of production or reproduction. It may go lower but will not generally long remain much higher. Land, having no original cost of production and being fixed in amount, has its value in both the short run and the long run determined solely by the capitalization of the income derived from it. Of this more will be said in the next chapter.

It is unfortunate that in the language of economics and of business the word *capital* is used in so many different ways, especially that it is used both to include and to exclude land as a natural resource. Some writers in their effort to meet this difficulty include land as a part of capital and then classify all capital into natural and artificial capital, letting land, as we have above discussed it, constitute the first class.

Capital as Capitalized Income. Another concept of the word *capital* as used by economists is that it is the capitalized value of any income. If a property yields an annual net income of \$5 and the interest rate is assumed to be 5 per cent per annum, the value of that property is \$100, the value being obtained by dividing the annual income by the interest rate. This may be called its *capital value*. Irving Fisher, one of the best known students of capital and interest, says: "We must distinguish between capital wealth and capital value. It is capital value of which most people think when they say capital. . . . I define wealth as material things owned by human beings. . . . Capital in the sense of capital value is simply future income . . . capitalized." By being capitalized is meant that a value is assigned to it on the basis of expected income from it, which income is considered interest at some assumed rate or per cent.

Capital as Credit. One of various other uses of the word *capital* is in application to borrowed funds or credit. Financial journals speak of the price of capital when they have reference to rates of interest which must be paid in the *loan market*. This is frequently referred to as the capital market.

Capital in Interest Theory. In giving consideration to the factors which govern the rate of interest, to which much of this chapter will be devoted, the authors prefer to think of capital as the accumulated excess of the results of production over consumption. Capital as here used is the present sum of past saving. This excludes land.

Savings arise when individuals do not consume goods up to the value of their income. The difference between the value of their consumption and income is usually kept first in the form of money or a bank deposit. In time, however, these funds are used to acquire other goods, which goods are used either to assist or to support laborers while they are making more goods. These man-made goods, insofar as they are tangible goods, are subdivided into *producers'* capital and *consumers'* capital. The former refers to goods not desired for themselves but as an aid in producing consumable goods. The latter refers to the present stock of tangible consumable goods, including the more durable items, such as houses, radios, and automobiles, as well as food supplies and the like. Some consumers' capital is used to obtain an income, such as apartment houses, taxicabs, and so on. Valuable rights, like patents, trade-marks, or good will, alone are sometimes called *intangible* capital.

THEORIES OF INTEREST

Interest is the price of the use of capital, in some usages including and in others excluding land. It is usually computed at a rate or per cent of the face value of the capital, although for certain purposes it may be viewed as an amount of product which accrues to capital. Interest may be actually paid by a borrower to a lender, and that is *explicit* interest or *commercial* interest. On the other hand, it may be that part of the income of an entrepreneur which should be assigned as the return on his investment in capital goods and as such is known as *imputed* interest. The amount which an entrepreneur is justified in imputing to his capital as interest is determined by the rate of interest on similar kinds of investments in the market for loanable funds. As the term *interest* is ordinarily used, the capital for the use of which it is paid includes all wealth; but, when interest is considered one of four distributive shares into which all income is divided (the other three shares being wages, rent, and profits), the capital for the use of which it is paid excludes land as a natural resource. It should be carefully noted also that capital on which interest is paid, as the term *interest* is generally used, is not identical with capital as used in most discussions of what governs the rate of interest. This difference will be brought out more fully in the pages which follow.

Gross and Pure Interest. A distinction must be made between *gross* interest and *pure* interest. Pure interest consists of the return for the

use of capital as such, after allowances for risk and costs involved in making and collecting the loan are deducted. Therefore the pure-interest rate on investments of all types should be the same. The actual rate of interest paid by a borrower to a lender consists not only of the pure interest but also of a compensation for the risk which the lender or investor is taking, and the cost of managing the investments. This interest actually paid is known as *gross interest*. A close approach to an objective example of pure interest on a long-time loan would be the rate on bonds of a well-established government, such as that of the United States. In that case the risk is at the minimum and the cost of managing the investment almost nothing. Short-term interest rates which most closely approach pure interest are the rates on borrowings by our Federal government and those on call loans secured by the pledge of high-grade stocks and bonds listed on the New York Stock Exchange. These short-time rates, however, vary greatly from time to time, for reasons which will be explained later in this chapter. When attention is turned to the field of long-time investment in private enterprise, the rate of return on corporation bonds will be higher than on the best grades of government bonds, since the former are less safe. The effect of risk on gross interest may be illustrated by the yield on bonds of different security, the yield being the percentage according to the annual interest payment on the market price of the security. During the week ending Aug. 30, 1947, the average yield on U.S. Treasury bonds (seven to nine years) was 1.51 per cent; that on prime corporate bonds, 2.52 per cent; that on comparatively low-grade corporate bonds, 3.18 per cent. It will be noted that each type of bond above named gave a higher yield to the investor than the preceding type, a fact showing that these types of investments have been arranged in order of the amount of risk involved, as viewed by investors on the date mentioned.

The difference between gross and pure interest should be noted in the following discussion. When we speak of interest as the amount actually being paid, we refer primarily to *gross interest*, but when we use the word interest as referring to that share of the national income which goes to capital, we should be referring to *pure interest*. In practice it is very difficult to segregate from the total or gross interest the part which should properly be assigned to cover the mathematical probability of loss, and a large part of what is statistically reported as interest is for risk and would disappear if losses were deducted. For that reason statistical reports as to the part of the national income which is essentially pure interest should be accepted with caution. They are likely to overstate the amount of pure interest.

Early Views of Interest. During long periods of history the taking of interest was looked upon as unethical because it was believed that

money was "sterile," that it did not produce other money, and that, therefore, the borrower should not be expected to return principal plus interest. With the growth of the use of borrowed funds for purposes of commerce and later of industry, the general public attitude toward the taking of interest was modified. Although the church continued to issue statements concerning the immorality of interest taking—or usury, as it was called—the practice became widespread.

Productivity and Interest. In the evolution of interest theories, it was logical that with the development of commerce and industry attention should be paid to the physical productivity of capital. Therefore an early theory of interest which justified it was one which pointed out that men's efforts resulted in so much more physical product when aided by tools that the borrower, by utilizing equipment purchased by borrowed funds, could reproduce not only the principal but in addition was fully able to pay a premium, or interest, to the lender. Because the worker was more productive with capital (other than money) than without it, this was called the *productivity theory* of interest. This productivity characteristic of capital is still recognized as fundamental in the theory of interest most generally accepted by present-day economists.

Abstinence and Interest. The productivity theory, however, does not answer the following question: Why is there such a limited supply of capital that lenders are able to command a price for its use? This weakness in the explanation of interest called for a theory to explain why there was but a limited supply of capital. Such a theory, known as the *abstinence theory*, became popular after it was expounded by N. W. Senior in 1836. Senior held that individuals must be paid to save, since they prefer to consume their incomes at once. They make a sacrifice if they save a part of those incomes. Individuals in order to be encouraged to save must be paid a premium for waiting, and this is known as *interest*. The abstinence theory by itself was as one-sided as was the early productivity theory. In the interest problem as in all problems of prices, proper weight must be given to factors influencing both the demand and the supply.

The Exploitation Theory. Another theory which developed a considerable group of followers, though it does not contribute particularly to an understanding of present interest problems, is the exploitation theory, advanced by the Marxian socialists. That theory, vigorously enunciated by Karl Marx in 1867 and generally supported by socialists, is based on the labor theory of value, which is that the value of any good is or should be equal to the socially necessary labor involved in its production. It is maintained, however, that in a capitalistic system, the laborer receives only part of what he produces, the remainder of the

value being taken by the capitalist as interest. Interest, therefore, is considered as something of which the capitalist is robbing labor.

A chief weakness of both the labor theory of value and the exploitation theory of interest is that they represent ethical judgments of what their supporters feel ought to be or is desirable, rather than a realistic consideration of how an economic system works. They are comparable to a statement that no man ought to die until he is two hundred years of age. Actually people will not freely supply present goods or tools for the use of others without being paid for such use. And because capital is productive, in the elliptical sense that labor is more productive when working with capital, the borrower can afford to pay interest. The truth of these statements has been illustrated in Russia. The present rulers of Russia profess to be ardent followers of the doctrines of Karl Marx. Yet in order to secure the capital to carry on production effectively, it has been found necessary both to apply compulsion and to offer rewards in the form of interest to the citizens of the Russian state to induce them to save and to use their savings to buy the government's bonds.

It should be carefully noted that, though that which is first saved by one who saves is money, ultimately it consists of other goods or capital. When the Russian or any other government induces its citizens to spend less for food, clothing, and amusement in order to save money income, and to turn such savings over to the government so that the government with that income can hire people to make machinery and other productive capital, this procedure causes workers to produce capital goods rather than to produce goods for immediate consumption. In like manner practically all saving of money is ultimately the saving of something else than money, and the users of these other things are able and willing to pay interest because of their productivity.

The above analysis does not deny that certain capitalists may be securing a larger part of the national income than is socially desirable, or even that the channeling of interest payments into the hands of comparatively few may have deleterious results on the economy. It does show, however, the fallacy of the exploitation theory of interest.

Another defect in the logic of the exploitation theory of interest is that it does not give recognition to the fact that in the payment of interest someone is paid for the postponement of consumption. This point will be brought out more fully below.

The Time-preference Theory. Another explanation of the cause of the rate of interest has come to be known as the *time-preference theory*. It is simply that the rate of interest is governed by the degree to which people prefer to have less goods now rather than more later. This preference may be due to the desire and ability to use present goods to

carry on production, but it also may be due to other causes, such as belief in the philosophy of "let us enjoy today, for tomorrow we may not be alive." Enjoyments distant from us in time appear smaller than those near at hand, just as distant objects appear smaller than those close by. Accordingly, people prefer their enjoyments in the near future, even though that means a smaller total of goods.

In explaining the supply of capital, the time-preference theory differs but little from the abstinence theory except in emphasis. The latter theory emphasizes the immediate sacrifice made by the saver for which interest must be paid. The time-preference theory points to the choice made by the saver between fewer goods now and more goods in the future. The time-preference explanation is preferable in that it is more purely a statement of fact without any implications as to sacrifice made by savers.

The reason for this is that, though many savers may not consume the full value of their current income, they cannot be said to "abstain." A man with an income of several hundred thousand dollars a year can hardly be called abstinent if he does not spend all of it on personal consumption. In fact, it is actually very difficult to spend a very large income on consumption goods, as persons who saw the movie or read the book *Brewster's Millions* can testify. Clearly, then, when a rich man is paid interest, he is not receiving the reward of abstinence. He does obtain interest, however, for the reason already mentioned, that capital is productive, that men using capital can produce more than they would if they used less or none, so that would-be users are willing to pay for its use. Our rich man himself could use the capital he has saved. Since, because of its productivity, others want the use of it, he is enabled to put a price on his savings and lend them to the highest bidder. In other words, from this point of view, interest is an opportunity cost, the price that must be paid to bid capital away from alternative opportunities, including the owner's opportunity of using it himself.

Though abstinence is not the correct word to apply to the savings of the wealthy, nevertheless when it is necessary to obtain a great deal of capital in a short time from a large group of people, there is no way to do it except by persuading or forcing them to abstain from immediate consumption. Russia again furnishes an example. Ever since the Bolshevik Revolution in 1917, the Russian people have been kept to a very low standard of consumption so that the means could be obtained to build up the country's industrial plant. After the Second World War the people of Western Europe were faced with a similar problem. So much capital equipment was destroyed during the war that a low standard of consumption was necessary to save the means of replacing it. If Western Europeans consumed all they currently produce and could have

obtained no loans, they would never have been able to rebuild their factories and transportation facilities and thereby restore their prewar standard of living. They were eager for help from the United States because thereby they got capital quickly without forcing current consumption down to an impossibly low level.

Liquidity Preference. Besides time preference, owners of savings or other funds which borrowers are seeking have another sort of preference, for the overcoming of which they must also be paid interest. This is liquidity preference, which refers to the desire of people for keeping their assets in a "liquid" form. Liquidity in financial literature means ease and rapidity of conversion into cash. A marketable government bond comes close to being perfectly liquid because it can be turned into cash almost instantly with little or no loss. A farm or other real property is far from being so liquid because it cannot be sold quickly and often only at a considerable loss. Even less liquid are specialized pieces of equipment for which the market may be very narrow.

Holding cash or other liquid assets is advantageous because their value, superficially at least, does not decline and because the owner of such assets can always make use of favorable opportunities for investment. Therefore if someone wants to borrow liquid funds and put them in an illiquid form, he must pay enough interest to offset the owner's liquidity preference.

The Marginal-productivity Theory. From the earlier productivity theory of interest there was evolved the marginal-productivity theory. Those who hold this theory contend that the rate of interest at a given time is governed by the productivity of capital in marginal uses. By marginal uses are meant the last in order of effectiveness. Here we must go back to the law of diminishing returns. With a given supply of land and labor, additional units of capital will yield decreasing returns—that is, smaller additional returns for each additional unit of capital applied—and this will result in lower rates of interest. As more capital is saved, people must employ it in less effective uses. But, if the total supply of capital should suddenly be reduced to one-third of its present amount, the competition among those desiring capital for use in the more effective ways would result in raising the rate of interest and in making new capital unavailable in the least effective uses to which it is now devoted. Those using capital in the more effective ways could afford to pay higher rates of interest, and competition for its use would force them to do so.

The meaning of the expression *productivity of capital*, as well as the considerations in the mind of an entrepreneur when he is contemplating the purchase of equipment, may be made clearer by the following example: Suppose that the owner of a factory is considering whether or

not to buy a machine which costs \$10,000. Let us suppose that the machine may be expected to depreciate and have expenses to the amount of \$2,000 per year, but that it will save \$3,000 per year in other costs. In other words, the owner, after caring for depreciation and other expenses, will still be \$1,000 better off by having the machine than by not having it. A saving of \$1,000 per year on an investment of \$10,000 is 10 per cent. Hence in such a case it would be very profitable for the factory owner to borrow money at 8 per cent interest to buy the machine. By so doing he would increase his profits \$200 per year. In fact, if there were a very great number of such opportunities, the rate of interest probably would not remain at 8 per cent but would rise to about 10 per cent. Other entrepreneurs would see the opportunity to profit by borrowing and would bid up the price or interest rate on the use of capital.

Each entrepreneur tends to use additional capital until the amount expected to be added to his income by the use of that capital is approximately equal to the cost of that capital, consideration being given to depreciation, upkeep, and, of particular concern here, interest. The interest rate is expressed as a percentage of the capital investment or purchase price of the equipment bought. *Interest may be the rate paid to a lender or the rate foregone when the entrepreneur uses his own funds.* Where the annual cost of the use of capital and the annual amount added to the entrepreneur's income so approximately balance that the entrepreneur is not inclined either to increase or to decrease the amount of capital he uses, the point of marginal productivity has been reached.

Entrepreneurs competing against each other for the control of capital goods will tend to bid up the rate of interest to the expected productivity value of such capital goods in marginal uses, which are at the border line between the most effective uses to which capital has not yet been put and the least effective to which it has been put.

The rate, of course, is determined not by the gains which are realized, but by those which are expected. Some bidders for capital make miscalculations and take losses. Others are better managers, or have better luck, and make pure profits in excess of the going rate of interest. There are probably very few of these bidders who receive a return from the use of capital exactly equal to the amount paid in interest. The hope of profit slightly in excess of the market interest rate, however, stimulates entrepreneurs to bid against each other for the use of capital owned by others, and the extent to which they can afford to pay interest depends upon the productivity of capital in marginal uses. *The dominating factor in determining the rate at a given time is the expected productivity value of capital in new marginal uses.* This is the essence of the marginal-productivity theory of interest. It is admitted by those who hold this theory that there are many particular cases of borrowing

to which the marginal-productivity method of rate determination is not applicable, particularly in consumer uses of capital. But it is believed that the rate in such cases follows the rate established by marginal productivity.

Some support for the marginal-productivity theory may be found in observing the higher rates in countries in which saved capital is scarce in comparison with rates in more developed countries with a greater abundance of saved capital. Fear of loss, or risk, of course, is also a factor, but this fear of loss by frightening investors may result in hoarding and investment elsewhere and may create such a scarcity of capital available for borrowing that in individual cases in which no high risk is present high rates may be brought about by high marginal productivity.

The marginal-productivity theory of interest is not accepted by all economists. Some consider that it unduly emphasizes one of a number of factors which give rise to time preference and assert that the only correct explanation of the rate of interest is found simply in the *degree of time preference*. Perhaps in a practical way the most important result which might follow from whether or not this claim is true is that, if the interest rate varies with marginal productivity, increased savings, by reducing productivity at the margin in accordance with the law of diminishing returns, should result in lower interest rates. As interest rates do tend to be higher in a country in which the supply of capital has been reduced by war, do tend to be lower when the savings in a country have increased but not many new uses for capital have been discovered, and do appear to be increased by large new possibilities of using capital effectively in production (as by important inventions), it appears that marginal productivity does exercise a sufficiently strong influence to be regarded as a most important determinant of the rate of interest. This being true, it follows that the most effective way to reduce the rate of pure interest is to encourage saving.

Does Interest Stimulate Saving? Objections have been made to the view that people are stimulated to save by their ability to receive interest on their savings, as set forth by Senior in the abstinence theory, and to the view that the extent to which people save varies with the amount of interest they are able to receive. These objections are based on the ground that the principal is more important to the saver than the interest. People save in order to be secure against "sickness, accident, old-age, unemployment and similar contingencies. . . . They save in order to heighten their feelings of importance and independence . . . (to obtain) the esteem and perhaps the envy of their neighbors."¹

That people would save in substantial amounts if there were no inter-

¹ F. W. Clower, *American Economic Review*, June, 1928, p. 274.

est, or even if savers had to pay interest to someone to take care of their savings, is undoubtedly the case. It is also true that a high interest rate will stimulate savings. In advanced commercial countries, when interest rates have been raised because the supply of capital has been reduced by war, a large accumulation of savings has resulted. Nevertheless, the rate of interest probably exercises only a secondary, not a primary, influence on the amount saved, and much, if not most, saving is done without any particular consideration of the prevailing interest rate.

Another extremely important influence on the amount of saving which does not have much to do with the interest rate is the government. Public policy in a country at war, or in a country with its capital stock depleted in consequence of war, may be such that savings may be forced on the community. This can be done in several ways: (1) by taxation, with the government investing the proceeds; (2) by having consumers buy a much greater quantity of government bonds than normally, through legal requirement or the pressure of public opinion; (3) through cutting off the flow of consumers' goods, so that people have nothing else to do with free funds except to save them, as happened in the United States during the Second World War; (4) by the government's printing or borrowing money for its own use, so that it is able to outbid consumers for commodities and thus, in effect, force them to cut their consumption, though they may have no savings accounts or bonds to show for their deprivation.

Traditional Theory of the Rate of Interest. It used to be widely accepted that the rate of interest was fixed much in the same manner as the price of an ordinary commodity. The demand curve, drawn in the conventional manner, represented the falling marginal productivity of capital as more of it is used. On the supply side, the quantity of savings was supposed to increase also in conventional fashion with higher interest rates. The beginning, however, of the supply curve of savings generally was drawn below the base line of the graph to show that there would be some saving, even at negative interest rates. The crossing point of the two curves was held to determine the interest rate, and like any equilibrium price, the rate was supposed to equate the demand for capital with the supply of savings.

For many reasons, however, this traditional view is not accepted in many quarters. For one thing, it is now believed that much more important than the shape or slope of the demand curve for capital (as determined by its marginal productivity) is the fact that the position of this curve is constantly shifting from left to right and vice versa.

The Shifting Demand for Capital. One of the chief reasons for shifts in the position of the demand curve for capital is the growth of population, which tends to push the curve to the right. The same thing

happens with technological advance. Important basic new products like the automobile or the radio give rise to a tremendous demand for capital in order to construct the necessary facilities to manufacture them on a mass basis.

It may be said that the shift of the demand curve for capital to the left or right is one of the most important of all economic phenomena because it is quite likely that the increase and the decrease in the demand for capital is the fundamental cause of ups and downs in business activity, which subject will be explored in Chap. 28.

The modern objections to the classical view of how interest is determined go far beyond emphasizing shifts in the demand for capital rather than the crossing point of the demand (marginal productivity of capital) curve and the supply curve for savings. It goes to the very fundamentals of the older theory, as will be brought out in the next section.

Interest, Savings, and Investment. The traditional position was that interest rates vary so that the amount of capital invested equals the amount saved. In reverse it was argued that the amount saved will be influenced by changes in interest rates so that the capital supply will equal the amount which will be invested at those interest rates.

This classical view, that what is saved must always be invested at some interest rate, has been subjected to a certain amount of criticism since Malthus's day. Recent critics even strike at the two pillars on which the classical theory was built. First, these writers hold that interest rates have little or nothing to do with what portion of income is saved. Instead, it is contended, the rate of saving is governed by habits and conditions, "the propensity to consume," which are largely affected by the inequality in income distribution. In other words, there will be savings, a certain proportion of current income unconsumed, no matter what the interest rate, as explained on page 373.

Second, critics question the effectiveness of the interest rate in governing the volume of savings actually put to work, or invested. Some minimize the importance of interest as a factor in businessmen's calculations. A businessman will invest, regardless of a high interest rate, if he believes consumers' demand for his product, and consequently his returns, will be high. Low interest rates will not tempt him to invest when he fears returns will be small.

Others who do not believe in the effectiveness of interest as a regulator of investment stress the possibility that when interest rates become quite low, savers may elect to hold their savings in liquid form. In other words, a low interest rate will not compensate savers for losing the advantages of liquidity.

Regardless of the differing explanations of why the interest rates do

not perform the role assigned to them by classical economists, these critics agree that there is no assurance that the "market will be cleared," that is, that all savings will be invested.

This possible failure to invest all that is saved, in the view of the many modern economists influenced by J. M. Keynes, is largely responsible for business depressions.²

More will be said about the flow of savings into the investment in Chap. 28 on business cycles. Here, it will suffice to summarize the view of this problem as presented in the preceding paragraphs:

1. The flow of income into savings is influenced much more by people's habits and government policy than by the interest rates.
2. The interest rate does not equate savings and investment; therefore
3. Savings may not all be invested.

The Rate of Interest. The modern critics have been more successful in destroying the older theory of the rate of interest than in erecting a new one. It is perhaps best to say that demand for capital is largely determined by its *expected* marginal productivity. This, especially because it is a matter of estimates and guesses as to the future, is shifting and unstable, inhibiting the establishment of equilibrium. On the other side, the supply of capital for investment is influenced by the liquidity preference of owners of fluid assets, the supply of money, and the supply of savings. The rate of interest that is the resultant of the interaction of these factors (all of which are strongly influenced by government policy) need not necessarily be the one which equates the amount of capital entrepreneurs want to invest with the quantity of savings available for investment.

INTEREST RATES

Money, Bank Credit, and Interest Rates. Frequently the statement is made that an increase in the volume of money and credit lowers interest rates and vice versa. What are the effects of changes in money on bank credit and, in turn, the effects on interest rates? Recalling the discussion of Chaps. 13 and 14, we note that an increase of reserves makes possible but does not necessarily cause an increase of bank credit—at least not immediately. In reverse, however, a reduction of reserves, such as through Federal reserve open-market operations, will reduce bank credit, particularly if the member banks do not have reserves above minimum requirements.

² Paradoxically, according to the Keynesian argument, the very failure to invest all savings so reduces income that ultimately the surplus above the amount needed for consumption becomes very small; savings are thus brought down to equality with investment, and equilibrium is attained. But this may be an equilibrium at a very low level of business activity.

In order to note the effects of potential or actual changes in bank credit on interest rates, it is necessary to analyze the situation in terms of the supply and demand for loanable funds. The first effect of a distinct increase in unused bank deposits is a reduction of interest rates on high-grade loans and bonds, and if this is followed by an increase of business activity, the demand for funds will rise, and later interest rates will go up. If, still later, the upward surge of business reaches the boom stage, interest rates will rise sharply. When a recession occurs, it is followed by a decline of interest rates on choice loans as the demand for funds recedes. Thus variations in bank credit have certain relationships to *short-term* variations in interest rates. The degree to which such changes are related as to cause and effect and the degree to which they are merely the results of the ups and downs of business cannot be discussed fully here.

There remains the question of whether created bank credit is capital. Clearly it is to the borrower, for it is as useful to him as the savings of a bondholder. But to the economy it is not capital. The more important question is, "Does created bank credit make possible a net addition to the physical capital, productive or consumptive, of our country?" The answer to this is influenced by whether the productive equipment of the economy is being fully utilized. During both wars or booms as in 1919 to 1920 or 1945 to 1948, when production was as great as our resources permitted, increased bank credit raised prices, and those whose dollar incomes did not rise so rapidly as the cost of living were able to buy less.

How this process takes place was well illustrated during the Second World War. Interest rates were low, held down by public policy (on the part of the Treasury and our central bank, the Federal Reserve System), which had the effect that when government and business demands for funds exceeded money savings of individuals and businesses, the difference was made up by the expansion of bank credit. This expansion of the money supply enabled government and business to command labor and materials, some of whose products would have otherwise gone into consumption goods and services. Holding down output of the latter while money supply increased forced savings from those whose dollar incomes advanced less rapidly than did the cost of living, though they did not own what they had saved. Nevertheless, the essence of saving took place, for resources were released by the reduced consumption which were then hired by those obtaining the enlarged bank credit. Under these circumstances, the increased amount of bank credit led to an increase in capital and was the means of transferring the forced savings of certain classes into the hands of the banks' borrowers. Thus forced saving created capital, much of which, of course, was wasted in the war.

In contrast, if our productive resources are not fully utilized, as from 1930 to 1941, an increase of money or credit, *if accompanied by an increase of production*, does not necessarily force savings. In such situations, the rise in the price level should be minor. Furthermore, if the increase of money or credit is the means of putting our resources to work, such capital formation as may result does not come out of savings. It comes out of the increase in production, an increased production which, under the assumption laid down, would not have taken place otherwise. In such circumstances an increase of money and credit makes for capital formation.

Variations in Short- and Long-term Rates. Short-term interest rates in the important *money markets* for loans for which the element of risk is small show from time to time very marked variations, caused by changes in the degree of hopefulness of businessmen, speculators, and the public in general toward future prices and future business profits. This may be illustrated by comparing short-term rates for certain kinds of highly safe loans in large amounts in New York in April, 1929, with rates for the same kinds of loans in September, 1932, in January, 1940, and in August, 1947, as shown below.

TABLE 34. INTEREST RATES ON SHORT-TERM LOANS, 1929-1947

Item	Kinds of loans	Rate of per cent per year			
		April, 1929	September, 1932	January, 1940	August, 1947
1	Loans secured by prime commercial paper.....	6	2½	¼-⅝	1
2	Prime bankers' acceptances.....	5½	¾	⅞	1
3	Time loans amply secured by stock and bond collateral.....	9	1½	1¼	
4	Call loans amply secured by stock and bond collateral.....	10	2	1.00	1¾
5	U. S. Treasury notes, three to six months.....	.....	⅓ ₁₀₀	⅔ ₁₀₀	¾

The explanation of these differences is that in April, 1929, the public in general was optimistic and expected large future profits from investments—that is, large marginal productivity—and bank reserves were so low that banks hesitated to lend further for any purpose. For all the kinds of loans above listed, the risk element is so low as to be practically absent. But in April, 1929, the demand for funds where there was

large risk was so great and had been so fully taken care of that there was a scarcity of funds available for even safe loans by banks. This resulted in high rates for short-term loans of greatest safety. In September, 1932, in contrast, the public was very pessimistic about possible profits from investments—that is, it expected low marginal productivity—and bank funds were sufficiently ample to cause banks to be willing to offer low rates, provided the security was unquestionable *and the loan very liquid*, that is, capable of being quickly turned into cash.

In 1940, business prospects were better and the total amount of bank loans outstanding was higher, but this time the supply of bank credit was tremendous, due to the "easy-money" policy of the preceding six years, the policy of maintaining bank reserves at a high level. Thus supply had been expanded enough to outrun a somewhat increased demand. The postwar rise in interest rates was due to a great demand for capital because of the high level of business activity and to a slight tightening of credit on the part of the Federal Reserve Board in order to check inflation.

Rates on long-term loans do not vary by any means as much as those on highly safe and extremely liquid short-term loans, but they are also affected by the general outlook toward a rising or falling general level of prices. A selected group of interest and discount rates and bond yields for comparatively safe investments, with one exception of long-term character, are shown in Table 35.

The much smaller rise in interest rates on government than on industrial bonds from 1930 to 1932 will be noted. The reason was that in 1932 investors were afraid of any kind of investment except the safest and most liquid, among which are United States government bonds. There are three elements considered in making either loans or investments. These are (1) yield, (2) safety, (3) liquidity. In 1932, investors were so much afraid of lack of safety and liquidity that they were willing to take comparatively low yields when they considered the loans absolutely safe and highly liquid. For loans and investments of a more questionable character the yields were greater than were the ones attainable in 1930 or before. Industrial bonds yielded $1\frac{1}{2}$ per cent more in 1932 than in 1930. This was because investors had less faith in their safety in 1932 than in 1930. The yields on bonds classed as medium and low grade were in 1933 much above the yields on the same bonds in 1930, because faith in them had much declined since. Expected marginal productivity from the use of capital was less in 1933 than in 1930, and so people were willing to take lower interest rates on loaned funds where risk was not considered high; but fear of loss was so much greater that high nominal yields could be secured where the security was not of a high grade. As

TABLE 35. BOND RATES AND YIELDS AND MONEY RATES, 1930-1947

Year or quarter	United States government bond yields			Industrial bond yields	Rates on prime commer- cial paper (4-6 months)	Federal reserve bank discount rates, New York
	Partially tax- exempt bonds	Fully taxable bonds				
		7-9 years	15 years and over			
1930	3.29	....	....	5.25	3.59	2 -4½
1931	3.34	....	....	6.08	2.63	1½-3½
1932	3.68	....	....	6.71	2.73	2½-3½
1933	3.31	....	....	5.34	1.72	2 -3½
1934	3.12	....	....	4.52	1.02	1½-2
1935	2.79	....	....	4.02	0.76	1½
1936	2.65	....	....	3.50	0.75	1½
1937	2.68	....	....	3.55	0.95	1 -1½
1938	2.56	....	....	3.50	0.81	1
1939	2.36	....	....	3.30	0.59	1
1940	2.21	....	....	3.10	0.56	1
1941	2.05	....	....	2.95	0.54	1
1942	2.09	1.93	2.46	2.96	0.66	1
1943	1.98	1.96	2.47	2.85	0.69	1
1944	1.92	1.94	2.48	2.80	0.73	1
1945	1.66	1.60	2.37	2.68	0.75	1
1946:						
Jan.-Mar.	....	1.29	2.14	2.55	0.75	1
Apr.-June	....	1.42	2.14	2.59	0.75	1
July-Sept.	....	1.50	2.23	2.60	0.80	1
Oct.-Dec.	....	1.59	2.25	2.66	0.94	1
1947:						
Jan.-Mar.	....	1.54	2.20	2.62	1.00	1
Apr.-June	....	1.54	2.20	2.60	1.00	1
July-Sept.	....	1.55	2.24	2.64	1.02	1
Oct.-Dec.	....	1.70	2.34	2.84	1.10	1

SOURCE: U.S. Department of Agriculture, Bureau of Agricultural Economics, *Agricultural Finance Review*, Vol. 10, November, 1947, p. 144.

the expected rate of pure interest was lower in 1933, compensation for risk was the large element where high nominal rates prevailed.

The decline in private-bond interest rates since 1933 reflects the returned confidence in their safety and liquidity, and as compared to 1930, a probably lower expectation of marginal productivity now than in that year. The great flood of wartime savings, to some extent forced,

TABLE 36. SOURCES AND USES OF GROSS SAVINGS, 1929-1946
(Millions of dollars)

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947
Gross private saving.....	15,528	11,156	8,357	2,760	2,728	5,591	7,941	13,326	10,817	8,910	11,759	15,039	21,828	40,209	46,567	54,657	47,853	25,903	24,852
Personal saving.....	3,723	2,899	1,824	-1,389	-1,181	-247	1,758	5,802	3,934	952	2,701	3,691	9,760	25,362	29,991	35,594	29,014	14,758	8,822
Undistributed corporate profits.....	2,597	-3,045	-5,381	-5,998	-2,428	-1,619	-613	-294	-8	-906	1,209	2,398	4,921	5,136	5,886	5,239	4,174	6,925	11,195
Corporate inventory valuation adjustment.....	472	3,260	2,414	1,047	-2,143	-625	-227	-738	-31	963	-714	-148	-2,617	-824	-824	-355	-533	-4,689	-5,075
Business depreciation charges.....	7,374	7,475	7,307	6,776	6,433	6,351	6,401	6,430	6,658	6,710	6,895	7,088	7,686	8,471	9,212	10,256	10,356	8,675	10,275
Institutional depreciation.....	179	178	176	174	175	175	176	177	180	184	187	190	192	195	197	200	201	200	209
Accidental damage to fixed business capital.....	413	389	351	329	275	237	236	381	304	387	222	246	273	484	399	374	384	404	557
Capital outlay charged to current expense.....	850	705	478	384	362	455	556	696	830	711	797	966	1,143	785	777	943	1,144	1,761	2,262
Excess of wage accruals over disbursements.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	209	-193	14	-30	0
Excess of wage accruals over disbursements.....	-80	-705	1,188	1,437	1,235	864	-346	862	-1,050	-91	462	658	470	1,050	720	2,599	3,099	-2,101	-3,389
Statistical discrepancy.....	16,595	10,899	5,559	1,055	1,456	3,236	6,092	10,447	11,502	7,420	9,892	14,492	18,335	9,123	2,346	3,559	8,304	29,355	38,929
Gross investment.....	15,824	10,209	5,362	886	1,306	2,807	6,146	10,540	11,440	6,311	9,004	12,983	17,211	9,330	4,591	5,658	9,058	24,582	30,031
Net foreign investment.....	771	690	197	169	150	429	-54	-93	62	1,109	888	1,509	1,124	-207	-2,245	-2,099	754	4,773	8,898
Government deficit (+) or surplus (-) on income and product transactions.....	-1,067	257	2,798	1,705	1,272	2,355	1,849	2,879	-685	1,490	1,867	547	3,493	31,086	44,221	51,098	39,549	-3,452	-14,077
Federal.....	-1,185	-276	2,093	1,465	1,310	2,850	2,538	3,475	176	1,960	2,213	1,409	4,636	32,951	46,635	53,582	41,819	-2,255	-12,999
State and local.....	118	533	705	240	-38	-495	-689	-596	-861	-470	-346	-862	-1,396	-1,865	-2,414	-2,484	-2,270	-1,197	-1,078

SOURCE: Survey of Current Business, National Income Supplement, July, 1947, Table 5. *Ibid.*, July, 1948, Table 5.

also meant that there was a much greater supply of loanable capital available than ever before.

The lower government bond rate also reflects the same thing.

Bank Rates on Small Loans Relatively Stable. Commercial banks do not continuously adjust upward and downward their interest rates on small loans as rates change in the money markets, which are more sensitive to all influences. In fact, relatively small loans by all banks and most kinds of loans to general customers by small banks are made at uniform customary rates, which are seldom changed. Where the risk is too great to be covered by such a rate, the loan is simply refused. Of such a customary rate a large part is for elements other than pure interest. This rate, however, is higher in regions where capital is scarce and risk in general great than in regions where savings are more plentiful and risk is less. In our country interest rates have always been higher in the relatively undeveloped and capital-poor South and West, as compared to the more settled and wealthier Northeast. In June, 1947, the interest rates charged by banks were on the average 1.83 in New York, 2.44 in seven other Northern and Eastern cities, and 2.95 in eleven Southern and Western cities.

STATISTICS ON SAVINGS AND INVESTMENTS

Table 36 will give some body to the abstract discussion of savings and investment in the preceding pages. One or two significant points should be noted. Gross private saving equals gross investment plus the government deficit or minus the government surplus. A deficit, incidentally, is shown as a plus, while a surplus is shown as a minus, because a government deficit in effect absorbs savings, while a surplus adds to them. Thus when there is a surplus, gross investment equals gross private saving plus the surplus as in 1929 or 1946.

In the years of deep depression, from 1932 through 1934, individuals and corporations dug into their savings. It is also notable that in those years depreciation far exceeded gross private domestic investment, which meant that the nation's physical productive plant was not kept up, that instead of there being *capital formation*, which results from net additions to the nation's stock of capital, there were reductions. Nor did the government's additions to capital in those years compensate for the reduction in private capital. This is shown graphically in Fig. 50 in Chap. 28.

The size of government deficits during the war years is paralleled by the enormous savings of the same period and should recall the discussion of forced savings on page 374. (Parallelisms between investment and the state of business activity are discussed in Chap. 28.)

Questions and Problems

1. Distinguish clearly five different usages of the word *capital*.
2. Distinguish between gross interest and pure interest, and show why the former is often much greater than the latter. Distinguish the meanings of *imputed* interest and *contract* interest.
3. Point out the weaknesses of the abstinence theory of interest.
4. Explain the marginal-productivity theory of interest.
5. How can savings be forced?
6. Does interest stimulate savings?
7. Are savings always turned into capital? Discuss.
8. How do changes in the amount of money or of bank credit affect the rate of interest on borrowed funds?
9. Distinguish between the "older" and "newer" views on how interest rates are established.
10. Compare interest rates on several types of credit instruments on April, 1929, September, 1932, January, 1940, and August, 1947, and account for the differences.
11. Would people save if they had to pay banks interest to keep their money for them?

Suggested Readings

1. F. W. Taussig, *Principles of Economics* (1939), Vol. II, Chaps. 38-40 and 47, presents the older view of the theory of interest.
2. A. H. Hansen, *Full Recovery or Stagnation* (1938), Chap. 1, contains an excellent summary of the views of J. M. Keynes. The "new" theories are also well presented in L. Tarshis's *Elements of Economics* (1947), Paul Samuelson's *Economics* (1948), and H. Gordon Hayes's *Spending, Saving and Employment* (1945), Chap. IV.
3. O. L. Altman, *Savings, Investment and National Income*, TNEC Monograph No. 7; discusses the quantity of savings and their flow into investment.

CHAPTER 17

LAND RETURNS AND LAND VALUES

An abundant supply of rich natural resources, or land, as all such resources have been commonly designated in economics, is a basic necessity for a high standard of living. Though individual persons, and even nations, may have a high standard of living without being rich in natural resources, they can do so only through trade directly or indirectly with those who are well provided therewith. Most of the poor nations of the earth are poor largely because of poverty in natural resources, or land, in proportion to their populations. The ownership of land in the sense of natural resources should be expected, therefore, to be an important source of income. How important it is and by what laws the receipt of income from this ownership is governed are the subjects which will receive our attention in the present chapter.

The laws governing the receipt of income from land were the subject of much intense interest and study by the earliest economists. The French physiocrats, who preceded Adam Smith by several decades and who are sometimes considered the founders of economics as a science, gave a large part of their attention to the nature of income from land ownership. The fame of David Ricardo rests in no small degree on his exposition of the laws of rent, or income from the ownership of land, as presented in his *Principles of Political Economy and Taxation*, published in 1817. This concern with income from land continued throughout the nineteenth century. An American writer, Henry George, won enduring fame through a book, *Progress and Poverty*, published in 1879, the major conclusions of which are based on the nature of income from land. He concluded that, because of the peculiar nature of such income, most of our social ills could be cured by a "single tax"—by which only land, as a gift of nature, would be taxed; all taxes on all improvements made on land and all other taxes would be abolished. These doctrines have but few supporters today, but the tremendous public interest aroused by George's writings was of great importance in stimulating the study of economic problems.

In recent years, other aspects of the study of economics have properly attracted more attention than the nature and treatment of income from land. Nevertheless, no understanding of our economic system as a whole

is possible without an understanding of the nature of such income, including both its peculiarities and the claims in regard to it which are sometimes made, but which are not valid. Students interested in agricultural welfare certainly cannot overlook the factors governing the income from land and land values. This subject we shall consider in the following order: (1) explanation of the Ricardian theory of rent; (2) criticisms of the Ricardian theory; (3) facts concerning land values and incomes received from land in the United States.

THE RICARDIAN THEORY OF RENT

Commercial and Economic Rent. Rent in the current language of business is any payment for the use of any durable good, regardless of whether such durable good be land, a building, a suit of clothes, furniture, a typewriter, or other object. Rent in this sense we shall call *commercial rent*, which in its final analysis contains much wages and interest. Goods for which commercial rent is paid are in large part man-made, and their qualities of value are in large part the result of labor for which wages are paid. Although we have said that commercial rent is paid for the use of durable goods, some of them are durable only in the sense that they are not completely consumed during the period for which they are rented. Many of them, or parts of them, gradually wear out, and the rent paid for their use is in part a gradual repayment to the owner for the original labor cost of production and the many labor costs connected with their maintenance and management. In addition, such rent includes interest on various costs advanced by the owner. Compensation for risk is also included, but this simply means that, whereas sufficient rent is not paid for some goods to repay such costs as are mentioned above, the average rent tends in the long run to be raised sufficiently to make up for these losses. In other words, the payment for risk is, in the final analysis, largely payment for labor and interest on those units of the product which are not sold for enough to pay for themselves. Commercial rent, therefore, can be resolved to a large extent into payments, indirectly and finally, for wages and interest. It also consists in part, and in some cases largely, of payments for economic rent, which we shall next consider.

Economic rent is a form of income distinct from wages and interest and refers to income received from the ownership of natural resources or site value of land. It does not include charges for the use, upkeep, and depreciation of man-made improvements. It was economic rent to which Ricardo had reference in his theory of rent, and with it we are especially concerned in this chapter. Ricardo defined economic rent, or what he designated merely as rent, as "that compensation which is paid to the owner of land for the use of its original and indestructible powers."

Commercial and economic rent are not always easy to distinguish in practice, as is true of many other things which are essentially different. In some cases they are largely the same, that is, commercial rent may consist largely of economic rent. In other cases, however, commercial rent, even for farm land, consists to but a slight degree (or not at all) of "compensation to the owner of the land for the use of its original and indestructible powers." It should be clearly noted that economic rent accrues to a landowner who operates his own land just as truly as though he had rented it to a tenant. In the same manner as the person who employs himself may be said to receive imputed wages for his own labor and imputed interest for the use of his own capital in his own business, he may receive economic rent from his own use of natural resources owned by him.

How Economic Rent Arises. In the explanation of economic rent and how it arises, the Ricardian theory emphasizes the differences in the productive capacity of different units of land: different pieces of farm land, different iron deposits, different stands of virgin timber, or different fishing banks. As population grows, there comes to be a distinct shortage of the better grades of land; and, as it becomes necessary to use the poorer land, there arises a surplus return to the better land, called *economic rent*.

A simplified illustration will clarify the above statements. Suppose that a frontier community is established in an untimbered spot in a region of ample rainfall where there is but a limited amount of good land easily put into cultivation. To provide themselves with food, the pioneers will till the nearby land. As the community grows with the coming of more families and the natural increase from the high birth rate of pioneer people, the food supply must be increased. If this is attempted by putting more effort into the tilling of the land already in use, the operation of the law of diminishing returns is faced. The total production will be increased, but the added labor on the land soon will not bring forth a proportional increase in output. If, on the other hand, new land is brought into production, it will be less desirable. It may be less conveniently located or the soil may be less productive. Certainly any group will try to utilize first the most productive natural resources, with due consideration of the then available transportation facilities. Whether production be increased by intensive farming or tilling additional land, continued applications of effort will not be rewarded with a corresponding increase in product. The added units of product are obtained only at higher production costs. As population grows, this tendency becomes more pronounced. The first applications of labor to good land yield higher returns than the later more intensive applications. Yet these lower cost units of product are just as valuable as the

higher cost units, as is shown by the fact that in advanced communities, where goods are bought and sold, the high-cost and the low-cost units of product will sell for the same price. This price in the long run tends to equal the cost of producing the higher cost units of output, the production of which was undertaken only when the expansion of demand raised the price to the point that the production of high-cost units was justified. The producer of low-cost units on the better land finds that he obtains a surplus income over and above his costs of labor and interest on improvements, including such indirect costs of labor as are sustained through depreciation of machinery and other improvements. This surplus is economic rent. Because of this economic rent, the owner of land is able to charge commercial rent for its use by others. On the basis of it, he assigns a value to his land.

Factors Governing Wages and Economic Rent Further Illustrated.

Another example of how economic rent arises will be given, and this at the same time will illustrate the marginal-productivity theory of wage determination. Let us suppose that a Mr. Jones owns 1,000 acres of good farming land of uniform quality, capable of crop production with but few expenses for clearing or improvement. If he attempted to farm the entire 1,000 acres himself, let us suppose that his output of product would amount to 4,000 units. A unit may be regarded as 1 bushel of wheat, or $1\frac{1}{2}$ bushels of corn, or other amounts of product having about the same value. Of course, he will need equipment. Let us suppose, however, that he works alone and that the cost for a year of maintenance and depreciation of equipment, including interest and depreciation on all improvements made on the land, will be the value of 1,700 units of product. Accordingly, any cost of the land being disregarded, the net that he would receive for his labor would be the difference between 4,000 and 1,700, or 2,300 units of product. If he hires one man to assist him, let us suppose that the two together can produce 6,500 units, with costs for equipment or saved capital for the two amounting to 2,400 units, the net product for the two men being 4,100 units. The additional man, therefore, added 1,800 net units of product to the 2,300 of the first man. Let us suppose a third man to be added, and that his net addition to the product in excess of additional equipment or capital costs would be 1,400 units. Let us suppose a fourth man added with a net addition, to the product, of 1,000 units. Let us suppose a fifth would add 850 units; a sixth, 650 units; a seventh, 500 units. Because of the law of diminishing returns, the tendency would be for each additional man beyond a certain number to add less than the product per man of fewer men, or of the last added man, the word *last* referring to number, not time. If the population or labor situation at this time was such that seven men were eager to get jobs, the employer could pay the seventh man not more

than the value of 500 units without loss from hiring him, because that would be the full value of his addition to the product. If Mr. Jones had a number of neighbors in substantially the same situation as himself, and he attempted to pay the seventh man only the value of 200 units, that man would not long remain in his employment. Competition among the various employers to whom his services would have a value of about 500 units would enable him to secure very nearly, if not fully, that wage. On the other hand, if any one of the seven men insisted on receiving a wage of 1,000 units, he probably would not be employed, because the value to the employer of the seventh man would be only 500 units, and any one of the seven is in fact the seventh. The normal situation would be for wages to settle at a figure at which all could be employed, and under the assumed conditions this would result in a wage of about 500 units to each of the men hired. Assuming Mr. Jones also considers his own labor to be worth 500 units, the total wage bill for seven men would be 3,500 units. But the total production of the seven, *in excess of capital and equipment costs* (other than for land), would be as shown below:

Man	Units
First	2,300
Second	1,800
Third	1,400
Fourth	1,000
Fifth	850
Sixth	650
Seventh	500
Total	8,500

The subtraction of the total labor cost of 3,500 units from the 8,500 units which remain after paying for use of saved capital and other expenses leaves 5,000 units, which would be assigned to the land. This constitutes economic rent. This is 5 units for each of the 1,000 acres. If the product has a market value of \$1 per unit, the economic rent will be \$5 per acre. If this should be regarded as the normal net value of the product, and competitors for the ownership of this land would be willing to invest money at 5 per cent interest, the land would have a value of \$100 per acre. Rent has been exaggerated above in amount to emphasize the principle.

Rent and the Intensive Margin. Our understanding of how economic rent arises will be helped by an understanding of how the intensive and extensive margins of cultivation are arrived at. When, through the intensive use of land, production is pushed farther and farther beyond the point where diminishing returns began, the question arises: How far will this intensive use be pushed? As long as the labor and the capital costs necessary to bring forth additional product are less than the price for

which this added product will sell, the farmer will gain by more intensive production. The farmer will find a point where added costs and added value of product from more intensive cultivation are approximately equal. This point is the intensive margin of cultivation. If the price of the product is raised by an expansion of the demand, or if hired labor becomes cheaper, the intensive margin of cultivation can be extended at less output per unit of labor, and hence those units of product produced at the old intensive margin will be enabled to yield rent.

All units of product produced at a labor and capital cost (including imputed wages and interest) less than the selling price yield either economic rent or pure profit. Insofar as the representative farmer may secure this excess return from the better land, the excess product is assigned to the land as economic rent. The exceptional farmer who still has a surplus after paying or allowing for the usual economic rent, as well as all wages and interest, may be said to secure a pure profit.

Rent and the Extensive Margin. If more land is brought into cultivation, it is ordinarily less desirable land and the output per unit of labor on such less desirable land is less than on the land previously utilized. When will new poorer lands be brought into cultivation? New poorer land will be opened when the price of the product or products rises sufficiently or the cost of labor declines sufficiently to warrant the undertaking of production with less output per unit of marginal labor. New lands will be brought in until, for the output on these lands, the cost of production, disregarding any costs for use of land, is approximately equal to the price of the products. This point in the use of poorer land is the extensive margin of cultivation. In other words, the extensive margin of cultivation is that point in the use of poorer lands where it just pays to use them without paying for their use. All of the goods produced on the better land at lower costs for labor and saved capital yield a surplus or economic rent.

More intensive cultivation on the better lands and the extension of cultivation to poorer lands will be carried on in such relation to each other that the costs of the marginal units at the extensive and intensive margins are approximately equal. A rise in price of the product or decline in wages brings about an extension of the intensive and extensive margins simultaneously.

Economic Rent Further Defined. Land returns or economic rent may be defined as the surplus return accruing to those units of land whose product is produced at average labor and capital costs less than those existing at the intensive and extensive margins. At these margins the value of the product will tend to be just sufficient to cover wages and interest on saved capital, including, of course, the indirect wages and interest which are paid for such items as seed and depreciation of equip-

ment. But the wage rate and interest rate will be the same for all parts of the output. Accordingly, the better lands will yield to the owners a surplus, which will be assignable to the land and which we designate *economic rent*.

Submarginal Production. In response to a price increase or its expectation, either or both of the intensive and extensive margins may be extended too far. The tremendous decline in demand during the Great Depression demonstrated that for that time, in many cases, the extensive margin had been extended too far and that, in some types of agricultural production at least, the intensive margin had also been extended too far. The amount of land which appeared to be too intensively or extensively cultivated was the greater because the decline in demand was accompanied by improvements in methods of production and the opening of new lands abroad. The term *submarginal* is applied to land of this sort, on which the costs of production, even exclusive of any payments for land use, exceed the returns secured for what is grown on the land.

The great increase in demand during and after the Second World War, and the reduction in supplies from outside the United States, pushed the prices of agricultural commodities up so high that much land which had been considered submarginal during the thirties moved out of that category. The total amount of submarginal land in cultivation had already been reduced by the government policy of buying it up for conversion into forest land, by encouraging owners to turn other parts of it into grazing land, or by paying farmers to improve it through erosion control, liming, and fertilization.

The extent of the submarginal-land problem during the Great Depression illustrates how slow is the response of agricultural production to price. Once cultivation has been extended in anticipation of returns which do not materialize, producers hang on because they are unwilling to sacrifice the sunk capital which would be lost by contracting production, and, in a time of depression, they have no alternative to turn to.

If European and Asiatic farm production is restored to levels existing before the Second World War and domestic demand falls from its present height, lands which it now pays to cultivate may, especially in the case of export crops like wheat, become submarginal. When culture is extended to or maintained on lands below the intensive or extensive margins, the results are dire for the producers of the added units and unfavorable for all producers in those branches of production. The excess production forces down prices so that some producers, who found formerly that the price covered their costs, now produce at a loss. Other units of production formerly yielding a surplus over labor and saved capital costs, or economic rent, now receive a price which covers only these

costs exclusive of costs for the use of land. Consequently, land which formerly had value is made valueless.

In the foregoing discussion we have assumed that with an increasing demand for products the increase in the use of land would be to poorer lands. This will tend to be true insofar as the earlier users of land selected their land wisely. Nevertheless, sometimes better lands are brought into use later, and hence land which previously was above the margin may be forced into the submarginal class.

Rent and Agricultural Improvement. According to the Ricardian theory of rent, we should expect the return to land to increase with the growth of population. Such is the case in general, though technical improvements of various kinds have done much to offset this tendency.

In Chaps. 2 and 3 the effects produced upon European agriculture by the opening of the New World were considered. The settling of the Ohio Valley had a similar effect on the Atlantic coast section, particularly on New England. In both cases the bringing in of new lands brought not higher but lower production costs, even with adjustment for transportation charges over longer distances. Since this additional production came at lower costs, the net return to the land already in cultivation was lowered and as a result much of the land was withdrawn from cultivation or cultivated less intensively. This was particularly true of New England, where much land that was cropped a hundred years ago is pasture or has reverted to forest.

Turning to improvement in crops, cropping methods, and livestock breeds, we find again that increased production may actually take place at less cost per unit of product. Improved wheat varieties will yield from 5 to 10 bushels per acre more than old varieties, with the same tillage costs. Disease-resisting varieties, whether they be grains or fruits, bring forth a greater harvest, year in and year out, than strains subject to disease.

What effect do these improvements have on the return to land? If improvement takes place at a rate which just offsets the tendency for the additional product required by a growing population to be produced at higher costs, the rent of land as a whole should remain unchanged. The rent will be less than it would have been if the improvement had not taken place. If improvement is at a very rapid rate, as has been true since 1910, or population increases but slowly, it is possible that the new methods will increase the output more rapidly than the population grows, forcing prices downward to the extent that both the intensive and extensive margins will have to be contracted. If the improvement has been one in transportation, irrigation, or drainage, so that new, very fertile lands are opened to farming, the land which will be forced out of cultiva-

tion may be some of that first tilled decades before, for by the process of improvement this old land has become submarginal.

If the landowner does not benefit by improvements, who does? Obviously the consumer gains, for he obtains his food and clothing at lower prices than would otherwise prevail. Farmers as consumers of farm products will gain. If the improvements enable fewer farmers to supply the same output of products, and the farmers forced off submarginal land enter urban industry to the extent of cheapening the cost of urban products, farmers may gain also as consumers of nonagricultural products.

Farmers as landlords will not, in the long run, gain from improvements, but individual farmers as entrepreneurs do have the opportunity to gain. The individual farmer who seizes the advantage of an improved variety of wheat will find his per bushel costs are cut, whereas the effect of his higher yields, and those of the few other farsighted farmers, on the price will be negligible. As more farmers adopt the improvement the advantage to the farmer merely as a seller declines until it is nonexistent, though as a consumer he will continue to benefit. The farmer who builds up his land by a proper crop rotation finds his costs to be less, relative to his gross income. Because of the slow adoption of this type of improvement, the advantage may remain with the foresighted farmer for some time. But this gain through foresightedness is not a return to the farmer as a landlord but as an entrepreneur. The gain is pure profit, not economic rent.

Urban Site Rents. The fundamental factor influencing the return to urban land is its location. It is true that, in order to prepare an urban site for use, outlays must be made for expensive street improvements, sewer installation, and other development costs, which are usually charged to the landowners in special assessments. Sometimes hills must be leveled, swamps filled, or other engineering projects undertaken to make the land really usable. Yet a well-located urban site may have a value far in excess of these costs and an annual return far in excess of interest on such improvement costs. This surplus return arises from the active demand for good sites and the limited number of lots which physically can exist in the desired location. Such returns for site value are economic rent.

Highest urban rents are secured for sites in the shopping and financial centers, where throngs of people congregate and pass. The demands for sites in such locations are so intense that fabulous sums are paid for ground rentals and leases. In the financial and favorite shopping and office-building districts of New York, bare land values alone run into hundreds of dollars per square foot. Lots 100 by 100 feet are valued at several millions of dollars. The explanation of value, as in the case of agricultural land, is surplus productivity. Tenants are willing to pay

higher rents here rather than go elsewhere, because higher incomes can be secured by the competent in such locations. Competition among tenants for locations governs the commercial rents, and these in turn cause economic rent and land values. The net returns from buildings in such locations tend to equal only interest rates on their cost. Surplus income is assigned to the land and capitalized into land values.

Site value is fickle, being brought about by a variety of popular attitudes of mind, which are subject to frequent and radical change. Such changes cause unexpected variations, both upward and downward, in economic rents and land values. A downtown section which was the center of activity twenty-five years ago may now be an outmoded section where rents and the value of lots have fallen, whereas values elsewhere have risen. Similarly, residential districts wax and wane. The development of apartment houses in a district makes it a less desirable section for one-family houses, though a greater demand for apartment locations will increase site values. Being too near a school decreases the value of residential lots, but being too far away has the same effect to an even greater degree. The opening of a boulevard to an outlying section raises the value of its lots, but, if the traffic becomes too heavy, that may make it a less desired residential section. All in all, location value is subject to many unforeseen and sometimes rapid changes.

Mine and Timber Rents. Mine and timber lands differ from farm and urban lands in that they furnish a less continuous income. Farmers may "mine" their soil, and of course a timber stand may be replaced by one grown by man. But the exhaustibility and the nonreproducible character of mineral and timber resources are more pronounced than those of farm lands and urban sites, and this is of considerable social consequence. The policy of our national government until recently was to turn these resources into private hands, where they have been largely wasted in the effort to realize a gain from them rapidly. Other critics of this procedure have laid emphasis on the undesirability of allowing a few privileged individuals to reap large profits from exhaustible resources and have urged that these should be exploited for the long-time advantage of the social group.

Especially since the Franklin Roosevelt administration the government has followed a policy of retaining the ownership of forest land, leasing the timber rights under careful supervision, so as to maintain the stands. Some of the private lumber companies are also beginning to explore the possibilities of reforestation. Several of the oil-producing states, notably Texas, regulate the flow from the wells, so that the largest possible quantity can be extracted, though at times this kind of control has been used for the purpose of raising prices through limiting the supply.

In the case of both mineral deposits and virgin timber, there exist wide

differences in the costs of production between individual units of the resource. Those fortunate enough to have rich and accessible ore deposits and high-grade timber near transportation will receive a large surplus return in the form of economic rent above costs of exploiting such resources. In the computation of the amount of this rent, however, it is necessary to deduct from the net returns an amount sufficient to return to the entrepreneurs their costs in sinking shafts or building transportation facilities, and other developmental costs, because when once the resource is exhausted, such outlays have no salable value. Also interest and taxes on past investment, though in a year they may not be striking in amount, grow to large sums when such property is held for a long period for future exploitation.

The Capitalization of Rent. Land values arise from the capitalization of the expected future income from that land. The market value of any given tract of land, therefore, depends on two factors, (1) the expected future income from it and (2) the rate of capitalization. Capitalization consists of assigning to the land, or other source of income, a principal value on which the income is interest. If the land of a given farm is expected to yield a return in excess of labor costs, seed, taxes, depreciation, interest on equipment, and all other operating costs, such expected excess return being estimated at \$6 per acre, then a value per acre is assigned to the land on which \$6 is considered interest. The assigned value, however, depends partly on the rate of interest which is expected. If the prospective buyer believes that he can secure other investments of equal safety and speculative possibilities to yield him 6 per cent but no more, he will offer for such land about \$100 per acre, \$6 being 6 per cent interest on \$100. If he believes that other investments of equal safety and speculative possibilities will yield about 3 per cent, he will be willing to pay \$200 per acre, \$6 being interest on \$200 at 3 per cent.

Different individuals of course see different possibilities of gain from the ownership of the same land. From the same farm, one person may anticipate a net income of \$6 per acre in excess of all costs other than the use of the land, whereas another may see less than half that probable net income. Furthermore, one person may consider that other possible investments yielding 6 per cent are equally as safe as is investment in a particular tract of land, whereas another may consider that no other investment yielding over 4 per cent is equally safe. The higher the expected net return and the lower the rate of capitalization by those persons most eager to own a particular tract of land, the higher will be its market price. What any given person, let us say *A*, with the highest estimate of value will pay will depend on what some other person *B*, an actual or potential bidder against him, will force him to pay. If *A* is an exceptionally capable farmer, he may be able under normal condi-

tions to pay more than anyone else would pay for a given farm, to pay usual wages, and to receive, in addition to the usual rate of interest on his investment, also a pure profit. If, however, *X* also wants a farm, but if he is an inefficient farmer, it will be quite impossible for him to pay the current land prices established by competent farmers bidding against each other for ownership, and to receive in returns the current rate of wages for labor and the current rate of interest on the market price of the land.

The Ricardian theory of rent in relation to land value, in brief, is that land values are fixed by the capitalization of the expected economic rent at the prevailing rate of interest. Without doubt this is true insofar as it is applicable. The Ricardian theory has been the subject of much criticism in recent years. The nature of this criticism will receive further attention later in this chapter. At this point we shall merely state that the dispute is concerned for the most part, not with the validity of doctrine that land values are fixed by the capitalization of the expected net return, but whether or not that net return represents to any large extent economic rent as we have explained it. The question is: To what extent is the net return which is capitalized a return for the use of "original and indestructible powers of the soil"? Here it will suffice to say that the expected return from farm lands with extensive improvements represents more than economic rent. It represents in varying degrees—and in general to a considerable extent—interest on saved capital. Furthermore, not only money returns, but certain elements of intangible income are considered in competition for the ownership of land. Of these matters we shall have more to say later.

Quasi Rents. Improvements on land are not made in the first instance unless it is believed that the income from such improvements will be sufficient to pay the current rate of pure interest on the cost of such improvements after paying for depreciation and other incidental expenses. Income from improvements, therefore, is not economic rent arising from original properties of the soil or location value. It is rather imputed interest on saved capital. Furthermore, if such expected income from improvements increases to considerably more than the regular rate of interest on the probable costs of making improvements, more improvements will be made and, because of the law of diminishing utility and principle of marginal vendibility in relation to price, income from all goods of that type will decline. In all these matters, therefore, improvements are different from land as a gift of nature, and the income from improvements is different from economic rent.

From one aspect in particular, however, income from such improvements is like income in the form of economic rent. "When free capital has been invested in a particular thing, its money value cannot as a rule

be ascertained except by capitalizing the net income which it will yield; and therefore the causes which govern it are likely to be akin in a greater or less degree to those which govern [economic] rents."¹

Because of the above similarity the term *quasi rent*, meaning "as if rent" or "like rent," has been applied by Alfred Marshall to "income derived from machines and other appliances of production made by man."

In discussing *quasi rent*, Marshall further says:

That which is rightly regarded as interest on "free" or "floating" capital, or on new investments of capital, is more properly treated as a sort of rent—a *Quasi rent*—on old investments of capital. And there is no sharp division between floating capital and that which has been "sunk" for a special branch of production, nor between new and old investments of capital; each group shades into the other gradually. And thus even the [economic] rent of land is seen, not as a thing by itself, but as the leading species of a large genus; though indeed it has peculiarities of its own which are of vital importance from the point of view of theory as well as practice.²

CRITICISMS OF THE RICARDIAN THEORY

Until the last quarter of the last century, Ricardo's explanation of land returns, with slight (if any) modifications, was generally accepted by economists. Since that time criticism of the Ricardian theory of rent has been growing, until today some economists of repute profess to have abandoned the theory altogether. We shall now consider some of these criticisms and then present the conclusions which appear to be correct to the authors of this book.

1. Effect of Improvements. In the study of land returns and land values, there has been a tendency to overlook the share played by improvements in contributing to what appear to be both land returns and values. Rarely was agricultural land ready for the plow, except in the plains regions. Expensive clearing, leveling, draining, irrigating, and fertilizing and soil-building programs have been financed out of people's savings. Taxes have built roads. In the case of mines and timber, preliminary prospecting work must be paid for. Transportation means must be provided, or the natural resources are valueless. Urban property bears a multitude of assessments, and new developments entail carrying costs. Some critics have gone so far as to include the sufferings of pioneer life as part of the cost of development. Others have compounded interest on the original speculative investment cost of property held for a rise in value as part of the cost of opening new lands—a practice of doubtful validity.

Thus far no comprehensive factual information has shown that all of

¹ Alfred Marshall, *Principles of Economics*, 8th ed., 1920, p. 74.

² *Ibid.*, p. 412.

land returns and land values can be assigned as a reward for opening new lands. This criticism points out, however, that we should consider as capital all the improvements and capital costs in land development.

2. Physical Merging of Capital and Land. Some critics have emphasized the fact that land cannot be separated physically from permanent improvements such as fertilizers or drainage systems, and that, therefore, no attempt should be made to distinguish between the return to land and the return to capital. These critics are emphasizing the physical aspects of the problem, whereas most economists now emphasize the value aspect of such problems. The question then arises: Are there distinct economic tendencies in the return to land and the return to capital?

3. Distinction between Returns to Land and to Capital. The preceding question raises again the whole problem of whether it is desirable to distinguish between land and capital for any purpose whatever. We have already given attention to that question in the chapter on Capital and Interest, in which the peculiarities of land were considered under the heads: (1) fixity in amount; (2) immobility and other natural qualities; (3) price determination. We shall here give this subject some further consideration.

If we look to the origin of land and capital there is an obvious distinction, but, if we look to their present economic characteristics, their marks of distinction are not so easily perceived. To the individual farmer there is no obvious distinction; for to him the acquisition of land is possible only by the accumulation of savings. He hopes to earn interest on his investment in land as well as on his investment in improvements and equipment. The decision as to whether land and "capital" should be distinguished from each other should be made, however, from the viewpoint of the economic system, for it is from this viewpoint that all problems of prices (such as land rent) must be analyzed. Taking this approach, we may compare differences in the returns to land and capital (including the long-run principles involved) from the following economic characteristics:

1. *Variability of Quantity.* Is the supply variable? The total quantity of land in the world is fixed for all practical purposes. Not much can be added by filling in along the edges of the continents. The amount of arable land is, however, extensible by irrigation, drainage, and leveling. Nevertheless, the quantity even of arable land can be changed very slowly in comparison with changes in capital. Therefore capital scarcity can be overcome by a nation as land scarcity cannot. Japan, Italy, Denmark, England, and Germany furnish good illustrations of this. All these nations are reasonably well provided with saved capital, some to the extent that interest rates are quite low. Nevertheless, wages and the standard of living are much lower in all of them than in this country,

because of the shortage of land in proportion to population. This is especially true of Japan and Italy.

More important even than the difficulty of expanding land resources is the near impossibility of expanding the supplies of certain minerals, as is evidenced by the concern regarding United States supplies of petroleum and high-grade iron ore. It is possible, however, that all such difficulties may be swept away through the possibilities of transmuting the elements that our recently acquired knowledge of how to split the atom has granted us.

Because of the limitation in the total quantity of certain natural resources, or at least of the better grades, a "surplus" accrues to the owners of these higher grades, or possibly even to the owner of any natural resource if its supply is sufficiently limited.

The ownership of capital goods, because theoretically at least, the supply can be indefinitely extended, should not afford a similar opportunity for obtaining this kind of surplus.

2. *Immobility and Extension.* The location of land as a gift of nature is fixed by nature. Savings when first saved may be placed in any location. The location of some saved capital may be changed at any time. A region short of saved capital may import it, but it cannot import land as a gift of nature or resources.

Another quality of land which is not duplicated by anything man-made is its *extension*, the fact that it is in two dimensions, that it provides space where men can live and work. In fact, some economists go so far as to say that this is the only quality which fundamentally distinguishes land from capital, its only characteristic which human effort and ingenuity cannot reproduce. But this appears too extreme and theoretical a view.

3. *Market Value and Production Cost.* Are the market values of land and of saved capital goods related to their respective production costs? At any particular time the value of any capital good or tract of land varies with its present and prospective earning power, being arrived at by capitalizing prospective earning power at the prevailing rate of interest. Therefore the value of a capital good may be less than its cost of production adjusted for depreciation. Since a capital good once constructed will not be immediately destroyed if it is not so productive as was anticipated, it is possible for the value of the relatively durable capital goods to remain indefinitely below the cost of production. Similarly, the value of capital goods may be at times above cost because of increased demand and because of the fact that saved capital cannot be brought into existence instantaneously.

Over a period of time there is a strong tendency, nevertheless, for the value of capital goods to equal their cost of production. Persons who conduct their affairs on business principles will not make extensive improve-

ments such as drainage, stump removal, and fertilization on land when they can see that such improvements are not adding enough to the value or output of the land to cover the cost of the improvements (including imputed interest on that cost). On the other hand, when the improving of land adds more to the net returns than the total cost for improvements, more land will be improved. Over a period of time the value of capital goods tends to equal their cost of production, adjusted for depreciation, even though at a particular time it may depart considerably from cost.

Land once brought into use will sell at a price determined by its present and prospective earning power. Land excluding improvements has no production cost. The value of land depends solely on its desirability, which is primarily a matter of earning power.

4. *Return as Interest on Cost.* As a corollary of the preceding point, we may ask the question: Does the return yield interest on the cost of production? At a particular time the return on the cost of capital goods may vary from a large loss to a large percentage of gain. But over a period of time there is a tendency for saved capital goods to yield interest on the costs of their production. On the other hand, land returns are not in any way related to interest on the costs of bringing this land into production. The valuation process in the case of land runs from earnings to value in the long run as well as in the short run.

5. *Conclusion.* From the preceding discussion, it should be apparent that the similarities between land and saved capital occur mostly in the short run and the differences in the long run. Though there are significant differences between them even in the short run, such differences are more numerous in the long run. Especially significant is the tendency for land returns and land values to rise with the passage of time if population increases, in contrast to the tendency for the value of capital goods to equal cost. The social significance to a nation of an abundance or a lack of fertile land or natural resources can hardly be overemphasized. In comparing land and saved capital, we may again use the analogy of day and night. Though they shade gradually into each other, they are essentially different.

4. **Is Economic Rent a Cost of Production Which Affects Price?**
Opportunity Cost. No part of the theory of rent as explained by Ricardo has led to more acrimonious discussion than his explanation of the relation between economic rent and the price of the product. At the time when Ricardo wrote, it was widely asserted by business and political leaders in England that the high price of grain then prevailing in that country was due to the high rent charged by English landlords. This Ricardo denied. He asserted: "Corn is not high because a rent is paid, but a rent is paid because corn is high." In general the causation process was explained as follows: Increased demand for grain required more in-

tensive cultivation and the spreading of cultivation to poorer lands. Farmers must hope to secure enough for their products to pay their costs of production. Therefore costs at the intensive and extensive margins tended in the long run to equal price. But rent was not a part of these marginal costs. Therefore it was not a price-determining cost. Grain would be no cheaper if landlords would forego the whole of their rents, though tenant farmers would gain and landlords would lose. Accordingly, the generalization was reached that (economic) rent was not a cost which affected price.

This broad generalization has been much disputed. The merchant considers rent, including economic rent, as much a cost which must be covered if he is to continue in business as his other costs. As all merchants must pay rent, would competition not result in lower prices if such rents did not have to be paid? How then can economic rent be any less a price-determining cost than other costs? These questions indicate in a general way the nature of the dispute.

The apparent contradiction between the Ricardian doctrine and the workings of everyday business is largely the result of attributing to Ricardo statements which he himself did not make. In the first place, Ricardo emphasized that by rent he meant only that which is paid for the use of the "original and indestructible powers of the soil," including location or site rent but not a return for improvements. The latter return, which economists now call interest, Ricardo called profits. Second, when he said that rent was not a cause of the price of corn he assumed a given demand, not only for corn as a particular grain, but for all products which were produced on land of the kind on which corn was produced. In brief, his point is that, given a certain demand for the use of land, economic rent is a result, and that prices of products would not be different if landowners did not charge occupants that part of the commercial rent which represents economic rent. In this position he was substantially correct.

The individual merchant realizes that he could sell more cheaply if he did not have to pay rent. He, therefore, asserts that he would do so. Assuming, however, that he had no more competition, it is very questionable whether he would. With a strong demand and little competition, the probabilities are that he would charge about all that the traffic would bear. Of course, if several possible new competitors could secure rent-free sites near the present merchant's location, where the demand for goods is so intense that high rents have resulted, and the present occupant of that location would at the same time have his rent removed, then competition would result in lower prices. But high rents for mercantile sites exist because of lack of sites to meet the demand. More competi-

tion cannot come without more sites, and there are no more sites in those locations.

Sites for one kind of business can, of course, be made available by the withdrawal of some other kind of business. This would leave more sites for the kind of business remaining, and with the same demand for the goods furnished by that kind of business there would be more competition, and both rents and prices would come down. The merchant would explain that prices were lower because of lower rents. They would in fact be lower because of more competition which the more abundant sites permitted.

An upstairs store on a busy city street advertises that "We sell cheaper because our rents are less," or to prospective purchasers of suits, "Walk upstairs and save \$10." The upstairs store may sell more cheaply, though it does not necessarily do so. Rents on the ground floor are higher; but the higher rents on the ground floor result either from the ability of stores in these locations to ask higher prices and still make sales, or from their ability to make more sales than can be made at the same prices by stores in other locations where rents are lower. If a store which is paying a high rent had its rent reduced without more competition, it is very questionable whether it would sell at lower prices.

The demand for land for one use affects the amount of land available for another use, and therefore the prices of goods resulting from that other use. In a congested downtown region in a large city, the demand for street-level locations for clothing and similar stores may reduce the street-level locations available for restaurants to the extent of causing higher prices for food in such restaurants. In such a case it would not be incorrect to say that part of the unusually high rent paid by the restaurant keeper tends to be added to the prices of the goods he sells. This, however, is not contradictory to the Ricardian doctrine.

The principle just illustrated has been stated in a generalized manner by saying that the part of rent paid for a given use which could be obtained if the land were devoted to some other use tends to be added to the price of the good for which the land is used. This is called an *opportunity cost*—that is, a cost based on the opportunity to use the land in some other way—and such opportunity cost tends in the long run to be added to price. Thus the opportunity to use land for wheat production, insofar as it results in less land being available for corn, will tend in the long run to decrease the amount of land devoted to corn and to increase the price of corn. This also has been expressed by saying that the part of the rent of land devoted to a particular kind of use which exists at the margin of substitution to another less intensive or lower use tends to be added to the price of the products for the production of which it is used.

Opportunity costs which are necessary to attract land from some other uses to the production of a particular good tend to be added to the price of the product for the production of which they are used. This statement is, however, quite consistent with the Ricardian doctrine because the opportunity cost arises from the price the public is willing to pay for one product, say wheat. If someone wants to use the land for corn, he must pay enough to get it away from wheat. This rent is a cost to the corn producer and enters into the price of corn, but it arose as a result of the price of wheat, and this ultimately, like other rents, is a result, not a cause, of price.

LAND INCOMES AND LAND VALUES IN THE UNITED STATES

How great are the returns from the ownership of land in the United States? How does income from land ownership compare in amount with incomes from other sources? What is the total market or imputed value of land as compared with the market or imputed value of saved capital? What has been the recent tendency of change in land values, especially farm-land values? Are there elements in the determination of farm-land values other than those mentioned in the preceding pages? What are the present indications in regard to such values in the future? To these questions we shall now give brief attention.

Land Income and Values Compared with Capital Income and Value.

Because of the intermingling of land and saved capital, no accurate segregation of land income and value from the income and value of saved capital is possible. Few estimates have been made in which such a segregation has been attempted. Among the most thoroughgoing estimates published is that of M. C. Rorty, made in 1933, but based upon values for the year 1926. He estimated that in 1926 there was 319 billion dollars' worth of privately owned natural and saved capital. Of that amount 78 billions was estimated to represent natural resources and 241 billions saved capital. The income from natural resources in 1926 was estimated at 4 billion dollars; that from saved capital at 13.6 billions, with an additional income of 1.5 billions from interest on government borrowings. The 4-billion-dollar estimated income from privately owned natural resources represented approximately 5 per cent of the national income for the year, as compared with 18 per cent of the national income received from the ownership of saved capital and 77 per cent from personal service, or wages (as the term is used in economics).

The division of privately owned land or natural resources by classes, with the values of each class and incomes received from each class as estimated by Rorty, is shown in Table 37.

Rorty's estimates of some of the classes of saved capital and of income received from them are of interest in comparison with these estimates of

TABLE 37. ESTIMATED CAPITAL VALUES AND INCOME FROM PRIVATELY OWNED LAND AND OTHER NATURAL RESOURCES IN THE UNITED STATES AS OF 1926

Use of lands	Capitalized value (million dollars)	Income or rental value (million dollars)
Farm lands and wood lots, less improvements (buildings, fencing, drainage, etc.).....	30,000	1,500
Land used for residential purposes.....	20,000	1,000
Land used for manufacturing purposes.....	3,000	150
Land (other than highways) used by railroads and other public service companies.....	4,500	230
Land used for commercial and miscellaneous purposes.....	14,000	700
Mineral, oil, and gas deposits (income or rentals include depletion allowances).....	4,200	280
Forests (incomes include depletion allowances)....	1,200	80
Water powers.....	1,300	80
Total.....	78,200	4,020

SOURCE: M. C. Rorty, "Does Capital Earn Too Much?," *The Christian Century*, April 12, 1933, p. 495.

land values and income from land. First, value of farm capital or improvements, excluding bare land and also residential buildings, was estimated at 24 billion dollars and the income from such capital at 1.4 billions. Second, value of all residential buildings, including farm residences, was estimated at 83 billion dollars and income from such buildings at 4.2 billions. It should be noted that this alone exceeded all natural resources in both value and income yield. Third, manufacturing capital, consisting of buildings, equipment, and inventory, but excluding land, was estimated at a value of 46 billion dollars and income from it at 2.8 billions. Fourth, capital value of railroads and other privately owned public-service companies, excluding land, was estimated at 51.5 billion dollars and income from such capital at 3 billions. Other classes were of less importance. Commercial and miscellaneous capital were combined and together exceeded farm capital in both value and income yielded.

Though Rorty himself claimed no close accuracy for his estimates, the methods by which they were made give assurance that they are at least much more than a guess, and the fact that capital income was estimated at more than three times the income of natural resources is significant. It is of special significance that income to resources was estimated at only 5 per cent the national income. The fact that farm-land values without improvements, according to Rorty, constituted 38 per cent of privately owned natural resources may also be of interest.

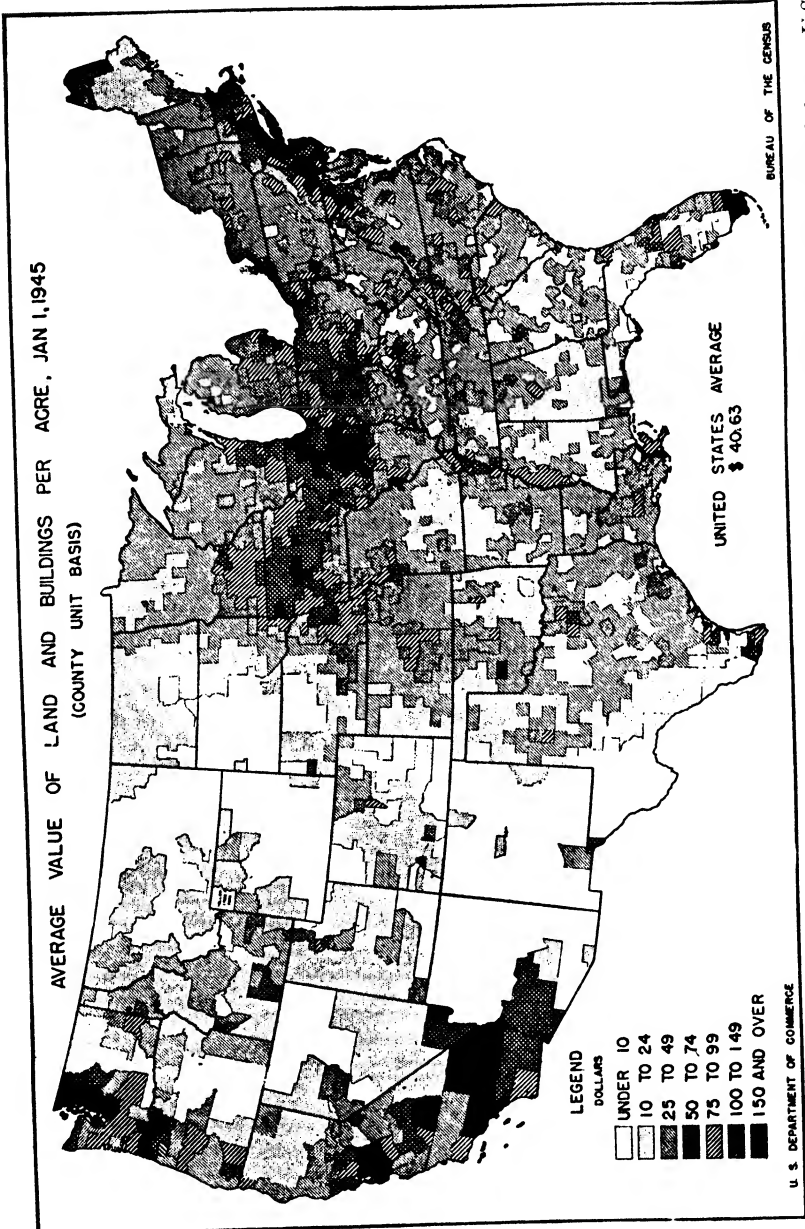


FIG. 32. Average value of land and buildings per acre, Jan. 1, 1945. Source: *Land Utilization in the United States, U.S. Government Printing Office, 1947, p. 16.*

Farm Real Estate Values. The values of farm lands and buildings have been reported in Census enumerations of agriculture. Average farm-land values, per acre, including buildings, were \$39.60 in 1910. From 1910 to 1920, they nearly doubled, rising to \$69.38 in the latter year. After 1920 there was a marked decline. Values per acre of land were down to \$48.52 in 1930. This decline continued into the thirties. Farm-land and buildings value per acre in 1935 was only \$31.16, less than half the 1920 figure. Even the economic recovery that was well under way at the end of the decade did not have much effect at first, for in 1940 the average value was only \$31.71. The great upward price movement of the Second World War finally began to influence land prices and by 1945 the average acreage value (including buildings) was \$40.63. The combined value of farm lands and building according to the Census was 17 billion dollars in 1900; 35 billions in 1910; 66 billions in 1920; 48 billions in 1930; and 33 billions in 1935; it came back to 52 billions in 1946. It should be noted that a considerable part of the changes in the values of farm land and of buildings as above quoted represent only oscillations in the value of the dollar.

Values per acre are strikingly different in different parts of the nation and do not correspond at all closely to the costs of bringing the land into use. Values of farm real estate, that is, both land and buildings, for the year 1945 are shown graphically by counties in Fig. 32. The value per acre of land excluding buildings in Iowa was three times that of Arkansas, though the cost of bringing the land into use had been less in Iowa than in Arkansas. In 1920 the Census value of Iowa farm land, excluding buildings, was over one-seventh of the value of the farm lands of the nation. Later events, however, proved that Iowa farmers in 1920 had overcapitalized the values of their lands even more than had the farmers of the nation as a whole, and the Census of 1930 showed Iowa farm lands valued at about one-eleventh of the value of the farm lands of the nation, and in 1945 about one-twelfth, excluding buildings in each instance.

Changes since 1915 in the value of farm real estate for the nation as a whole, as well as some of the factors which have brought about these changes, are shown graphically in Fig. 33. It will be noted that in 1920, farm real estate, including both land and buildings, had a per acre value of about 165 per cent of its average 1910-1914 value. In 1932 it had declined to about half this value. Farm real estate rose in value as prices of farm products rose, though as the illustration shows, real estate values rose more slowly than either farm wages or farm taxes. Although the ratio of prices received by farmers to prices paid rose by 1917 to more than 120 per cent of the 1910 to 1914 ratio, indicating a large increase in the net return to farm land, the peak high prices to which farm real estate was advanced were never justified by even these enlarged land returns.

The forces justifying a reduction in the value of farm real estate began as early as 1917, but the reduction in real estate values did not begin until 1920. During the early 1930's the forces justifying a reduction moved much farther than did the reduction in values. In fact, on the basis of prices for farm products in relation to prices paid, and farm wages and taxes, there was during 1932 and 1933 justification for very little capitalized value for farm lands. Values of land declined slowly

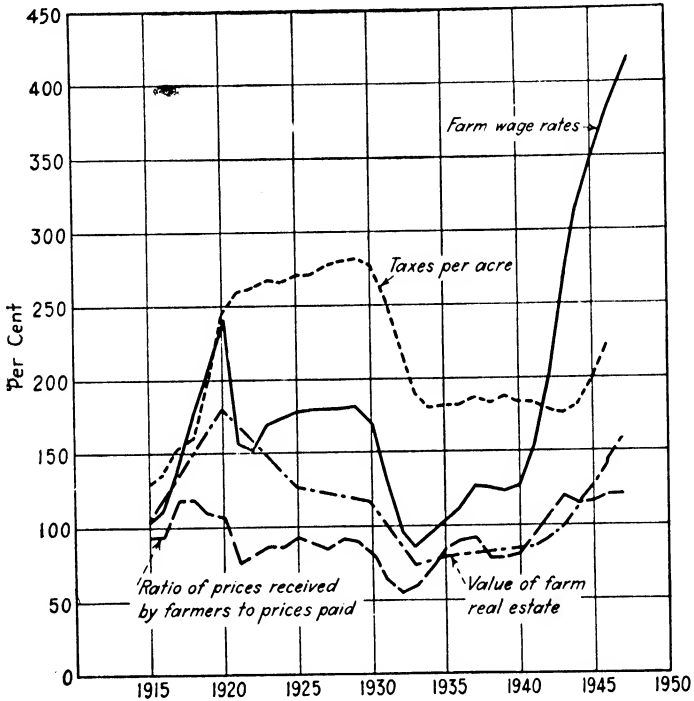


FIG. 33. Ratio of prices received by farmers to prices paid, taxes per acre on farm real estate, farm wages, and value per acre of farm real estate, 1915-1947. Indexes 1910-1914 = 100.

because of the hope that the forces working for a reduction, especially the ratio of prices received by farmers to prices paid, would be changed. From 1933 to 1939 prices of farm lands moved moderately upward. Then as the ratio of prices paid to prices received began to rise, so did farm real estate values, so that by 1945 and 1946 they were approaching those of the early twenties.

There is, as perhaps most notably demonstrated in the 1918 to 1920 period and again in the depths of the depression, an apparent tendency to overcapitalize farm lands, giving to them a value above that seem-

ingly justified by business principles. This is due to a number of causes, among which are the following: (1) Farming is not only a business but a way of living; that is, a farm, in addition to being a source of money income, is also a home. (2) The long continuance of the increase in the land values which began about 1900 made farmers think that this increase would continue indefinitely, though the great collapses of the twenties and thirties should have convinced them otherwise. (3) There appears to be a deep-rooted desire in human beings to own real estate, especially farm real estate, due at least in part to a feeling that it is a tangible form of property which, though it may decline in value, will not entirely disappear. (4) Farming appears to offer a security and certainty of some income, even though it may be little, which urban employment does not offer. (5) The door of entry to many kinds of urban employment is closed by some device or other. (6) In times of depression at least, almost anyone with a little capital can get a farm. Of course it will not be much of a farm and will afford very little income, but that may be better than nothing at all. The demand of people who had no opportunity in the city for a piece of land on which they could make some sort of living probably contributed to the apparent overvaluation of farm property during the depression.

To enter farming, however, on an adequate scale, as measured in current terms, is not something anybody can do. It requires no small capital, as can be understood when it is remembered that in 1946 the average farm in Iowa, including land, buildings, livestock, and equipment, was worth in the neighborhood of \$23,000. Even the farms purchased under the Bankhead-Jones Act, which empowers the Farmers' Home Authority of the U.S. Department of Agriculture to lend money to enable tenants to become owners and which is largely operative in the South, cost on the average \$7,000 in 1945. This is a program which, though intended to establish units large enough to afford a minimum standard of living, is operated as economically as possible.

The Future Outlook. On the basis of past experience, it is easy to say that farm values will follow the general trend of farm prices, and farm prices, in turn, will broadly move according to the movements of the business cycle. These last, however, are difficult to predict and, therefore, forecasts of farm-land value are equally difficult. The prediction can be made with a fair amount of confidence, however, that a catastrophic decline in land values such as occurred in 1920 to 1921 or 1929 to 1932 will not happen again. This anticipation rests in part on the nature of the government's farm program, under which price support for the basic crops is mandatory and is almost certain to be put into effect for every other important and many unimportant crops. The gov-

ernment's farm program will be discussed in some detail in Chap. 27. Further, in the event of a depression, the government is equally certain to take steps to maintain urban employment, purchasing power, and, thereby, the demand for food. Some of these measures will, moreover, be directly intended to maintain or enlarge the demand for farm products, like an extension of the present school-lunch program or a revival and expansion of the old Food Stamp Plan, under which the food consumption of families on relief was subsidized. The farmer of today, though he is by no means perfectly safe, will, in all likelihood, never have to confront such extreme vicissitudes as did his father in 1920 or 1930.

The Farm-tenancy Problem. In the 1930's there was a great deal of interest in the problem of farm tenancy, inspired by the fear that there was a trend toward tenancy that would result in the majority of the nation's farms being operated by nonowners. There was cause for alarm. By 1935 tenants operated 42.1 per cent of the farms in the United States as compared to 37.8 in 1920 and 37 in 1910. Of late years; this alarm has subsided, partly because the problem is better understood and more because the recent period of farm prosperity has enabled many tenants to become owners, reducing the percentage of tenant-operated farms. In 1940 this percentage was 38.7 and in 1945, only 31.7.

The prevalence of tenancy varies with the section of the country and the kind of crops grown. It is most common in the South, where, in part at least, the sharecropping system of farm operation arose out of the inability of freed slaves to buy or operate farms. In the East South Central region 42.4 per cent of the farms were tenant-operated in 1945. There is a very considerable question if the Southern sharecropper, though classed as a farm operator by the Census, is one in any proper sense, since he does not participate in the management of his own plot and generally does not furnish any capital.

The North Central States are next to the South in the prevalence of tenancy. In 1945, 34.3 per cent of the farms in the West North Central region were tenant-operated. In this section the high proportion of tenancy is probably due to the high capital requirements for becoming a farm owner and the production of cash crops, which lend themselves to tenancy arrangements. In contrast, the proportion of tenant farms in New England was only 3.7 and on the West Coast 11.7 per cent in 1945.

The reason for the alarm aroused by the growth of tenancy is that in many instances, especially in the South, it has many undesirable features. These arise from the lack of interest of an absent landlord in community welfare and a lack of interest on the part of the tenant in the farm. In fact, the tenant is also not often interested in the community because he regards himself as a temporary resident. As far as

the farm goes, his only concern is to get as much out of it as possible as quickly as possible.

Proper landlord-tenant arrangements, involving leases for more than a year (the term which is customary in much of the United States), making very clear the obligation of each party, and particularly providing compensation to the tenant for the value of any unexpired improvements he has contributed (as is done in England) would go far toward mitigating many of the disadvantages of tenancy.

Tenancy, especially in the North, is far from being an unmixed evil. Something still remains of the old concept of the agricultural ladder, whereby a young man first works for hire, then becomes a tenant, and finally becomes an owner. The institution of tenancy provides a means whereby a younger man lacking adequate capital can gain experience in farm operation, sometimes under the supervision of a more experienced farmer, and, if times are good, make enough money to afford a down payment on a farm of his own. The age distribution of tenants and owners shows that this is happening, the average age of tenants and croppers is forty-one, while the average for owner-operators is fifty-three.³ In the North, too, tenancy is not so prevalent as the bare figures make it appear. In that region it is a device whereby an older farmer, desirous of retiring, transfers his farm to a son or other relative. Thirty per cent of the tenants in this area were closely related to the farm owner in 1930.⁴

Questions and Problems

1. Distinguish between commercial rent and economic rent.
2. Define the intensive and extensive margins of cultivation, and show how they are related to economic rent.
3. How do agricultural improvements affect farmers as landlords? In other ways?
4. Explain the statement that land values result from the capitalization of rent, and show to what extent it is true or not true.
5. Explain *quasi rents* as that term was used by Alfred Marshall. Why is the term appropriate?
6. Distinguish between returns to land and those to capital.
7. What is meant by opportunity cost?
8. Is economic rent a cost of production which affects price?
9. What is meant by the statement that farm-land values tend to be overcapitalized? Is it true? If true, what are the reasons? If untrue, show that such is the case.
10. What are your conclusions concerning probable future tendencies as to land values in the United States and the reasons for these conclusions?
11. What lands have in your opinion the best, and what lands the poorest, possibilities of increase in value in the future, and why?
12. To what extent is it true that an abundance of natural resources is essential to a high standard of living?
13. What are the advantages and disadvantages of farm tenancy?

³ Black, *et al.*, *Farm Management*, p. 66.

⁴ *Ibid.*, p. 75.

Suggested Readings

1. *The Farm Real Estate Situation*, a circular issued annually by the U.S. Department of Agriculture, gives the current picture.
2. Richard T. Ely and George S. Wehrwein, *Land Economics* (1940), treats comprehensively the nature of land and the economic aspects of land use. It contains a lengthy bibliography of the literature on land economics.
3. Paul V. Maris, "Farm Tenancy," in *Farmers in a Changing World, The Yearbook of Agriculture, 1940*, is a good brief review of the tenancy situation.
4. John D. Black, "Notes on 'Poor Land' and 'Submarginal Lands,'" *Journal of Farm Economics*, May, 1945, is a very stimulating discussion.

CHAPTER 18

RISK, RISK BEARING, AND PROFIT

The principles governing the returns to land, labor, and capital have been studied in the three preceding chapters. The return to the entrepreneur, pure profit, is closely related to risk and risk taking. The risks in large part have to be taken because one of the main functions of the entrepreneur is to embark on new enterprises, to introduce *innovations*, as they are technically termed in economic literature, in the conduct of his business. Such innovations may be of any kind—new products, new marketing methods, changes in production technique, or changes in the location of manufacturing or selling facilities. Obviously any change of this sort involves a risk for the firm making it. Indeed in a world so subject to change as ours is, where the general price level shifts rapidly and far, where foreign markets are very uncertain, where domestic markets are fickle, subject as they are to advertising pressure, where research is constantly discovering new products—amid all these possibilities, the decision by an entrepreneur *not* to innovate, to rely on old, routine methods may be even more risky than to try something new.

While risks due to innovation or to changes in the economic atmosphere of the sort just listed can only be avoided by luck or foresight, certain other risks may be anticipated and shifted or shared by the entrepreneur. Since risk bearing is so important a part of the entrepreneur's function, we shall, before turning to the principles governing the return to the entrepreneur, classify the major types of risks and see to what extent they may be avoided or shifted.

Any participant in economic activity, whether he is entrepreneur, landowner, capitalist, or laborer, faces risk or the possibility of a monetary loss in the form of a loss of capital or of income, whether the income be interest, rent, or wages. No bond is so safe as not to entail risk, though before the bondholder of a corporation will suffer a very large loss, the stockholder usually will have lost his entire equity. Labor's risks are those of injury, sickness, and unemployment.

Each individual attempts, as far as possible, to eliminate risk through prevention, as by fireproof buildings, or market information, or whatever method is applicable to the risks he faces. Some of the risks which

the individual cannot eliminate, he will, if farsighted, attempt to transfer to a larger group through some such device as insurance. Those risks which can be neither eliminated nor transferred must be assumed.

It is the function of the entrepreneur primarily to assume risks under the capitalistic system. As the organizer of the business and the residual claimant to earnings and assets, he is the first to feel the loss coming from the realization of risks, but he is as well the one who gains from the successful avoidance, transference, or assumption of risk.

THE ELIMINATION OF RISK

Types of Risk. The uncertainties of economic activity may be divided into three types: (1) Risks arising from natural factors—such as fire, wind or other weather forces, earthquake, disease, or insects—pervade all business activity and to a marked extent agriculture. (2) Human risks arise from the nondependability of human beings. Most accidents are ultimately traceable to carelessness or indifference. Dishonesty of employees or others with whom one has business relations sometimes occasions large losses. (3) Market risks are the uncertainties as to the prices of cost factors and, more frequently, of selling prices and sales volume. This form of risk is of particular concern to us here, for it must be assumed in a large part by the entrepreneur, or in certain cases by labor or other productive agencies. The frequency of adverse market conditions is highly characteristic of the capitalistic system.

Natural Risks. The avoidance of natural risks requires the application of the latest scientific discoveries to economic activities. Most fires arise either from carelessness or from the use of faulty construction or of improper materials. Buildings constructed to entail the minimum of fire risk are more expensive in the first outlay but not always over a period of time. Properly built machinery will do much to reduce the accident rate. Students of agriculture are informed on the latest methods of preventing the ravages of insects and disease. Sickness and death can often be avoided if the best of medical knowledge is applied. A considerable portion of the risks arising from natural factors can be avoided by intelligent action; a considerable part of the remaining risks may be transferred through various forms of insurance, and the remaining portion must be assumed.

Moral Risks. Again the elimination of moral risks calls for thoughtful foresight. Part of the unreliability of employees arises from the way in which the employer deals with his men. The whole philosophy of personnel work, the selection of the man to fit the job, placing on him responsibilities according to his ability, advancing him both in position and in salary according to merit, and the general attempt to obtain his hearty cooperation by dealing with him not as a machine but as a human

being will do much to eliminate the possibilities of misconduct or inefficiency on the part of the employee. Losses arising from the breaking of the intent or letter of contracts for purchase and sale may in part be avoided by investigating the credit standing of those with whom business is done, as their record is given by local credit bureaus or such national organizations as Dun & Bradstreet's. The proper drawing and executing of contracts call for expert legal talent, and it is false economy to try to avoid such expense. Contracts for sale of farm products, particularly of perishables, often have "loopholes" which on occasion may work to the detriment of the farmer. Again, there is opportunity to insure against some moral risks which cannot be avoided; others must be assumed.

Market Risks. Thus far but little progress has been made in eliminating market risks. The best method of minimizing these risks is through the gathering and analysis of the best available information on those factors which bear on costs and selling prices, and the adjustment of business plans according to the conclusions reached. In Chap. 7 the problem of forecasting the probable movement of prices of farm products, particularly by means of the government outlook reports, has been discussed. Since the producing unit in agriculture is very small, the individual farmer is not in a position to make such studies for himself. Commercial research, however, is carried on on a large scale by many industrial corporations and forms a factual basis for their business plans. In addition, specialized business and economic research agencies supply information to business concerns in return for sizable fees. Business has been trying in this manner to minimize price risks. In addition, industry has long sought to reduce market risks through open or secret price agreements and provisions for control of output. Under the NRA program, business attempted by these methods to reduce market risks. However, a new risk was inevitably introduced: the uncertainty of the effect on particular businesses of the increased social control brought by the new legislation.

It cannot be emphasized too strongly, however, that, by and large, market risks remain; they cannot be avoided or even transferred to others. The majority of such risks must be assumed. The best available information concerning the market outlook and the most keen analysis of it cannot lead to conclusions with mathematical certainty. Many of the forces are unmeasurable, many statistics are inaccurate, others incomplete, and in some fields no significant quantitative information exists. Finally, we must recognize that, in a dynamic system such as ours, new and powerful forces spring up without warning, to bring results different from the anticipations of the forecaster and to disarrange plans laid on the basis of his forecasts.

RISK TRANSFERENCE: INSURANCE

The most extensive device for the transferring of risks, particularly risks arising from natural factors, is insurance. The loss is by this means equalized, being in part shifted from the individual who actually realizes the loss to a large group whose members all face the possibility of loss but few of whom actually experience it in a given year.

Principles of Insurance. Insurance involves the periodical payment of a relatively small sum by the insured, who is facing a large risk, which risk may never be realized, or if so, at some uncertain time, in exchange for the certainty that if the risk is realized he will be compensated to the amount provided for in his policy. This does not indicate that the risk is eliminated, but rather that the individual upon whom the risk may fall is relieved of much of the financial burden in case the risk is realized. The burden of the risk is borne by a large group of those who may be subject to it, through their contribution in the form of premiums to provide a fund from which compensation is paid to those who actually suffer the loss. All those who carry insurance must collectively pay not only for all losses sustained but, in addition, for all the costs of administering the insurance.

In order to be properly insurable, a risk should have the following characteristics. First, it should be one which results in loss with sufficient regularity for an intelligent estimate to be made of the probable loss to be suffered by a group of risk takers during a given period of time, such as a year. Life insurance has this quality to a high degree. Death is so constantly occurring in any large group of human beings that the average death rate per 100,000 people varies relatively little from year to year. Regularity will obtain only where large numbers are involved. The death rate of a particular thousand people will vary from year to year, but the average death rate per thousand in the whole of the United States is quite stable. Irregularity in the occurrence of damaging storms makes hail damage a less insurable risk. Second, the risk must be such that the occurrence of the event insured against in one case cannot bring that same event to pass in any great number of other cases. A fire insurance company carrying a large part of its insurance in one city would be forced into bankruptcy by a city-wide conflagration, and the insurance policies would be of little value to the insured. Several fire insurance companies were unable to meet all of the payments to policyholders who lost property in the San Francisco fire of 1906. Again, hail insurance has frequently failed because an undue proportion of the policyholders had their crops in the same general locality of a single hailstorm, and this resulted in too high a percentage of loss at one time.

Practically all large commercial insurance companies today determine

their rates not upon the experience of the immediate past but upon the experience over a long period of years, assuming that a large number of years brings a large variety of circumstances and therefore brings into play all the forces that probably will be present in any future year. *Fixed-premium* life insurance rates are based on such extensive experience. They are computed by the mathematical theory of probability, which, when applied to the experience with a particular risk, shows the probability of the occurrence of that risk during any particular period. Experience tables have been kept which show the death rate per thousand in the United States, or in designated geographical regions, and by applying the mathematical theory of probability to these tables, the degree of probability that a particular person of a particular age will die in a particular year can be determined. In order that the theory of probability will work out accurately in the actual experience with losses, it is necessary that the insurance company shall have a large number of policies outstanding. When only a small number of cases are considered, it is possible for the losses to be considerably greater or less than those which would be anticipated according to the probability tables. In fields other than life insurance the rates have not been worked out with such mathematical accuracy. Yet the principle of estimating the average loss under given conditions is basic in determining all kinds of *fixed-premium* rates.

Life Insurance. Although life insurance is usually a personal and not a business matter, it is of such widespread use and the understanding of its basic principles so important to every person that a brief discussion of the nature of life insurance, the different kinds of policies, and the determination of rates will be presented here. Every person faces death at some time, but it is the premature death of those who have family or other responsibilities which brings the need of insurance. Parents insure to protect their dependents; corporations sometimes insure executives in order to be compensated for the loss of their services in case of death; individuals without dependents insure in order to provide for sickness and burial expenses; wealthy people insure in order to provide ready cash for expenses involved in the administration of their wills. When we consider that the total life insurance outstanding in this country in 1947 was approximately 175 billion dollars, we may realize the extent to which people have assumed the responsibility of providing funds needed in case of their death. Not only should we recognize the significance of these data as relating to insurance, but we should also recall that most life insurance embodies a form of saving, and that the privilege of borrowing on insurance policies has tided many people over a period of financial stress, having been the financial savior of many thousands from 1930 to 1933 in particular.

Dr. S. S. Huebner, a leading authority, says, "From the standpoint of the individual, life insurance may be defined as consisting of a contract, whereby for a stipulated compensation, called the premium, one party (the insurer) agrees to pay the other (the insured), or his beneficiary, a fixed sum upon the happening of death or some other specified event."

The insurer is either a stock company or a mutual organization. The latter is considerably the more important in life insurance, whereas in most other types of insurance stock companies are more important. The company is restricted by law concerning the type of its investments, the tendency being to restrict these investments to good bonds and first mortgages on improved real estate.

In recent years, because of the relative shortage of high-quality investments, and more particularly because of the low income received from them, these restrictions have been somewhat relaxed. Several of the large companies, notably the Metropolitan Life of New York, have constructed and retained the complete ownership of very large apartment-house developments.

Premium Rates. Life insurance rates of the usual fixed type are based on what it is estimated will be necessary to pay death claims and operating costs. Thus, as a person becomes older, insurance rates, if based on the risk for the year, would become higher each year and for very old people would be prohibitive. Instead, most companies, known as *legal-reserve* companies, have worked out a system of *level premiums*. Under this system the rate remains the same throughout the life of the policy, although the rate paid by a particular person depends on his age at the time he became a policyholder. Under this system, the premium in the earlier years is in excess of the cost of death claims and operations at that time, the remaining portion being set aside in a reserve to accumulate at from $2\frac{1}{2}$ to 3 per cent interest and thus to provide funds for paying the larger death claims arising at older ages, when the premium income will provide less than funds necessary to meet death claims. Altogether, the level-premium system works satisfactorily.

Two of the elements entering into premium rates have already been discussed: the expected mortality, and the amount necessary when compounded at the $2\frac{1}{2}$ to 3 per cent which may be expected to be earned in interest on reserves to meet death claims when the insured becomes older. The third factor is *loading*, or the selling and operating costs of the insurer. Further discussion of rates will be made in connection with the leading types of policies.

Types of Policies. The legal and actuarial advisers of insurance companies have devised a variety of policies, most of them intended to meet special needs of the insured, although some appear merely to provide something different as an aid to the salesman. Recently there has been

a tendency toward simplification and the four major types of policies, which are listed in Table 38, contain most of the essentials of all policies.

TABLE 38. ANNUAL PREMIUM RATES PER \$1,000 INSURANCE IN A REPRESENTATIVE MUTUAL COMPANY

Age	Type of policy			
	Whole life (paid up at 85)	20-pay life	5-year term	20-year endowment
15	16.32	27.73	.....	.....
20	18.23	30.04	8.07	49.41
25	20.69	32.66	8.68	49.88
30	23.71	35.63	9.13	50.53
35	27.57	39.20	10.11	51.66
40	32.58	43.58	12.13	53.57
45	38.85	48.79	15.43	56.40
50	47.21	55.56	20.98	60.99
55	58.48	64.67	29.84	68.26
60	73.95	77.40	43.59*	79.57
65	95.71	95.71	.....	96.94

* For renewal only.

First, the whole- or ordinary-life policy calls for payments each year during the life of the policy. It does, however, build up reserves which may be converted into extended insurance for some years after payments are discontinued. Probably half or more than half of all insurance is of this kind.

Next there is the limited-pay life policy. With the twenty-pay life policy, for example, the insured will make not more than twenty annual payments, even though he may live for fifty years and continue to be insured until death. Therefore the twenty premiums must be sufficiently large to build up a reserve adequate to provide for expected death payments for all the years after income from premiums has ceased. The premium on a twenty-pay life policy for a person insured at the age of twenty is shown in the table as \$30.04, or nearly 66 $\frac{2}{3}$ per cent more than the \$18.23 premium for an ordinary-life policy.

Term insurance, a third kind, is similar to limited-pay life in that premium payments continue only for a specified number of years; but it differs sharply in that the insurance ceases to be in force at the end of the term specified in the policy, whereas the limited-pay life policy continues in force until the death of the insured, provided premiums are paid for the number of years specified. Since the insurer's liability ceases at the end of five years in the case of a five-year term policy, relatively

little must be laid aside as a reserve during the early years of the policy, and, therefore, term-insurance rates consist almost entirely of loading and the actual mortality costs in the given years. The premium for a one-year term policy does not include any assignment to reserve. Term policies are designed to provide the maximum of protection for the minimum of cost for a limited period, but the purchaser should realize that at the end of the term he no longer has any insurance, and that in order then to obtain protection he must be able to pass a medical examination and must pay the premium rate for his attained age.

The endowment policy, of which the twenty-year type is the most popular, combines the features of the term policy with a savings contract. Under this policy the face value will be paid upon the death of the insured, or, if the insured still lives at the termination of the contract, let us say twenty years, the face value will be paid to him at that time. With a twenty-pay policy, in contrast, the face value is paid only at death. With the endowment policy, the insured is without insurance after the maturity of the policy, though he has received the face value as a cash settlement. The rates charged on endowment policies are the highest of any of the ordinary types of contracts, for the reserve must be large enough in twenty years to equal the face of the policy. The peculiar advantage of the endowment policy to the insured lies in the incentive to save and in the relatively safe investment of the savings. The disadvantage of endowment policies lies in the fact that at the expiration of the contract the former policyholder must pay the higher rates of his advanced age in order to obtain continued insurance—if, in fact, his health is such that he is still insurable.

Industrial insurance is a variant of the whole-life type almost always sold to people of low income. Such insurance is usually written without benefit of a health examination and is typically for small amounts sufficient to cover burial expenses and not much else. The agents collect premiums from the policyholders each week or month, so that the cost of administration is high and premium rates are likewise high.

The proper type of policy to be selected by the insured depends upon the insured's needs. Those seeking insurance should become acquainted with the features of the various policies and compare them with the kind of protection desired. Then a reputable agent of a reliable company should be consulted.

Policy Dividends. Participating policies of stock insurance companies and all policies of mutual companies provide that the insured shall share in any savings which arise in the cost of operations and from low mortality or gain from unexpectedly large earnings on investments. Rates charged by mutual companies are based on the assumption that people will die as rapidly as indicated by the American Experience Table of

Mortality, but, as a matter of fact, insured people, being selected by medical examination, are longer lived, and mortality usually runs from only 50 to 70 per cent of that indicated by this table. Again, rates are based on the assumption of earnings somewhat lower than the actual return, which in 1946 amounted to about 3 per cent on the companies' investment. Often the estimated loading or operating expenses are larger than actual operating costs. In a mutual company the funds saved by low mortality or operating costs or gained by high earnings on investments are divided among the policyholders as dividends. Sometimes contracts issued by stock companies provide for some participation by policyholders. Usually, however, stock companies prefer to estimate these savings in advance and charge lower premium rates in the first instance to the policyholder. Ordinarily, the contracts provide for four alternative methods of using the dividends, the insured having the privilege of selecting the method to be used. The dividends may be withdrawn in cash, they may be used to reduce premium payments, they may be used to purchase additional paid-up insurance, or they may be left to accumulate with interest.

Net Cost. One of the important facts to be examined by a prospective policyholder is the net cost of a policy, especially as between different companies. Net cost is usually calculated over a ten- or twenty-year period. It consists of the total premiums paid, minus dividends received, minus the cash surrender value at the end of the ten or twenty years, the last mentioned being the amount which the company will pay the insured if he is still living and decides to surrender his policy at that time. According to the rates cited in Table 38, the premium on ordinary life at the age of twenty would be \$18.23, or a total of \$364.60 in twenty years of premium payments. Dividends would be expected to total \$159.88, and the cash surrender value as specified in the contract would be \$190.04. Thus the net cost for the twenty years, exclusive of interest on the premiums paid, would be \$14.68, or 73 cents per year. In nonparticipating policies, net cost would be total premiums minus surrender value. In the comparison of participating and nonparticipating policies, it should be remembered that the amount of dividends under the participating policies is uncertain. It may be more or less than shown by past experience. Net cost, as above explained, leaves out of consideration the fact that the insurance company has had the use of the money paid as premiums by the insured, which is a source of considerable income.

Policy Features. Authorities on insurance have listed five features which all life insurance policies should include: (1) The insured should have the right to change the beneficiary. (2) The insured should have the right to borrow against the policy or to surrender it and obtain

approximately the full reserve in cash. (3) The policy should be incontestable after two years except for nonpayment of premium. In other words, the company should not have the right to refuse payment of death claims because of inaccuracies in the medical examination or in statements by the insured. (4) The contract should include waiver of premium, or a provision that, in case of the total disability of the insured, the company will pay his premiums and thus keep the contract in force. (5) Extended insurance should be provided for automatically if the insured becomes delinquent in his premium payments while his policy has a surrender value but he does not surrender the policy. Thus the insurance on his life would be extended for such a period as accumulated reserve and dividends will purchase the protection.

Property Insurance. Farmers may carry property insurance of one or more of the following kinds: fire (including lightning), windstorm, crop other than from fire loss or theft. Fire and crop insurance will be discussed sufficiently to give the general principles and practices. Some of the other types of insurance will be discussed very briefly.

Fire insurance companies may be of two types: stock companies organized for profit or mutual companies formed by those facing the risk. The stock companies are predominant, although mutual companies antedate the stock companies and have shown a rapid growth in recent years.

Rates for Fire Insurance. Fire insurance rates have not been worked out with as great exactitude as have life insurance rates. This fact arises from (1) the lack of adequate data on property loss experience and (2) the wide diversity in types of property insured, conditions surrounding the property, and the fire-prevention equipment at hand. Progress is being made toward basing rates on experience, but at present the rates are being based primarily on the collective opinion of experts. To be sure, these experts are guided by rating systems, but the element of personal judgment remains.

The expert raters start with a *key rate* and modify the rates for conditions which affect the fire hazard. This "basic rate" in a particular city or community will vary from a standard basic rate for the country as a whole according to factors contributing to fire hazards. Additions or deductions will be made for particular pieces of property according to the type of construction, kind of materials, size of the building, use of building, exposure to fire from outside, and fire-prevention and fire-fighting equipment at hand. In making the variations from the *basic* or the *key rate*, the expert raters cannot be influenced too much by one year's experience. The average experience of several years is more reliable.

The fact that these fire insurance rates are not the result of careful mathematical analysis of experience with losses leads to the possibility

that the rates applied in a particular case may depart from the amount necessary to pay operating costs and to build up a fund to pay losses. It is possible that the isolated position of farm buildings more than offsets the effect on fire hazard of the absence of fire-fighting equipment and that, therefore, the risk is less than in cities. If the commercial companies have not given sufficient weight to the isolation of farm buildings, the rates of farmers' mutual fire insurance companies can be lower than are those of commercial companies.

A difficult problem arises from the moral risk, the possibility that the insured will burn his property when its market value comes to be less than the amount of the insurance. The moral risk becomes particularly great during times of deflation, as in 1920 to 1922 and 1930 to 1933. The insurance companies try to reduce this moral factor by investigating the character of the insured, by avoiding overinsurance, and by aggressive prosecution of all cases for which there is evidence of arson. As only losses suffered can be collected, property should not be overinsured.

Farmers' Mutual Fire Insurance. Mutual fire insurance has been one of the most successful cooperative enterprises undertaken by farmers. Rates charged by farmers' mutual fire insurance companies are usually considerably less than the rates charged by stock companies. In 1945, there were 1,849 farmers' mutual fire insurance companies in the United States, with \$14,185,720,000 of insurance in force. Per \$100 of insurance losses came to 15.7 cents and other expenses to 8.0 cents, making a rate of 23.7 cents. Total outlays were about 36 million dollars, and reserves amounted to about 71 millions.

Recently there has been a tendency for companies operating on less than a county basis to be replaced by county units. Too small units do not carry sufficient diversity of risk or financial strength to lead to their success. On the other hand, too large units may suffer from the fact that they must have salaried officers, whereas in many smaller mutuals much of the administrative work is performed almost gratuitously. This fact, if such administration is efficient, reduces the insurance costs materially.

Concerning the scope of the insurance contracts issued by farmers' mutuals, the most general practice is to cover loss from fire and lightning. Some mutuals include windstorm in a *combined-protection* policy. Other companies write fire insurance separate from lightning losses.

Funds to pay for losses are frequently not collected in advance but are obtained by assessments on members in the event of loss. It is becoming increasingly the practice to levy assessments but once a year and thus avoid the aggravation of irregular, and perhaps more frequent, requests for payments by members. The advance assessment, or charges based upon estimated needs, has the advantage of availability of funds

to meet losses and avoids the cost—and perhaps risk of nonpayment—of levying an assessment for losses already sustained. In addition to levying advance assessments sufficient to cover usual losses, many mutual companies have built up reserves to cover unusual losses.

That farmers' mutual fire insurance is a successful plan is indicated by the low average cost of 23.7 cents per \$100 of insurance carried by those companies in 1945. At such rates, the cost of transferring an important risk of the farm enterprise is reduced to such a low point that farmers cannot afford to assume the risk individually. Fire-loss risk then ceases to be an uncertain element in the success of the farm enterprise and becomes a production cost of known amount.

Crop Insurance. The predominant factor in variation in the production of most crops is the variation in yields. The intelligent farmer takes all the steps he can to prevent loss from the elements, disease, or pests, but a large risk of losing part or all of his crops remains. Ordinarily, farmers assume this risk, which, if the outcome is unfavorable, may include not only the loss of profit but may be so severe as to include the loss of labor and capital spent toward the production of a crop.

In the past, farmers' opportunities for insuring against crop damage were very limited, but with recent extension of the Federal crop insurance system, the producers of a number of major crops now can obtain it. After various private and cooperative attempts in the earlier part of the century to institute crop insurance had failed, the Agricultural Adjustment Act of 1938 was written to include an authorization for a system of wheat-crop insurance. This had been largely inspired by the great droughts. As experience was gained, subsequent legislation added to the list of crops for which insurance could be obtained. In 1942 an insurance scheme for cotton and in 1945 one for flaxseed were begun.

Perhaps because the weather was so favorable between 1938 and 1948, not many wheat farmers were impelled to take out insurance. In 1946 the number of units insured was 292,050, though a million farmers grew wheat, and only 9,200,000 acres out of a total acreage of 65,000,000 were covered. In earlier years up to 400,000 units and 14,000,000 acres had been covered. Apparently at the beginning of the program the premiums had been calculated on too low a basis because the indemnities (in the form of wheat) exceeded the premiums.

In 1946, 132,000 cotton-growing units were insured, covering 4,306,000 acres as against a total of possibly 2,000,000 cotton farmers and a total acreage of 18,190,000. In 1946, 10,819 flax units were insured as against 31,789 the year before. Insurance covered about 277,000 acres out of a total of 3,953,000 planted to flax.

With respect to crop insurance, the following question arises: Assuming that the insurance plan is sound, against what crop-loss risks should

the farmer carry insurance, and how much should he carry? This question is so excellently answered by V. N. Valgren that his statement is quoted here:

The need of the farmer is a form of insurance that (1) will safeguard him as far as practicable against all unavoidable losses which would seriously cripple him, and (2) can be obtained at a cost or premium which he can afford to pay.

This means, in the first place, that the protection must be limited to actual loss of a material part of the investment in a crop, reasonable compensation for the farmer's labor, and a fair rental of the land being included in such investment. . . .

Other Types of Property Insurance. Windstorm insurance has developed in a manner similar to fire insurance. Farmers' mutuals, either special windstorm insurance companies or the fire insurance companies, carry most of this insurance. Sometimes windstorm coverage is part of the so-called *combined protection*.

Livestock insurance, other than from loss by fire and lightning, has made little progress in this country in comparison to the development in Europe. V. N. Valgren offers two reasons for this situation:¹ (1) This form of insurance faces to an unusual extent the moral hazard of neglect in the care of the animals or even outright fraud. (2) American farms are relatively large, so that each farmer has a sufficient number and variety of livestock that he can carry the risk of the loss of one or a few animals without financial embarrassment.

The high rates comparable to those for urban residents charged by commercial companies for automobile insurance led to the formation of many farmers' mutual automobile insurance companies, where rates were scaled to the lower theft and collision risks in rural areas. These companies, assisted in some cases by the state units of the national farm organizations, have been very successful and some of them have successfully sold automobile insurance in the cities.

Workmen's Compensation Insurance. All but one state had Workmen's Compensation acts by 1948. Such acts provide machinery for raising and administering funds for the paying of injured workers or their dependents. Though only 21 states require employers to abide by the act, the others frequently strip them of their ordinary legal defenses in case of a damage suit by an injured workman, and this, in effect, forces employers to comply with the compensation act. These compensation acts rarely cover agricultural workers. Since industrial accidents are a fairly recurrent risk, employers may insure against liability for payments to employees or their families as compensation for

¹ See the text of the address by Valgren before the 1931 meeting of the American Institute of Cooperation.

accidents either in a private insurance company or in a state insurance fund, administered by a state commission, or in some cases may carry the insurance themselves. The funds to pay the insurance premiums may be raised either by contributions by employers alone, by contributions by both employers and employed, or entirely by deductions from wages. The purpose is to pay the injured a sum equal to a fraction of his wages during the period of disability or, in the case of death, to pay his dependents a sum equal to his earnings for a certain specified period. In addition, the payment is intended to meet all necessary medical expenses.

Unemployment Insurance. The Social Security Act of 1935 set up a comprehensive system of unemployment and old-age insurance in the United States which will be outlined below.

Unemployment insurance is a system of social insurance that provides workers with some income during their period of unemployment. The program does not attempt to protect all persons, but only those in "covered industries," who are regularly attached to the labor market, who are able and willing to work, and who are genuinely unemployed.

Although Wisconsin enacted an unemployment insurance law in 1932, no other state passed such a law until Federal action in this field became certain. The Social Security Act of 1935 did result in stimulating enactment of state laws; within two years of its passage, all 48 states, the District of Columbia, and the territories of Alaska and Hawaii had unemployment compensation laws. Thus, the unemployment insurance program under which most industrial workers in the country are insured is a joint Federal-state program. The Social Security Act levied a uniform payroll tax of 3 per cent on employers, allowing employers credit of 90 per cent against that tax for contributions paid to states under unemployment compensation laws that met specified standards. The Federal government also grants funds to pay all the costs of administering those laws.

The tax provision by the Federal government applies to employers with 8 or more employees in at least 20 weeks during a calendar year, except those in excluded industries. About 30 states cover even smaller businesses, down to those with 1 employee.

The most important industries excluded from the Federal law are agriculture, domestic service, Federal, state, and local governments, non-profit organizations, and railroad workers. (Railroad workers are protected under another law.)

In April, 1948, covered employment was estimated as 32.3 million, a substantial increase over the prewar level, and even an increase over the wartime peak of 31.3 million in June, 1943. Many more persons, of

course, have some work in covered industries during a year than are employed at any one time in those industries. Over 37 million different individuals, it was estimated, had sufficient wage credits to qualify for benefits under the state laws.

State laws specify the conditions under which workers may receive benefits. The benefit a worker receives for a week of unemployment approximates 50 per cent of his past weekly wages, but will vary from \$3 to \$25, depending on the state law and his prior earnings. Benefits are usually payable for not more than from sixteen to twenty-six weeks in a twelve-month period.

Prior earnings are not the only condition of eligibility for benefits. The worker must also be unemployed, be able to work and available for work, file a claim for benefits, register for work at a public employment office, and serve a waiting period before drawing benefits.

Benefits are intended to compensate workers for wage loss during periods when they are unemployed because there are no suitable jobs for them. Therefore, a worker who without good reason leaves a job, who refuses to take a suitable job that is offered to him, or who is discharged for misconduct connected with his work is disqualified from receiving benefits for a certain number of weeks after the disqualifying act. In some states his benefits are also reduced if he is disqualified. He is also disqualified if he is directly engaged in a strike or other labor dispute that results in a stoppage of work.

As explained above, the Social Security Act levied a tax on payrolls to be paid by employers. Since the rate and duration of unemployment vary among employing firms within states, a system called "experience rating" has been devised to reduce the tax contributions of the more stable employers. In consequence of reductions in taxes under these ratings, in 1946 the average tax rate for the nation was 1.4 per cent as compared with the standard rate of 2.7 per cent.

The protection of the unemployment insurance laws has meant a great deal to workers in this country. In 1946 about 4½ million workers drew some benefits during the year, at an average weekly rate of \$18.50. From the beginning of the program through June 30, 1947, the state agencies collected about 11 billion dollars in contributions and interest, and paid out some 4 billions in benefits, leaving an approximate balance of 7 billion dollars in reserves.

The unemployment insurance programs made great progress, yet even by 1948 much remained to be done. Too many workers were still excluded from coverage and exclusions from coverage were increased by a law passed in that year which applied largely to employees of newspapers. In many cases the benefits were too low. Under harsh disqual-

ification provisions or interpretations of state laws, workers whose past earnings and employment would entitle them to benefits were disqualified. Revisions were also needed in the financing of the program.

Old-age and Survivors' Insurance. The Social Security Act provides two different methods of payment for old people. Old-age and Survivors' Insurance is a Federal *contributory* plan which guarantees annuities to those over sixty-five years of age who qualify. Old-age assistance is a grant-in-aid, Federal-state program, which provides cash payments to persons over sixty-five *if they are in need* and regardless of whether or not they have ever worked.

Old-age and Survivors' Insurance is a government program to provide a monthly income for workers and their families when the worker retires at sixty-five or later and for his family when he dies. Unlike unemployment compensation, OASI is a Federal program. Wage earners and their employers in covered industries contribute equally to a trust fund from which benefits are paid. In 1948 the contributions were 1 per cent from each on the first \$3,000 of earnings and payrolls. By January, 1947, more than 8 million persons were permanently fully insured, which means that they or their survivors can qualify for benefits regardless of the workers' future covered employment. More than 33 million other workers were either fully or currently insured but their continued eligibility depended on their future employment. By the end of 1947 it was estimated that 1,975,000 beneficiaries were actually receiving monthly payments. These payments totaled \$38,100,000 per month.

Like unemployment insurance, OASI provides protection only to those in "covered" industries in private industry and commerce. The major groups excluded were again agricultural workers, domestic servants, Federal, state and local government workers, employees of nonprofit organizations and the self-employed. Because of the limited coverage of the program, out of a labor force of about 60 million in June, 1947, some 15 or 20 million were in jobs that provided no credit toward OASI.

The original act provided benefits only to retired wage earners, but the 1939 amendments broadened the system to include insurance protection to the family as well. Monthly benefits are paid to insured wage earners after they reach sixty-five and *retire* from covered employment and to their wives and minor children. At whatever age an insured worker dies, monthly benefits are paid to his widow and children or to his dependent parents if there is no widow.

To be eligible for benefits the worker must be sixty-five years old, have worked in covered employment, and be no longer working. He must have been paid, on covered jobs at least \$50 in each of a certain number of calendar quarters. Once a worker has 40 quarters of coverage he is

qualified as long as he lives. In other words, a worker who has worked for 10 years in covered employment is permanently insured regardless of his future work history. He may, however, increase the amount of his benefits by continued work in covered employment at higher earnings, up to \$3,000 annually.

Benefits are a percentage of the worker's average monthly wage in covered employment. A widow's benefit is three-quarters of her husband's benefit amount. For all others the monthly payment is equal to half the worker's primary benefit. However, the total monthly benefits that may be paid to a family on one worker's account, while never less than \$10, may not be more than twice the primary benefit, or 80 per cent of the worker's average monthly wage, or \$85, whichever is the least.

The limited coverage of unemployment and old-age insurance as things stood in 1948, particularly the exclusion of farm operators and workers, has been stressed. The Social Security Board which administers these two programs has prepared plans for including farm workers and others now excluded. There is no reason why those making their living in the country should not be afforded the protection of these laws now enjoyed by most city workers.

RISK TRANSFERENCE: HEDGING

In the case of the more staple agricultural commodities, the device of *hedging* has been developed for purposes of transferring the risk of price fluctuations from the individual owner of such commodities to the general speculative market. The commodities in which hedging operations are conducted on a large scale are cotton and wheat, although hedging transactions also take place in silk, coffee, butter, eggs, some pork products, cottonseed oil, soybean oil, and in fact, in any commodity for which a *future* market exists.

Organized Exchanges. Preceding the discussion of hedging, certain of the practices and terms used in trading on the organized exchanges must be explained. Trading in wheat on the Chicago Board of Trade will be used as an example. The Chicago Board of Trade is a corporation organized under the laws of the state of Illinois. It has about 1,600 members, nearly one-fourth of them brokers, who buy and sell on the board mostly for other people. Outside of the general provisions of its charter, of Illinois law, and of Federal regulations, the board is self-governing and sets up provisions controlling the transactions in grain. Since 1929, however, the Federal government has come to exercise more detailed control over speculative transactions.

In the case of commodities, this control is exercised by the Commodity

Exchange Administration of the U.S. Department of Agriculture. The CEA, in respect to trading in cotton and wheat, has the power to limit the holdings of any one trader, to obtain periodic reports from brokers, and to impose rules intended to keep commodity trading on an open-and-above-board a basis as possible.

The Minneapolis and Kansas City boards of trade, as well as Chicago's, are important centers for trading in wheat. Cotton is actively dealt in on the New Orleans and New York markets, and trading in the other food commodities centers in exchanges in New York and Chicago.

Wheat is classified into a number of contract grades, any one of which may be delivered on ~~a~~ sale on the board of trade. In the case of some of them the buyer must pay a premium, and in the case of lower grades the seller must accept a discount. The premiums are usually less and the discounts more than prevail for these grades of grain when purchased for milling. The board has made this provision to prevent "corners" or the control of the available supply of contract wheat by one person or a small group. Since almost any kind of wheat can be delivered, a successful "corner" would involve the control of the supply of all grades, which is almost impossible.

Trading on the Exchanges. Transactions may be in *spot* or *cash* wheat, which is wheat sold for immediate delivery, or in *futures*. The future contract is an agreement between the buyer and the seller whereby the seller agrees to sell, and the buyer to purchase, a certain number of bushels of wheat in a certain month at a certain price. Those who enter into future contracts rarely expect actually to deliver wheat or accept delivery of wheat. The buyer expects to resell and the seller to *cover*, or offset his sale of a future by the purchase later of an equivalent future.

Thus there exist on the Chicago Board of Trade two markets for wheat, the *spot* or *cash* market and the *future* market, which tend to move up and down together with a fairly constant difference in price, or *spread*, between them. Usually the future price for future months in the same crop year is above the spot price by approximately the cost of carrying wheat to the delivery date on the future contract. The spreads may, however, become larger, as in the fall of 1931, when spring futures were 18 cents a bushel above cash wheat, or over twice the usual spread. Again, the spread may become smaller than usual or, in extreme cases, the future may become less than the cash price. In fact, after the Second World War, it became the rule for several years for the future price to be below the cash price, rather than the exception. The reason for this reversal of the customary relationship was apparently that the actual shortage of food abroad and the extreme strength of domestic demand due to high income were consistently underestimated by traders and speculators. As a result, the price of the future was lower than supply and

demand conditions warranted, and as the true situation became apparent the price went up.

The existence of both a spot and a future market for wheat, the practice of covering on future contracts, and of a fairly constant margin between spot and future prices are essential in the hedging process.

Hedging Explained. Hedging is the attempt to transfer to the general speculative market the price risk involved in a transaction in actual goods by means of a purchase or sale in the futures market. If the spot transaction has been a purchase of wheat, the buyer will sell a comparable amount of futures. The hedge will be completed when the person undertaking the hedge sells the actual wheat and buys a futures contract to cover the one sold previously. If a miller has sold flour for delivery at a later date but does not possess the wheat from which it is to be milled, he will protect himself by a purchase of wheat on the futures market. When he buys actual wheat later to grind into flour, the miller will sell a futures contract to cover the one bought earlier. Thus the hedge is completed. Every completed hedge involves two purchases and two sales. If the spread between the spot and future prices remained unchanged, neither of the above dealers in actual goods should either obtain a speculative gain or take a speculative loss. The hedging process will be illustrated by the transactions undertaken by a cooperative elevator in order to avoid price risk.

Suppose the manager of a cooperative elevator wishes to hedge the wheat which the farmers are delivering to the elevator. The cooperative does not wish to take the risk of a decline in the price of wheat before this wheat is sold to millers, exporters, or others. The elevator is receiving wheat which, for our purposes, amounts to a purchase of spot wheat. To protect the cooperative against a price decline, the manager then sells March future wheat equal to the day's deliveries, let us say 10,000 bushels. Suppose that the terminal price for spot wheat at this time was approximately \$1.95 and that the manager sells a March future of 10,000 bushels at \$2.03. And now suppose that, by the time the manager is able to sell this actual wheat, the price for spot wheat has declined 5 cents, that is, to \$1.90, terminal-market-point basis. This price is 5 cents less than the price prevailing at the time the wheat was delivered to the cooperative elevator, and there is a loss on the transactions in spot wheat. Now, however, the manager buys a March future of 10,000 bushels at \$1.98, or 5 cents per bushel less than the price at which he sold the March future at the time he bought spot wheat. Thus the loss of 5 cents per bushel, taken on the transaction in spot wheat, is offset by the gain of 5 cents per bushel in the transaction in future wheat. Thus the burden of price risk was transferred to the general speculative market. The hedging transaction is summarized below:

ECONOMICS WITH APPLICATIONS

Spot Transactions	
Received Sept. 3 10,000 bu. wheat; current price.	\$1.95 per bushel
Sells Sept. 23 10,000 bu. actual wheat.	1.90 per bushel
Loss on actual wheat.	\$0.05
Future Transactions	
Sells on Sept. 3 10,000 bu. March futures at.	\$2.03 per bushel
Bought on Sept. 23 10,000 bu. March futures at.	1.98 per bushel
Gain on futures.	\$0.05

If the price of actual wheat had risen, say to \$2.01 per bushel, then a gain of 6 cents per bushel would have been possible by holding the wheat. By hedging, however, this gain would be offset by a loss of 6 cents a bushel on the future transaction, the elevator being forced to buy a future to cover at \$2.09. This assumes that the spread between spot and futures remains constant.

Perfect and Imperfect Hedges. Hedging is widely used by buyers, exporters, and processors of staple farm products, even though it does not always permit the transference of all risk due to price fluctuations. If the spread between spot and future prices remained unchanged, it would be possible for dealers in these goods to avoid speculative losses or gains by hedging and to concentrate their attention on the conduct of their business for the ordinary business profits obtained in their activity. But, because these price spreads become narrower or expand from time to time, those who hedge do on occasion take appreciable speculative losses or receive speculative gains. Nevertheless, though the usual hedge is not perfect, in most cases the speculative gain or loss is less than it would be if no hedging were attempted.

Margin Trading. When anyone—a miller, elevator operator, or speculator—buys or sells futures, he does not pay the full amount required to cover the transaction. Instead he deposits with his broker a partial payment called a *margin* to cover any possible price fluctuation and as earnest that he will pay the full amount, if necessary. Ordinarily margins run between 10 and 20 per cent of the value of the entire transaction, and thus traders are enabled to deal in much larger quantities than their immediate cash resources would enable them to. Since most traders are constantly replacing sales with purchases and vice versa, they rarely in any case, have to come forward with the full amount.

At the end of 1947, the government, through very forceful requests, caused the grain exchanges to raise margin requirements to 33 $\frac{1}{3}$ per cent of the value of the transaction and asked Congress for statutory power to regulate margins in grain trading, as it already has in the case of stock-market transactions. The government's purpose was to limit the amount

of purely speculative trading in grain, which, it was felt, was pushing prices unduly high.

There is unquestionably something offensive in the spectacle of speculators in grain or other commodities, who never intend to and never do own a pound of the actual product, dealing in it and sometimes making great amounts of money from this kind of transaction. Unquestionably, too, the price of the commodity is pushed higher up or down than it could otherwise go by the activities of speculators, as was the case when the cotton market broke violently in the fall of 1946. At such times the producers or the public may suffer on account of these speculative activities.

On the other hand, despite ups and downs caused by speculation, a season's average price for wheat or cotton is probably the same as it would be in the absence of speculation, and sometimes, as was the case in the fall of 1947, speculative activity is useful in putting the commodity price at its proper level more quickly than would be the case otherwise. Most important, the presence of speculators in the commodity market is required to make the volume necessary for successful hedging. In the absence of hedging facilities, millers, cotton ginners, elevator and warehouse operators, and others who deal in commodities would have to carry the risk of price fluctuations, and in order to compensate themselves they would charge higher prices, thus widening the spread between farmer and consumer. The problem of regulation is how to hold down excessive speculation and at the same time maintain sufficient volume in the market to enable hedges to be carried adequately.

Risk Transference through Contracting. There are frequent opportunities for a particular enterpriser to transfer risk to others through advance contracts for purchase or sale at a specified price. The successful bidder on a large building contract often protects himself through subcontracts for plumbing, for lumber, for electrical work, and so on. Farmers may contract for the sale of some products prior to harvest or even prior to planting. This largely relieves the farmer of price risk and is a general policy in the growing of sugar beets and often in the growing of products for canneries and of high-grade seeds. Labor agreements covering wages, although they are not enforceable, remove some risk, the amount depending on the moral influence of the agreement on laborers and their leaders.

Much of price risk could be transferred if enterprisers produced only upon previous order and did not produce in anticipation of sale. This, however, is largely impossible in farming because of the long period between the initiation of production and its culmination. In manufacturing it is unsatisfactory because it tends to amplify seasonal swings in

production and because of the general disinclination of retailers and wholesalers to order sufficiently in advance. Certainly the consumer will not anticipate his wants to any large extent.

Summary. Entrepreneurs are constantly seeking to avoid or transfer the risks of economic activity. Many devices, notably insurance, have been developed to this end and have reduced the risks faced in earlier times. But many uncertainties remain, particularly those that have to do with the market, and the task of assuming these risks falls on the entrepreneurs. Not content with this situation, entrepreneurs continually attempt to make future prices more definite through agreements among competitors. The urge to such action was evidenced by the widespread desire of businessmen to have the antitrust laws "liberalized" and by their strong approval of those parts of the National Industrial Recovery Act which offered the possibility of price agreements.

THE THEORY OF PROFIT

The theory of pure profit, or return to the entrepreneur after the returns to all of the other factors of production have been deducted, has been presented at several points throughout the preceding chapters. The reader should review especially the pages in Chap. 6 which explain the different uses of the term *profit*. Pure profit is the residual left after all costs of doing business, including imputed wages and interest, and imputed rent, have been subtracted. That not all enterprisers receive such a profit is evident. But equally obvious is the fact that some do. What characteristics of the entrepreneur or what economic circumstances make it possible for some entrepreneurs and not others, to receive pure profits?

Theoretically under perfect competition, when the equilibrium position has been reached, there are neither pure profits nor losses. In the course of getting to that equilibrium, however, there are opportunities for profits, which under competition serve as a magnet to draw others into the industry. Monopoly profits arise because the firm faces a sloping demand curve and can thus be at equilibrium at a point short of equating cost and price. Monopoly profits arise from the price advantage to be gained from controlling supply and thus on the surface at least differ from profits under competition, which are possible only in a nonequilibrium situation and which arise from two sources: (1) assumption of risk, and (2) superiority of performance.

Profit and Risk. A principle widely advanced to explain why certain entrepreneurs obtain profits is that profits are the return for successful assumption of risk. The particular risks upon which emphasis is laid are the market risks. The successful entrepreneur will ordinarily attempt to eliminate or transfer as much risk as possible, as explained earlier in the chapter. But it should be clear from facts and principles presented

earlier in this book that a large part of the variations in market conditions are beyond the foresight of even the most able entrepreneur. Either market success or failure, aside from the extent to which their occurrence can be governed by business ingenuity, is often a matter of luck. Fortuitous events deliver profits to those enterprisers whose activities are in fortune's path, whether deserving or not. Unfortunate events bring failure upon those whose economic activities are affected by these events, including, though less often, able entrepreneurs. It is thus emphasized that pure profits consist in many cases of fortuitous, or chance, gains.

As we previously pointed out, risks arise from any business decision, including a decision to keep affairs going in exactly the same way year after year. Risks, however, are more likely to arise, or at least to be greater, for that entrepreneur who strikes into new fields, but so are the rewards. Here we come to the concept of the entrepreneur as innovator, and since innovation is risky, extra rewards above the normal returns on his capital invested and labor time spent are required to tempt a man to try something new. To take a concrete example, everybody knows that Americans will buy automobiles of conventional design. Nobody knows, however, if there is a market for rear-engine automobiles. A person investing his money and time in a company manufacturing such cars naturally expects a profit greater than he could get by investing in one of the established companies or working at a job in such company. The anticipated extra profit induces the investment and the expenditure of time.

If the innovation—the rear-engine automobile in this case—is successful, the company producing it will make enormous profits. These, incidentally, will be in the nature of monopoly profits, because one company only will be supplying the product, and it will be able to charge a price far above cost. Other companies may get in the field later and reduce its profits.

Profit and Managing Ability. Two entrepreneurs who buy their cost factors and sell their product in the same markets may have widely differing net incomes from their enterprises. The matter of management appears, therefore, to be significant in understanding the return from independent enterprise. Some enterprisers use less of the cost factors to get the same product than do their competitors, or they may use the same amount of the factors but bring out a product of higher quality which commands a higher price.

Superior managing ability capable of earning a profit may consist of something simple, like the ability to win the respect and confidence of the employees, so that they work harder for the superior manager than they do for the average. On the other hand superior management ability may show itself in the rearranging of the layout of an entire plant, so

that operations are conducted more efficiently and cheaply. In an instance like this the manager presumably has made a considerable innovation, and so we come round to innovation as being at the central core of entrepreneurship and thus of profits.

The likeness of profits to other kinds of return is also shown by the fact that the return for superior managerial ability has been likened to rent, in that it is a surplus due to superior managerial ability, and there is thus a so-called rent theory of profit. Again it has been held to be only a wage payment for unusual skill. Certainly such ability is relatively rare, and the degree of ability of different managers varies widely. To this extent the return is similar to economic rent.

Managers of corporations are hired and are paid salaries which may be enormous. If these salaries include, as they sometimes specifically do, a share in the profits, then hired managers, rather than the owners receive part at least of the profits. Yet supposedly profits are the reward of the owners of a business.

It is to be feared that all that has been said on the subject merely illustrates the elusive nature of the profit concept. The profit resulting from taking a risk and initiating an innovation appears in the form of a temporary monopoly profit. That is the trouble with the concept; whenever particular profits are examined, they can be assimilated to something else—monopoly returns, interest, wages, or rent. Nor are profits even always conceptually separable from all of these. In the case of managers of a large corporation, it is difficult, if not impossible, to tell whether their returns are wages or profits.

Entrepreneurship and the Corporation. The point last made brings to the fore one of the questions that most interests modern economists, which is, "Who is the entrepreneur in the large modern corporation, and who receives the profits, traditionally the reward of ownership?"

In the case of a small enterprise, a farm, a retail store, a small family corporation, it is clear that the owner and the entrepreneur are the same and that the profits, if any, go to him, as according to theory they should.

In the case of a large corporation, these identities are not so clear. The owners legally are the stockholders, but in most large corporations these legal owners exercise none of the function of management. It is true that stockholders can vote, but they are numerous and scattered; the Pennsylvania Railroad and the American Telephone Company, for instance, have hundreds of thousands of stockholders no one of whom owns as much as 1 per cent of the stock outstanding. Many of them take no interest in the corporation's affairs, except for an occasional look at the financial page of a newspaper, and never come to the annual stock-

holders' meeting. Either they never vote their stock, or they turn their voting rights, by a device known as a *proxy*, over to the management. The management is thereby enabled to perpetuate itself and establish such policies as it pleases.

Incidentally, most corporate managements are divided into two classes: the directors, theoretically elected by the stockholders; and the executive officers, the president, secretary, treasurer, comptroller, etc., chosen by the directors. In some instances the officers are also the directors, but in most cases the directors, except for one or two active officers, are outsiders who represent large stockholders, if there are any such, or banks or investment houses interested in the corporation. In many corporations the directors closely oversee policies and the choice of personnel; in more cases they leave the conduct of affairs to the active officers.

The directors and officers ordinarily own comparatively little stock in the corporation. Even if they own a good deal of stock from the viewpoint of an individual, it generally is still a small part of the total outstanding. When a corporation has anywhere from 1 to 10 million shares, the owners of several thousand, perhaps even a hundred thousand shares, are very much minority owners. Nevertheless the management (collectively), at best a minority owner and sometimes not an owner at all, controls the affairs of the corporation and for all practical purposes can be called the entrepreneur responsible for decisions as to policy.

Still, the greatest part of corporate profits go to the stockholders. There have been exceptions, as in the case of the Bethlehem Steel Corporation before 1929, when the management, by virtue of its inside position, paid itself secret bonuses larger than the dividends received by the stockholders. On the whole, though, management is content with large salaries and bonuses which give them part of the profits. In effect, because traditionally owners got the profits, the stockholders continue to get them in large part. Certainly the return to stockholders cannot be considered the reward for superior management which they do not perform. It is true, however, that the stockholder does risk his investment and thus is probably entitled to a reward greater than that of the bondholder, because he takes a greater chance, though in actual practice his relationship to the corporation is similar to that of the bondholder, in that all he has done is to furnish some of the corporation's capital.

Profits and the Farmer. In fields of economic activity, such as agriculture, in which the relatively small individual enterprise is more frequent, there exists a more direct relationship between managerial skill and profits. Though the return to agriculture as a whole is not large, there is often an opportunity for the able farmer to make a return above costs and rent for his land. In spite of paying approximately the same for

labor, capital, and materials and selling at about the same price, the successful entrepreneur must obtain profits through more efficient uses of his resources. In cases of merchants and similar businessmen, salesmanship as a means to large volume is also important. The significant point is that in these cases the owner and manager are one.

Profits in the Large. It has been often stated that by and large profits are offset by losses, so that there is no pure profit in the aggregate. It is undoubtedly true that even in the most prosperous times there are some business failures, 3,476 having been reported for 1947, the lowest peacetime figure since 1871. Further, these reported failures do not include the numerous instances of those who sold out their business at a loss. Figures of profits for small enterprises include so large an element of wages, interest, and rent as often not to leave any pure profits. In the

TABLE 39. TOTAL CORPORATE INCOME BEFORE TAXES
(Millions of dollars)

1929.....	\$9,818	1939.....	\$ 6,467
1930.....	3,303	1940.....	9,325
1931.....	-783	1941.....	17,232
1932.....	-3,042	1942.....	21,098
1933.....	162	1943.....	24,516
1934.....	1,723	1944.....	24,333
1935.....	3,224	1945.....	20,389
1936.....	5,684	1946.....	21,840
1937.....	6,197	1947.....	29,784
1938.....	3,329		

SOURCE: *Survey of Current Business*, July, 1947, National Income Supplement, Table 17.

case of corporations, however, which make up so large a segment of our business structure and in the accounts of which the returns to the other factors of production can be fairly well separated, profits seem to emerge with considerable regularity. In the years since 1929 only in two cases did corporations in the aggregate fail to earn profits, and this was in the worst depression years. In the years of moderate business like 1930, 1934, and 1938, they managed as a whole, to make money.

Whether business as a whole is profitable or not and whether actual profits are "pure" or the product of monopoly power are unsettled questions. It is clear, however, that any number of individual businesses make profits, and enough businesses make them to encourage others to innovate, to take chances. In an economy of private enterprise, profit is the incentive which causes men to launch new businesses or to expand old ones. It is not only the mainspring of economic change and progress, it is the incentive for men to engage in business at all, to employ labor, to use capital, and to rent land.

Questions and Problems

1. Distinguish three general classes of risks. By what means may each type be (a) avoided or (b) transferred?
2. Distinguish the risks which are frequently insured from those which are not ordinarily insured.
3. What factors are considered in determining the rates on an ordinary-life insurance policy?
4. Compare the chief features of each major type of life insurance policy. Explain how these features affect the premium rates of each type of policy.
5. Describe the social insurance system in the United States.
6. Investigate farmers' mutual fire insurance in your state. Compare the rates charged with those of stock companies in your region and with the average rate charged by mutuals in the United States.
7. Show how a wheat buyer who purchases 10,000 bushels of wheat at the country point on Sept. 5 and sells at a terminal market on Sept. 20 may largely protect himself during this fifteen-day period against a loss arising out of a decline in wheat price. Trace all the transactions with assumed prices.
8. Why do certain entrepreneurs receive pure profit?
9. In the case of a large corporation, with no one owning more than 1 per cent of the stock, is there an entrepreneur?

Suggested Readings

1. R. Riegel and J. S. Miller, *Insurance Principles and Practices* (1947), contains a full statement of the principles of insurance and a description of all forms of insurance.
2. M. Stewart, *Social Security* (1937), is a discussion of the American system.
3. V. N. Valgren, "The First 100 Years of Cooperative Farm Insurance," in *American Cooperation* (1939), is a historical review.
4. *Life Insurance for Farm Families* (1947), U.S. Department of Agriculture, Miscellaneous Publication No. 621.
5. W. H. Rowe and L. K. Smith, "Crop Insurance," in *Farmers in a Changing World* (1940), describes Federal crop insurance.
6. F. W. Taussig, *Principles of Economics* (1939), Vol. II, Chaps. 48-51, contains a much more complete discussion of profit than is included here.
7. A. A. Berle and G. Means, *The Modern Corporation and Private Property* (1933), is the classic statement of the issue as to who is the entrepreneur in the large corporation.
8. M. E. Dimock and H. K. Hyde, *Bureaucracy and Trusteeship in Large Corporations*, TNEC Monograph No. 11, discusses the separation of ownership and control and the diffusion of ownership.

CHAPTER 19

INTERNATIONAL TRADE AND AGRICULTURE

Our discussion of economics so far has been in terms of dealings within a country, with particular reference, of course, to the United States. We have not considered the impact on production, supplies, and prices in a particular country caused by the fluctuations of imports and exports, the flow of credit and currency across national boundaries, and the barriers to and controls over that flow of goods, services, and credit. The following two chapters will go into some of the more important aspects of international trade, with particular reference to its effect on agriculture.

Conditions of International Trade. The period after the Second World War is one in which it is hard to write about international trade. The old rules, methods, and customs have largely been swept away, and in the unsettled state of the world no new definitive pattern has yet emerged. Generalization is difficult and there is not much value in presenting a host of unrelated details. In short, with the shape of international trade in constant flux, getting a picture of it in clear focus is almost impossible.

Because of the ever-growing importance of the United States in world affairs, to which its international trading and financial operations make so large a contribution, it is not, however, a subject that can be neglected. We shall begin by pointing out the differences between the postwar state of affairs and the set of assumptions that used to underlie most discussions of the subject. After having thus cleared the ground, we shall try to elucidate certain facts as well as certain basic tendencies which influence international trade regardless of the particular way it is conducted.

Traditionally expositions of the problems of international trade were couched in purely economic terms and revolved about the working of the law of comparative advantage. This law states, it will be remembered, that individuals and regions tend to specialize in the production of those things which they can produce most efficiently and cheaply, or in the production of which they have the least disadvantage, and then exchange them for other things which can be made more cheaply in other regions.

It was assumed that trade would travel along the channels set by comparative advantage because, being carried on by private firms or individuals (another assumption) seeking maximum profit and competing with each other, they would naturally trade where they could buy cheapest. Lastly, it was assumed (the student should note how many assump-

tions were involved) that the monetary transactions growing out of international trade were in gold-standard currencies, the relative value of which reacted automatically to changes in supply and demand conditions.

Since the First World War, however, and particularly in the period since 1930, international trade has been conducted to an increasing degree not on the basis of the economic benefits to be derived by exchanging goods which the exchanging countries can produce advantageously, but rather on the basis of importing or retaining within a country those articles best suited for war purposes and of exporting only those goods which must be sent out to obtain the required imports. In other words, international trade has been conducted not in accordance with economic principles, but on a military, or at the very least a political, basis. The German and Italian drives for "autarchy" or economic self-sufficiency during the thirties were motivated by military considerations, their hope being that they could put themselves in shape to withstand blockade.

After the Second World War, not only did outright military motives prevent the free flow of trade, but there appeared a new obstacle. This was the shattered condition of so much of the world, which made it impossible for many countries to produce enough goods for export to offset needed imports of food and other raw materials. Even more of a handicap to European countries needing to import was their loss of former sources of foreign exchange, such as payments from other countries for shipping, insurance, and tourist services, and, most important in the case of England, loss of interest payments from abroad. This came about because the English had to sell their foreign securities during the war in order to have the means of acquiring foreign food and munitions. England after the war actually exported large quantities of goods, but it was the loss of these other means of obtaining payments from abroad that was responsible for that country's inability to pay for its imports. In the interest of bringing about as rapid a recovery as possible from the effects of the war, most countries maintained a close control over international trade and exchange, in order to permit only such imports as would contribute to the revival of economic activity and to prevent imports that would compete with the domestic industries that were beginning to get under way. Such interference, however well intended or even necessary, went far to prevent the free working of the principle of comparative advantage.

Even before the Second World War international trade was to a large extent conducted not by competing private firms, but by governments, for military and political reasons. Since the war governments have controlled foreign trade for the same reasons and have added controls to hasten recovery from the effects of the war. Even in the United States, the country which has made the most strenuous efforts to return to so-

called normal conditions, a large part of the export trade, especially of agricultural commodities, is being conducted directly by the government and all exports are subject to government control. Almost all of England's foreign trade is carried on directly or is very stringently controlled by the government. The same thing is true of Argentina, the most important commercial nation in Latin America. It goes without saying that Russian foreign trade is completely monopolized by the state. Further, foreign trade is not now conducted on the basis of one country exchanging its goods and services for those of another, but very largely on the basis of credit or outright gifts from one country—chiefly the United States—to the others. Thus under the lend-lease program during the war, under the United Nations Relief and Rehabilitation Administration, and under the Marshall plan, a large part of our exports have been in effect gifts to the recipient countries.

When the purpose of controls over international trade has not been related to defense or recovery from the effects of the war, it has often been for other reasons than to obtain goods as cheaply as possible. Among these other purposes have been the maintenance of the exchange value of the domestic currency. More will be said on this subject below, but here suffice it to point out that this generally has involved preventing an excess of imports over exports, because such an excess would ultimately cause the currency of the importing country to fall in value in terms of other currencies. The nature of the postwar trade situation, already noted in this section, tended to make the excess of imports in the case of war-devastated countries very great indeed, thus leading to more and more stringent controls on imports.

Another motive for controlling foreign trade and dealings in foreign exchange has been the hope of insulating one country from depressions originating elsewhere. This last has been one of the main reasons for the general adoption of managed currencies. Under the automatic gold standard severe price declines in an important trading country tend to affect all others.

To complete the list of differences with the traditional picture, it may be noted that instead of being carried on in currencies readily convertible into gold and thus into each other, international trade is actually carried on in inconvertible, managed currencies. Several countries, notably Germany in the interwar period (and to a certain extent France in 1947) set up all kinds of special currencies for foreign trade, with different values for imports and exports and in some cases with different values for payments to each country with which they traded. In consequence, international currency arrangements during the interwar period got to be, and have largely remained, fearfully complicated.

The United States very actively attempted to persuade as many other nations as possible to join the International Trade Organization, the charter of which declares for freedom of trade. It was hoped that the adherence of other countries to this charter would help in restoring foreign trade to at least a comparatively free basis, and through the Marshall plan the United States attempted to put Western Europe in a sufficiently healthy economic condition to carry on foreign trade on traditional terms.

In the disturbed state of the world, with the United States and Russia engaged in a "cold" war, with "hot" wars going on in China and elsewhere, with the economy of Western Europe still suffering from the aftereffects of the last conflict, and with so large a part of international trade under state control, it is very doubtful if our policy of attempting to restore prewar trade conditions will succeed.

Whether our government succeeds in this effort or not, it still is the fact that though foreign trade in large part may not be economically motivated, it nevertheless has very important economic effects and, in any case, much of our trade, especially with Latin America, is carried on for economic reasons. Thus in order to understand our economic system we have to know about the way foreign trade is conducted and study its effects on the economy in some detail. We shall begin by presenting some pertinent facts about the foreign trade of the United States.

FOREIGN TRADE OF THE UNITED STATES

Importance of Foreign Trade. Despite the restrictions and controls to which it is subject, international trade is still a very important part of the total trade of the United States. In 1947, 15.4 billion dollars' worth of United States goods were exported, of which about one-fourth consisted of agricultural goods as such, with another fourth consisting of processed agricultural goods like textiles. One-third of our cotton crop, nearly the same fraction of our wheat and tobacco crops, 7.5 per cent of our fats and 13 per cent of our cheese were exported. Although only 9 per cent of total United States production, as well as about the same proportion of United States agricultural production, is exported, for many a commodity, the difference between profit and loss is represented by these additional sales of 9 per cent. For the commodities which are heavily exported the importance is obvious. The cutting off of cotton and wheat exports would entail enormous and painful readjustments for the growers, and what happens to wheat affects the other grains, principally corn.

Nor should it be forgotten that international trade does not travel down a one-way street. Even if the traditional concept that international trade

is the resultant of the exchanges of goods and services of equal value between countries is now more theoretical than real, it is still true that we receive a good many goods in return for what we export. All our tin, bananas, coffee, tea, coconut oil (an important soap ingredient), silk, and cocoa are imported, as are the major part of our wool and sugar supplies. We even import considerable quantities of iron ore, petroleum, and bauxite, the raw material from which aluminum is made, not to mention cer-

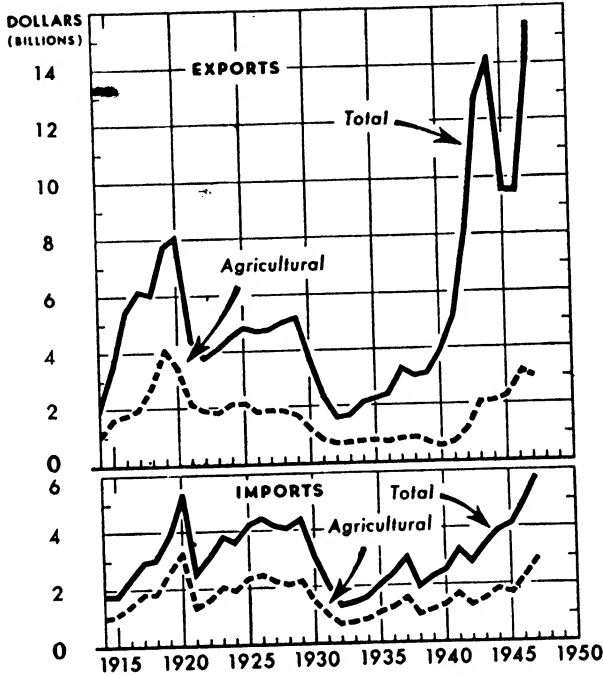


Fig. 34. Value of United States exports and imports 1914-1947. Source: Neg. 46108-X, BAE, USDA.

tain specialty metals like manganese. And, of course, before the last war all our rubber was, and now a major part still is, imported. These are a few examples of an immensely long list of necessities which must be brought into the country. In total, in 1947 our imports of goods came to 5.6 billion dollars.

Important as foreign trade is for the United States, it is even more important for countries like the United Kingdom, Switzerland, and Denmark, a very much larger proportion of whose national income is obtained from exports than is the case for the United States, and which also need to import proportionately much more food and raw materials.

TABLE 40. EXPORTS AND IMPORTS: VALUE OF AGRICULTURAL COMPARED WITH ALL COMMODITIES, UNITED STATES, 1914-1947
(Millions of dollars)

Year	Exports		Imports	
	All commodities	Agricultural	All commodities	Agricultural
1914	2,071	997	1,789	985
1915	3,493	1,608	1,779	1,088
1916	5,423	1,755	2,392	1,408
1917	6,170	1,981	2,952	1,818
1918	6,048	2,751	3,031	1,807
1919	7,750	4,093	3,904	2,608
1920	8,080	3,443	5,278	3,249
1921	4,379	2,114	2,509	1,319
1922	3,765	1,884	3,113	1,607
1923	4,091	1,820	3,792	2,028
1924	4,498	2,110	3,610	1,911
1925	4,819	2,136	4,227	2,340
1926	4,712	1,817	4,431	2,416
1927	4,759	1,885	4,185	2,221
1928	5,030	1,863	4,091	2,100
1929	5,157	1,693	4,399	2,218
1930	3,781	1,201	3,061	1,469
1931	2,378	821	2,091	1,008
1932	1,576	662	1,323	668
1933	1,647	694	1,450	732
1934	2,100	733	1,636	821
1935	2,243	747	2,039	1,072
1936	2,419	709	2,424	1,242
1937	3,299	797	3,010	1,579
1938	3,057	828	1,950	956
1939	3,123	655	2,276	1,118
1940	3,934	517	2,541	1,284
1941	5,020	669	3,222	1,668
1942	8,004	1,179	2,769	1,271
1943	12,842	2,073	3,390	1,513
1944	14,163	2,096	3,879	1,818
1945	9,589	2,260	4,075	1,708
1946	9,500	3,139	4,818	2,318
1947	15,372	3,000	5,736	2,900*

SOURCE: *Agricultural Outlook Charts*, 1948, p. 2.

* Estimated.

Total Exports. In terms of current dollars, the United States foreign trade in merchandise, both exports and imports, increased quite consistently from 1890 until 1929.

After 1929 there was a sharp decline and not till the influence of the war made itself felt in 1940 and 1941 did the dollar volume equal that of 1929. Since then, both in dollar and in physical volume, the quantity of exports has been enormous. Up to 1940 the dollar volume of imports roughly paralleled exports, though at a lower level. Since then, while

TABLE 41. UNITED STATES FOOD EXPORTS, 1934-1938, 1947, AND ESTIMATES FOR 1948*

Commodity	Unit	Amount			Per cent of production		
		1934-1938*	1947*	1948*	1934-1938*	1947*	1948*
Total grains....	1,000 metric tons..	2,562	15,142	13,654	2.7	10.5	11.1
Bread grains..	1,000 metric tons..	1,583	10,940	12,054	7.7	34.3	32.4
Coarse grains.	1,000 metric tons..	979	4,202	1,600	1.3	3.7	1.9
Eggs (shell equivalent) ..	1,000 metric tons..	†1	227	210	†0.1	7.4	6.8
Dried fruit.....	1,000 metric tons..	191.6	129.3	65	36.0	28.0	11.0
Processed milk..	1,000,000 pounds..	38.0	970	†1,100	1.4	23.1	25.8
Fats and oils....	1,000,000 pounds..	§440	708	900	§5.4	7.5	9.1
Meat.....	1,000,000 pounds..	||216	499	150	||1.2	2.0	0.6
Horse meat....	1,000,000 pounds..	2	89	100	20.0	46.0	67.0
Cheese.....	1,000,000 pounds..	1.3	152	||210	2.0	12.6	17.5
Fresh fruit....	1,000 short tons...	590.6	655	460	4.6	3.9	2.8
Beans and peas.	1,000 long tons....	6.4	189	214	1.0	20.0	19.0

SOURCE: "Food Prices, Production, and Consumption," *Report of the Joint Committee on the Economic Report*, 80th Cong., 1st Sess., Senate Doc. 113, Table XV.

* Fiscal years.

† Calendar years.

‡ Estimated maximum available for export.

§ 1937-41 average.

|| 1935-39 average.

imports have increased, they have not done so at all in proportion to exports. The inability of foreign countries to export to the United States has been one of the basic reasons for foreign currency and import controls. It may be noted incidentally that, during the period of the First World War, United States exports also greatly exceeded imports.

Of our total production of movable goods the percentage exported varied from 12.8 per cent in 1899 to 9.7 for 1909, rose to 15.7 in 1919, and averaged about 10 per cent for each biennial period from 1921 to 1929,

TABLE 42. AGRICULTURAL PRODUCTS EXPORTED—VALUE, BY MAJOR GROUPS:
1921 TO 1945
(In millions of dollars. Excludes reexports of foreign products.)

Period	Total agricultural exports	Animals and products, edible	Dairy products and eggs	Grains and preparations	Vegetables, fruits, and nuts	Miscellaneous animal and vegetable products	Cotton	To-bacco
1921-1925, average	2,013.2	283.2	38.8	474.3	102.0	145.3	805.0	164.6
1926-1930, average	1,691.6	189.8	23.6	318.6	144.3	105.1	765.7	144.5
1931-1935, average	731.7	63.9	6.9	55.4	94.4	40.8	366.5	103.7
1936-1940, average	701.2	44.6	8.6	104.6	91.4	59.2	282.9	109.8
1938	827.5	48.8	6.7	223.5	112.4	51.9	228.6	155.7
1939	655.1	54.2	7.8	99.5	100.5	72.7	243.0	77.4
1940	516.6	36.2	18.1	76.4	55.3	73.3	213.4	44.0
1941	669.0	140.9	130.8	81.3	92.3	75.8	82.6	65.3
1942	1,178.9	453.2	306.3	68.6	88.2	96.3	98.6	67.8
1943	2,074.2	761.8	457.0	125.3	158.3	217.2	184.2	170.3
1944	2,096.3	700.1	563.6	150.6	232.0	189.0	114.6	146.4
1945	2,259.6	397.5	425.3	444.0	282.6	192.4	278.7	239.1

SOURCE: *Statistical Abstract of the United States, 1947, Table 693.*

TABLE 43. AGRICULTURAL PRODUCTS IMPORTED—VALUE, BY MAJOR GROUPS:
1926 TO 1945
(In millions of dollars)

Group	1926-1930, average	1931-1935, average	1936-1940, average	1941	1942	1943	1944	1945
Agricultural imports, total	.....	.....	1,249.1	1,668.4	1,272.6	1,514.0	1,819.2	1,708.5
Commodities listed, total	2,010.6	822.3	1,177.9	1,589.6	1,216.1	1,466.1	1,748.5	1,618.5
Animals and products, edible	50.1	16.1	45.7	48.7	51.0	54.4	52.1	55.5
Dairy products and eggs	38.2	14.2	14.2	6.8	8.5	5.5	2.4	4.7
Hides and skins, except reptile	116.9	38.6	50.1	82.4	76.9	65.0	59.3	46.2
Animal fats, inedible	2.1	3.5	1.1	1.1	3.8	2.5	4.2	2.6
Grains and preparations	24.5	28.2	44.3	20.7	17.3	144.0	300.1	79.3
Fodders and feeds	14.8	6.7	11.3	12.7	10.4	15.3	23.2	20.3
Vegetables, fruits, nuts	125.5	66.3	79.3	81.8	49.3	75.8	105.2	152.4
Vegetable oils (expressed) and oilseeds	147.9	71.7	112.9	91.6	66.5	83.2	97.3	85.2
Cocoa, coffee, tea, spices	373.4	188.4	204.1	265.6	256.7	354.0	417.2	444.2
Sugar and related products	222.2	122.0	152.1	178.4	142.3	216.1	275.4	266.1
Beverages, excluding spirits	.8	6.1	11.4	6.0	4.5	13.9	28.7	17.0
Crude rubber	294.4	74.6	206.3	419.0	119.7	36.3	79.4	104.9
Tobacco, unmanufactured	57.0	27.1	34.3	37.9	37.0	41.9	60.3	75.4
Cotton, unmanufactured	42.7	7.4	11.4	22.2	20.1	17.3	12.8	28.2
Wool and mohair, unmanufactured	78.8	18.7	61.3	204.9	311.3	295.8	186.2	241.2
Raw silk	368.2	115.1	108.7	61.8	.1	.....	.....	1.1
Vegetable fibers, except cotton and silk	52.8	17.8	29.4	48.0	40.8	45.2	44.8	34.3

SOURCE: *Statistical Abstract of the United States, 1947, Table 694.*

inclusive. This proportion fell during the 1930's, rose to 12 per cent during the war, and in 1945 was 9.3.

Agricultural Exports. Table 42 shows agricultural exports in *dollar value*. Agricultural exports have formed a declining percentage of the total exports of merchandise from the United States. Whereas from 1800 to 1905 agricultural exports totaled 61 per cent of the value of all exports, this percentage fell consistently until the war period of 1916 to 1920 (when it was 42 per cent), rose to 47 from 1921 to 1925, and then fell sharply to 36 per cent from 1926 to 1935. In 1947 it was only 24 per cent. With the great post-1945 demand for food it rose to about 30 per cent.

Table 41 indicates how large a part of the production of the major food crops is exported, which points to the importance of the export market to the producers. In addition, cotton and tobacco are among the most important of our agricultural exports. Indeed before 1940 cotton used to be the most valuable single agricultural export and before that the most valuable item in the whole export trade of the United States.

In 1935 to 1939 only 3 per cent of our food production was exported; during the war this proportion rose to 10 per cent and in 1947 stood at about 8 per cent.

Agricultural Imports. Agricultural imports have remained about a constant proportion of total imports since 1910, varying between 45 and 65 per cent of all merchandise received from abroad.

Our principal agricultural imports are hides and skins, wool, bananas, vegetable oils (especially coconut, palm, and castor), sugar, coffee, tea, spices, and rubber. All except the last four are directly or indirectly competitive with domestic agricultural products. Imported natural rubber though it does not compete with a farm product, competes with the synthetic product. Silk, which used to be one of the chief agricultural imports and also did not compete with any domestic product, will probably never again be important in the United States because of the competition of nylon.

In the years before the Second World War the United States imported more agricultural products than it exported and thus was on a net import basis for this class of commodity. The great increase of agricultural exports since the war has again made us net exporters.

TECHNIQUE OF INTERNATIONAL PAYMENTS

Domestic and Foreign Exchange Compared. Payments between individuals residing in different nations involve in general the same underlying principles and methods as underlie the making of payments between

a debtor and a creditor within the same country: that of transferring money, or a right to command money, such as a check, from the debtor to the creditor. But in the actual technique of making payment between residents of different countries, complications enter, tending to make the whole process of international payment appear mysterious.

First, whereas payments between individuals in the United States are in terms of dollars, payments from an Englishman to a resident of this country must be transferred from pounds, shillings, and pence into dollars; from an American to a Frenchman, from dollars into francs, and likewise for other currencies. From the use of different monetary units, the question arises of how pounds sterling or francs or marks or yen, or whatever the currency may be, are transferred into dollars, or dollars into these other currencies. All payments to persons in other nations require a transfer from one currency to another.

Second, there does not exist an international clearing system to act as does the par check-collection system in this country. As a result, there has been built up a complicated mechanism of various types of bills of exchange, the buying and selling of *exchange*, and of occasional international gold movements to settle balances.

Third, countries frequently have different monetary standards or systems. Though most countries were once on some form of the gold standard, now, whether on a modified gold or on a paper standard, the countries' currency systems are dominated by governmental management. Our procedure here will be to consider payments between countries without regard to the type of money systems involved. Then brief consideration will be given to the effect of the gold standard and of the paper standard on the rate of exchange between countries.

Paying for Imports and Exports. Payments between individuals residing in different nations involve in general the same underlying principles and methods as underlie the making of payments between a debtor and a creditor within the same country: that of transferring money, or a right to command money, such as a check, from the debtor to the creditor. What is required is a transfer of buying power across national borders, a simple thing in itself but in actual operation surrounded by numerous complexities we need not go into. We shall instead content ourselves with a simplified, generalized version of an international currency transfer.

Because they deal in different currencies, importers do not pay exporters directly. Instead the importer (in country A) arranges for a letter of credit, in effect a special form of drawing account, at his bank to guarantee payment of the money due the exporter. The exporter's bill (or draft) on the importer is ordinarily sold to a bank in his own country

(country B), so the exporter gets paid in his own currency. The exporter's bank then sends the draft to the importer's bank in country A and has credited to its account the proper sum in the currency of country A. This money can be left in country A to pay future bills or can be withdrawn into country B at the current rate of exchange between the two countries' currencies. The rate of exchange is the rate at which the currency of one country is exchanged for another. If it takes 4 United States dollars to buy one English pound, the rate is 4 to 1.

There are many variations on this method of payment between traders in different countries but they are variations in detail. The final result is the building up of a balance in the importing country's banks to the credit of some bank in the exporting country or the building up of an account in the exporting country's banks that must ultimately be paid by the importing country.

Payment through the Use of Bank Accounts. The process of international payments is a matter of the transfer of the rights to bank deposits from the debtor or his bank to the creditor or his bank. A bank dealing in foreign exchange is in the market for drafts drawn on foreign financial centers, which when purchased are used to build up the bank's foreign account, against which the bank will sell drafts. In turn, those of the bank's customers who are importers, or debtors for some other reasons—such as for the purchase of foreign securities—or who wish to travel abroad will need drafts on the proper foreign financial centers in order to obtain foreign funds to make their payments abroad.

The whole process, then, is one of building up and tearing down bank deposits in the proper financial centers. If the accounts of American banks in London are getting low, American exporters having for sale sterling exchange (pound drafts) drawn on Englishmen will secure a higher price in New York, as banks are eager to send such drafts to London for collection in order to build up their London accounts. At the same time persons in New York wishing to buy sterling exchange in order to make payments in London will have to pay a higher price, as the banks are not desirous of reducing their London balances. Although payments between countries could be made by shipping gold, the large amount of payments makes this impossible to any great extent. Accordingly, banks are required constantly to balance their sales of drafts with their purchases of drafts.

Equality of Trade. For the system described above to work, there must be a rough equality of trade (which, as will be shown in the next section, may consist of services as well as commodities) between the countries involved or gold will have to flow continuously from the importing country to make up the deficit unless the importing country is

able to borrow. In the case of two managed currencies, the currency of the country which imports much more than it exports will fall to a lower and lower rate of exchange in terms of the export currency, and it will become more and more difficult for the importing country to import. This is what is happening in the world today. Because of the destruction wrought on other countries during the Second World War while the United States was building up its productive capacity, they need more and we need less. Therefore the United States is importing less, relative to national income, than it did before the war, while almost every other country is or wants to import more from the United States. As a result, dollars are constantly tending to become more valuable in terms of other currencies, since other countries do not send us goods to build up dollar accounts in the United States. That is why we must resort to loans and gifts to enable other countries to buy from us the food and other materials they desperately need to maintain adequate diets and keep their industries going.

It should be noted that the equality of trade requisite to maintain stability in rates of exchange need not exist between every pair of countries trading with each other. As long as the imports and exports (including services as well as goods) of a group of countries balance, their currencies will remain stable in terms of each other. This can be illustrated by a familiar prewar example. The United States exported, then as now, much more to England than it imported. This had the result of building up pound balances to the credit of the United States banks and would, in the absence of other factors, have caused the value of the pound to fall in terms of dollars. What happened, however, was that the United States imported large quantities of tin and rubber from Malaya and exported very little to that area. As a result Malaya had large dollar balances in its favor. Further, Malaya imported manufactured articles from England, so the English had large credits to their account in Straits pounds, the currency of Malaya. These were used to cancel the adverse pound balances in the United States and thus maintained the value of the pound against that of the dollar. The term *multilateral* balance of trade refers to arrangements of this sort, involving three countries or more.

In the following section we shall examine in somewhat more detail the items that enter into the balance of payments between nations, and which determine the relative value of their currencies.

THE BALANCE OF INTERNATIONAL PAYMENTS

Credit and Debit Items. In considering the balance of international payments, we must take into account not only payments and receipts

from commodities but also payments and receipts from the sale of securities, earnings on investments, travelers' expenses, etc. The total *trade* is divided into two classes: (1) the things for which we are to receive payments, and (2) the things for which we must make payments. Although at times the former are called exports and the latter imports, the terms *credit items (receipts)* and *debit items (payments)*, respectively, are more accurate.

The major types of items entering into the international balance of payments for the years 1938, 1946, and 1947, are presented in Table 44, reflecting the prewar and postwar situations. The capital account is distinguished from the current account, because it covers investment items chiefly.

Under receipts (or credits) are not only the goods we export, but also services we render such as transportation. As well as for goods imported, we have to pay for services rendered, such as insurance or services to tourists; it is often forgotten how many international transactions are in the form of services, not goods. Further, balancing is provided by the flow of gold or of capital, usually in the form of loans. A special balancing item is unilateral transfers, which are much higher

TABLE 44. BALANCE OF INTERNATIONAL PAYMENTS, UNITED STATES
(Millions of dollars)

Current Account	1938		1946		1947	
	Re- ceipts	Pay- ments	Re- ceipts	Pay- ments	Re- ceipts	Pay- ments
Exports and imports, total (f.o.b.).....	3,101	2,177	12,140	5,264	16,022	6,047
Government.....	..	..	4,872	888	3,134	524
Private.....	..	..	7,268	4,376	12,888	5,523
Investment income.....	582	190	611	173	1,026	226
Transportation.....	267	303	1,815	699	1,728	730
Foreign travel.....	130	303	218	429	278	535
Miscellaneous.....	323	150	480	566	549	789
Total goods and services.	4,403	3,123	15,264	7,131	19,603	8,327
Unilateral transfers, total....	40	211	219	3,329	581	3,029
UNRRA.....	—	—	—	1,522	—	747
Civilian supplies.....	—	—	—	554	—	1,007
Other government trans- fers.....	3	21	94	455	435	434
Private remittances.....	37	190	125	798	146	841
Total current transactions.	4,443	3,334	15,483	10,460	20,184	11,356
Surplus (+) or deficit (-) on current account	+1,109		+5,023		+8,828	

TABLE 44. BALANCE OF INTERNATIONAL PAYMENTS, UNITED STATES (Continued)
(Millions of dollars)

Capital account	1938		1946		1947	
	Re- ceipts	Pay- ments	Re- ceipts	Pay- ments	Re- ceipts	Pay- ments
Long-term capital move- ments, total.	97	—	991	4,333	1,002	8,796
Investments abroad, govern- ment:						
Credits on sales of surplus property. . . . .	—	—	....	860	....	317
Export-import bank.	—	—	40	971	95	796
Subscription to IMF* and IBRD†.	—	—	—	323	—	3,063
British loan.	—	—	—	600	—	2,850
Lend-lease credits. . . . .	—	—	....	546	....	24
Other.	—	—	39	19	75	80
Investments abroad, private.	40	—	911	673	794	1,530
Foreign investments in U. S..	57	—	1	341	38	136
Short-term capital and gold movements, total (net).	—	1,455	—	1,799	—	2,116
U. S. capital abroad (net).	27	—	—	293	—	265
Foreign capital in U. S. (net).	317	—	—	883	311	—
Gold (net).	—	1,799	—	623	—	2,162
Balancing item (errors and omissions).	249	—	118	—	1,082	—

SOURCE: *International Financial Statistics*, October, 1948.

* International Monetary Fund.

† International Bank for Rehabilitation and Development.

in the payments account than in the receipts, thus indicating United States gifts, either official, like lend-lease, or personal, like remittances to relatives abroad. The money thus received by foreigners can be used to pay for goods and services from the United States.

In 1938 our excess of goods and services exported over those imported was about 1.3 billion dollars. This was paid for largely by gold imports of 1.8 billion dollars, and the excess gold imports were apparently offset by the inflow of 317 million dollars of foreign short-term capital into the United States. In other words, there was a balance; United States exports of goods and services were balanced by an inflow of gold which was large enough not only to pay for the goods, but also to permit foreigners to transfer capital to the United States.

In 1946 we exported 8 billion dollars' worth more of goods and services

than we imported. This was paid for by transfers, gifts, and loans amounting net to over 3 billion dollars, by 623 millions of gold imports, by the transfer of 883 millions of short-term capital to the United States, by loans and investments abroad of over 4 billion, thus approximately balancing the deficit. It will be noticed that this deficit was offset almost entirely by United States gifts and loans, which illustrates the one-sided nature of foreign trade after the Second World War.

Exchange Fluctuations. When a country suffers an adverse balance of payments as described on page 449, as would almost every country in the world today if it were not for the loans and gifts of the United States, the exchange rate for its currency falls in terms of other currencies. What are the limits to these fluctuations? Are there any self-corrective forces put into motion by the rise or fall of a country's exchange rates? Basically the answer to these questions is the same irrespective of the monetary standards involved. There is, however, some difference in how checks on exchange-rate fluctuations operate according to the monetary standards of the countries involved.

The most obvious corrective force is the effect of exchange-rate fluctuations on the profitableness of the purchase or sale of the various items entering into international transactions. For instance, if, as a result of an adverse balance of payments, the British pound declines, say from \$2.80 to \$2.74, everything bought abroad (visible or invisible items) by the British will tend to cost them about 2 per cent more. At the same time, everything sold by the British will tend to cost the foreign purchasers approximately the same percentage less of their own money. There should be a tendency, therefore, for the British to buy less and sell more. The balance of payments should swing toward Great Britain, and the supply of exchange rise and the demand fall. Then the pound sterling should rise in exchange value.

Whether or not variations in exchange rates will be corrected by the effect of the slightly lower valued pound on the profitableness of buying and selling by the British depends upon the degree of the exchange-rate fluctuation compared to the nature and strength of the causes leading to the original unbalance in Britain's international transactions. If all that is needed is some slight change in the relative profitableness of the import or export of commodities or of securities, for instance, the small exchange-rate fluctuation should correct the adverse balance. If, on the other hand, there is at work some such strong force as the fear of the future of the British currency, as during the summer of 1931, or a desire to move funds from the zone of threatened war, as in the fall of 1938, then no slight variations in exchange rates can balance England's foreign transactions. In such cases, fearful capitalists will purchase drafts

on supposedly safer financial centers abroad even though they have to pay an unusual price for these drafts. The resulting tremendous debits under such items as international movement of capital and changes in international banking accounts will continue until the fear has passed. At such times speculative sales of exchange will accentuate the decline of the currency of the country which is suffering the excess of debit items.

Though the sharpest and only slightly self-corrective variations in exchange rate come from the movement of fluid capital, other items in international transactions may upset the balance and be corrected but little, if at all, by the consequent fluctuations of exchange rates. Thus a nation at war nearly always increases its commodity imports sharply and buys needed materials with little regard for cost. Or an agricultural country such as Argentina may find that its normal income from wheat exports is cut sharply by low prices or a crop failure. Or an old creditor country may find that a sharp drop has occurred in the earnings on its foreign investments while it continues to import heavily of food and other raw materials.

Foreign Exchange under the Gold Standard. Now we have reached the first point in our discussion at which it is relevant to consider the effect of the prevalent type of monetary systems on foreign-exchange-rate fluctuations. Of particular importance is the question whether two or more of the countries involved have monetary systems under which they permit the free import and export of gold. If so, the international movement of gold will place checks, possibly only temporary, upon the oscillation of the exchange rates among these gold-standard countries. Furthermore, gold movements sometimes, but not always, correct the fundamental cause of variations in these exchange rates.

Theoretically, gold movements correct variations in the exchange rates for the reason that it soon becomes more profitable to ship gold than to pay in currency through bills of exchange. If the pound before the war had fallen to \$4.75 (\$4.85 had been par), it would have been more profitable for an Englishman wanting to pay debts in the United States to ship gold, for every pound sterling of which he would receive a credit of \$4.85, rather than the \$4.75 he would get in return for the paper pounds or a paper bill of exchange. Thus, with an adverse balance of trade, there would be a drain of England's gold reserves which would, theoretically, have a corrective effect on the adverse balance of trade, because of the outward flow of gold, as will be explained in the paragraph below.

Ricardian Theory of Gold Movements. According to the Ricardian theory the most basic exchange-rate corrective which is presumed to operate under gold is the effect of gold movements on bank reserves and

bank-credit superstructures. Ordinarily, it is held, a credit expansion and price level above other countries, are what lead to an adverse balance of payments. High prices encourage increased commodity imports and decreased exports. Abundant credit with low interest rates will encourage capital exports and the purchasing of foreign securities which are debit items. If, then, gold is exported, reduced bank reserves force a reduction of credit and of prices. At the same time the countries receiving the gold are in a position to expand their credit with consequent effects on prices and interest rates.

When one considers the changes in nations' international transactions and in their credit and price structures, one sees that the Ricardian principle can operate only to the extent that the following two situations exist. First, changes in such items as commodity movements must be based on changes in relative price levels, and changes in capital movements must arise from new relations between capital-earnings possibilities in the countries. If, however, increase of commodity imports arises from the exigencies of war, gold exports will probably not reduce the increased commodity imports. Or if the capital exports arise from fear of the political or economic soundness of the country, the consequent credit restriction and rise in interest rates may not check the flight of capital. In fact, they may speed the flight of capital because of fear of safety of the principal. France experienced such a flight at various times between 1934 and 1938. Second, even if the adverse balance of payments has been caused by overexpansion of credit and high prices, *gold movements can correct this situation only if the gold-exporting country contracts its bank credit and the gold-importing countries expand their credit superstructures.* Under the present-day policies of central banks and national treasuries, however, it frequently happens that the controlling agencies prevent either the contraction or the expansion, or both. In such situations the maladjustments continue until the country with the adverse balance puts an embargo on gold exports or reduces the gold content of its currency. *Clearly there often exists a conflict between national monetary and credit policies and the presumed self-corrective character of the international gold standard.*

Limits of Variation of Exchange Value of a Paper Currency. The fluctuations of the exchange value of the currency of a paper-standard country will not be corrected by either (1) the automatic movement of a commodity (gold) to change its supply of foreign exchange or (2) the effect of these gold movements on bank reserves. At the same time a paper-currency country may be subjected to the effects of a war, and, sometimes to a greater extent than a gold-standard country, to the effects of fluid-capital movements which arise from fear of safety of principal.

All these considerations should not lead to the conclusion, however, that there are no forces tending to limit movement of the exchange value of paper currencies. Nevertheless, aside from the effect of the exchange-rate fluctuations on reversing the profitableness of some of the transactions in the nation's balance sheet, *exchange rates of paper-standard countries are influenced by the control of that country's currency.*

A paper standard implies a detailed control of money and credit by the central bank or national treasury or both. This control affects exchange rates most significantly through the monetary authorities' influence on the domestic price level. If they maintain their price level in harmony with other countries, no change in commodity trade should result to affect the supply and demand for exchange and the price of exchange. Of course, if the paper-standard country increases its money and bank credit to finance a war, as did the Allies from 1914 to 1918 and again from 1939 to 1945; to rearm, as did Germany after 1933; or to expand fixed capital, as did Russia under a Five-year Plan; then there will be a tendency for prices to rise above those of other countries and for imports to grow relative to the change of exports. *If this change in commodity trade is permitted*, that is, if no direct or indirect controls are placed on imports or no subsidies on exports, then the exchange value of the country's currency will decline, as did the value of the pound and the franc during both world wars. It is possible, on the other hand, for the control authorities to reduce their currency and credit, as England did before returning to gold in 1925, and with the consequent effects on commodity trade and exchange rates. In fact, during the 1914 to 1918 World War, prices in Sweden in paper kronen rose less than in gold-standard countries and the paper kronen commanded a premium in gold.

The effect of changes in relative price levels of countries on their commodity and service trade and hence on their exchange rates has led to the doctrine of *purchasing-power parity*. This doctrine holds that the equilibrium exchange rate between countries, if one or more of them is on a paper standard, is determined by the relative domestic purchasing power of their currencies. Clearly insofar as exchange-rate variations result from changes in price levels, this is true of gold currencies also. The significance of the principle lies in the effect of domestic monetary and credit policy on exchange rates.

In most instances the exchange value of paper currencies has been particularly subjected to the effects of movements of fluid capital. In a large part, this experience has been due to the fact, as Professor C. R. Whittlesey says, that paper has been tried when gold had already failed to meet the political or economic stress. Consequent domestic uncer-

tainty has often led to heavy capital exports. Such marked increase in the demand for foreign exchange can be stemmed only by those steps which will restore confidence in the future of capital if left at home or by exchange control.

Exchange Control. The discussion of the causes of marked and prolonged lack of balance in a country's international payments indicates why countries often resort to *exchange control*. Broadly speaking, *exchange control* refers to any steps taken to affect either the supply of or the demand for bills of exchange. The methods of exercising such control include restricting the uses for which exchange may be secured. Sometimes the *objectives* of the control also include the influencing of particular debit or credit items, such as capital movements, because control of that particular item seems necessary for purposes of the government.

Since the 1914–1918 World War, in particular, countries have frequently experienced a strong and continued adverse balance of payments. If on gold, sometimes the correctives described on the preceding pages were ineffectual—sometimes not desired. Governments or central banks of countries, nominally on the gold standard, sometimes feel forced to purchase or sell exchange to control its price or directly limit the demand in order to prevent the depreciation of their currencies. In the latter case they, in reality, leave the international gold standard. When countries are *forced* to leave gold the tendency toward an adverse balance of payments is often aggravated and the pressure to control exchange is amplified. Under such conditions as existed from 1931 to 1948, nearly all countries have exchange control of some type and of varying degree. Even when the United States again returned to the international phase of the gold standard in 1934, the Treasury was equipped with a giant fund to engage in the purchase and sale of exchange, if necessary.

The variety of systems of *exchange control* which have been evolved cannot be described here. They all lead to essentially the same result: they aim to affect the supply of or the demand for exchange, or both.

THE BALANCE OF TRADE

What Constitutes a "Favorable Balance of Trade"? In the popular mind international trade consists of exports and imports of merchandise, or of the visible items. And, at least from the days of the mercantilists, the popular belief has been in the desirability of an excess of visible exports over imports, the difference to be paid in gold. But, when both visible and invisible (these are services, remittances, capital, anything

that is not goods) items are considered, the debit and credit items of a country's balance sheet will approximately balance.

However, the fact that all payments for both visible and invisible items tend to balance does not answer the question, Is an excess of merchandise exports over imports desirable? No correct answer can be given which will apply alike to all periods of a nation's history. The answer depends on the stage of a development to which the nation has progressed, for at certain stages a "favorable balance" is its normal condition, whereas as other stages an "unfavorable balance" is to be expected and is not undesirable. The only occasion for anxiety would arise out of a rapid change from favorable to unfavorable or vice versa, or the existence of a heavy unfavorable balance when the country's stage of development calls for an excess of exports. Equally unfortunate would be a favorable balance when the nation's position dictates an excess of merchandise imports—a question now before this country. The stages in the evolution of a nation's international trade in merchandise may be illustrated by our own history. By doing this one can demonstrate the present position of the United States with respect to imports and exports.

1. *The Debtor Period.* In the early history of our country, from colonial days to about 1875, we had an almost continuous excess of imports. During this period we were establishing our basic industries and developing our natural resources. We bought abroad vast quantities of equipment and manufactured goods. The surplus imports were bought with the earnings of our merchant fleet and by borrowing—that is, by the investment of foreign capital in our securities, particularly to finance our railroad building. Payments of interest and dividends to foreigners were less than the annual increase in investment in our country by foreigners.

2. *Transition Period.* From 1875 to 1914 our excess of visible exports represented mostly the huge sums we had to pay annually as interest to foreigners on their investments in this country. Even though some foreign loans were repaid prior to 1914, this return of *capital* took place at an accelerated pace between 1914 and 1920, when within this short period we reversed our position from that of a debtor to that of a creditor. The sacrificing of American investments by citizens of warring Europe at the opening of the war, plus *an excess of commodity exports from 1914 to 1920, amounting to about 20 billion dollars*, made this rapid transition possible.

3. *Capital-exporting Period.* The end of the First World War period saw the United States entering another stage, that of a capital-lending country. Loans to rehabilitate Europe and develop industries in South America and Asia were made in such large quantities that our foreign

investments were estimated to be about 14 billion dollars at the end of 1931. The purchase in this country of foreign securities required us to buy exchange to make payment or gave foreign countries the right to draw on us. As a result of this exports have left our shores not as gold but as goods. This factor did much to stimulate our exports from 1920 to 1929, a period in which Europe could not have purchased heavily from us if we had not lent her the means of purchasing.

4. *Interest-receiving Period.* A country which lends heavily abroad cannot expect, however, to remain permanently in the so-called "glorious" condition of a favorable balance of visible trade. Our debtors' annual payments of dividends and interest to us in excess of our payments to foreign investors in this country totaled 523 million dollars in 1928. As additional foreign investments are made, the annual earnings on foreign investments reach a sum larger than the annual increase in the foreign investments which the citizens of a country are willing to make. When this situation is attained, the normal position of a country's visible balance of trade is an excess of imports.

If the Second World War had not intervened, the United States might have been in that position by now. It may be noted incidentally that England and France, particularly before the First World War and to a lesser extent after the Second World War, and Germany before the First World War, were in that position. England for many years normally imported 20 per cent more merchandise than she exported. As creditors these older nations had the newer parts of the world working for them.

The coming of the Second World War and the postwar situation wherein we had to export vastly more than other countries had available to send us, as well as the continued liquidation of their holdings in the United States by the French and British, which forced us to lend in order to enable them to buy goods here, prolonged our capital-exporting period to the end of the 1940's. Under the Marshall plan it will continue at least into the 1950's.

If sometime in the future we can stop lending abroad on a large scale and our invisible imports, such as tourist expenditures, do not increase enormously, we may have to accept a reversal of our past and present excess of merchandise exports over imports. In effect this hypothetical excess of imports will be the repayment of interest on what we have loaned abroad.

The term *favorable balance of trade* is used in popular language to refer to an excess of commodity exports over imports. As thus used the term is very misleading. There is not necessarily anything either favorable or unfavorable about commodity exports being greater or less than commodity imports. It depends on the circumstances. An individual would not regard the ability continually to buy more com-

modities than he needs to sell as "unfavorable." Neither should a nation.¹

Tariffs, Foreign Investments, and Exports. How was it possible for the United States, a creditor country, to continue to have a "favorable" visible balance of trade in the period between the wars? Two factors contributed. First, the rigid protective-tariff policy acted as a damper on imports, even though a large and growing part of our imports represented payments of interest to us by foreign industries and governments. Second, this was the period of rapid investment abroad by our people, the capital-lending stage as explained above. We advanced the funds to peoples of other nations to create the necessary exchange with which they could pay interest and buy a large volume of American commodities. During the period from 1922 to 1931, inclusive, we earned on our

¹ L. H. Bean summarizes the history of our balance of merchandise trade up to 1932 as follows:

HOW THE UNITED STATES CHANGED FROM A DEBTOR INTO A CREDITOR NATION

	Period	Foreign trade	How principally balanced
1	1779-1820	Excess of imports	By profits of our merchant marine
2	1821-1837	Excess of imports	By inflow of foreign capital
3	1838-1849	Excess of exports	By our interest payments on foreign loans
4	1850-1873	Excess of imports	By inflow of foreign capital
5	1874-1895	Excess of exports	By our interest payments on foreign loans
6	1896-1914	Excess of exports	By our interest payments, and tourist expenditures and immigrant remittances
7	1915-1918	Excess of exports	By public and private loans to foreign countries
8	1919-1921	Excess of exports	By public and private loans and credit extended by exporters
9	1922-1924	Excess of exports	By foreign investments in the United States
10	1925-1929	Excess of exports	By private loans and tourist expenditures
11	1930-1932	Excess of exports (much diminished)	By credits extended by exporters and tourist expenditures

"Since the Civil War the United States has exported more than it has imported. Up to 1915, the excess of exports mainly represented the payment of interest and capital on foreign investments in American agriculture, industry, and transportation. During and after the war the United States invested large amounts in Europe. As a result, the excess of exports over imports continued; but the financial basis of the trade movement changed. We had become a creditor nation. Our export balance came to represent loans instead of debt payments to foreign countries. The previous debts had been largely paid off. In other words, we ourselves provided the money to pay for our exports. The alternative, which we declined to consider, was to receive foreign goods in payment."—From *Economic Trends Affecting Agriculture* (U.S. Department of Agriculture, July, 1933), p. 24.

After 1932, as shown in the text, we continued to maintain our export balance by providing foreigners with the money to pay for it and by other means.

foreign investments the sum of 4,985 million dollars, or an average of 499 millions per year in excess of the earnings on investments in this country held by foreigners. This yearly sum plus an average annual balance in our favor of 876 million dollars for merchandise exports in excess of imports could not have existed side by side had it not been for the huge sum Americans were investing abroad. During this period, we invested abroad 4,936 million dollars in excess of what foreigners invested here, a yearly average of 494 millions. During these years our net tourist expenditures abroad averaged 295 million dollars a year. These 4,936 millions of net foreign investment of American capital plus tourist expenditures largely account for the fact that the people of other nations were able to pay to us the sum of 4,985 million dollars as earnings on private investments plus 1,955 millions of war-debt interest and principal and in addition to purchase from us more commodities than we purchased from them. When we ceased to be willing to make large foreign investments the foreign nations began to default in interest and principal payments of their earlier debts and our exports also declined.

With the recovery in our economy and that of the rest of the world that began after 1932, our international trade revived, and though the United States was still in a creditor position it continued to have an excess of exports. Our high tariffs had something to do with this, though not so much as in the preceding period, for the tariffs were substantially lowered through agreements with many foreign countries under the Reciprocal Trade Agreements Act, passed in 1934. Relatively, our tourist expenditures continued at a high level. Our payments to foreign countries for shipping services also continued high. Of minor importance were our subsidies for the exportation of wheat and cotton. The major factor, however, which made the excess of exports possible was our extraordinarily high intake of gold after 1933. After 1934 our imports of gold ran over a billion a year. In 1939 these imports were 3,574 billion dollars and in 1940 they were 4,744 billions, as frightened foreigners sent capital to the United States or as foreign governments used every means to obtain goods here.

We took gold because we would not or could not take goods. The inability of the United States to import even before the Second World War was not wholly due to the wickedness of our tariff policy. It was at least partly the result of two unavoidable facts: (1) that our needs from the outside world relative to the size of our economy are small and (2) that we can produce most manufactured goods more cheaply than any other country because of the wealth of our resources and the efficiency of our mass-production methods, despite our high wages. We therefore are under no economic pressure to import.

Other countries, however, needed what we had to export, and since

they could not pay in goods they shipped gold. The result was a great imbalance in the world's monetary gold stock, with the United States holding about two-thirds of the world total. The movement of gold into the United States did not have the effect that theoretically it should have had, that is, raising prices here and lowering them abroad, so as to reverse the flow of trade. This was because we "sterilized" our gold, preventing it from having an expansive effect on currency and credit, while foreign countries offset the outflow of gold through the devices of monetary management and exchange and trade control.

After 1940 our tremendous export surplus was made possible by a correspondingly tremendous export of capital in the form of loans and grants. Under lend-lease, we gave in effect about 50 billion dollars' worth of goods to foreign countries; as our contribution to UNRRA, after the war, we added about 3 billion dollars to this total; and we gave about 3.5 billion dollars in the form of the British loan in 1946 and 1947. More billions went out in the various foreign aid programs of 1947 and 1948. Very important also were our exports to maintain our fallen enemies in Japan and Germany. Then, in the middle of 1948, we embarked on the Marshall plan program of exporting about 4 or 5 billion dollars a year to restore the economy of Western Europe and China.

The 1948 Situation. How far the situation three years after the war was from balance, or from approximating "normal" conditions when trade between countries should be in some sort of rough equivalence, is shown by the figures for 1947, when United States exports of goods and services were about 19.6 billion dollars and imports only 8.3 billions. European countries, still feeling the effects of the war, had to import consumer and capital goods to maintain their standard of living and rebuild destroyed or outmoded capital equipment.

In general they had insufficient gold stocks and insufficient goods to export to the United States in return for what they wanted from here. Under these conditions the possession of dollars was extremely important, in order to obtain goods from the United States. Attempts of foreign countries to build up export trade was a natural consequence because exports were a way of acquiring dollars, if not directly, then indirectly through three-cornered trade. This is the explanation of the British export drive and the imposition by other countries of every variety of exchange and import control. The objects in every case have been, first, to hold imports down to necessities so as to save dollars for important purposes only, and, second, to promote exports to accumulate dollars thereby.

Devaluation. This drive for exports has at times led to deliberate devaluation of a country's exchange rate. Thus a country whose cur-

rency stands at 10 to the dollar, can, *all other things being equal*, increase its exports enormously if it devalues to say 12 to the dollar, because then its goods will be cheap in terms of other currencies. This increase in total volume of exports would presumably be great enough to offset the smaller return in dollars per unit of exports. It would, that is, if other countries did not follow suit and likewise devalue to meet the competition of the first country.² Because other countries do this, in the end all that has been achieved has been to unsettle international exchange and make trade more difficult, though the country devaluing first might gain a temporary advantage. Likewise, the import controls mentioned above tend to be self-defeating because, as each nation in the effort to widen the margin between its exports and imports puts limitations on imports, there will ultimately be no place left to send exports to.

Despite the ultimately self-defeating nature of such measures, countries resort to them because of intolerable internal pressure and because of the immediate advantage to be gained. If a country is short of food—England again is a case in point—and food must be paid for in dollars, that country will restrict imports of other goods and try to build up its exports to obtain dollars, regardless of the ultimate effects on the flow of international trade or disturbance to foreign-exchange markets.

Efforts at Amelioration. In an effort to prevent this situation from degenerating to the point of utterly strangling international trade, the nations of the world in concert, and the United States individually, have attempted ameliorative measures.

Even before the end of the war, in 1944, at the Bretton Woods (N.H.) conferences, the International Monetary Fund and the International Bank for Reconstruction and Development were planned. They began operations formally in 1946, on a large scale in 1947.

The Fund was established to promote exchange stability and maintain orderly exchange arrangements. The Fund lends money or sells for-

² Among the many questions aroused by the British devaluation of the pound from \$4.03 to \$2.80 in September, 1949, were (1) whether or not the British would gain on their competitors in exporting to the U.S. This seemed highly unlikely in view of the almost simultaneous devaluation by so many other countries. (2) Whether or not the cut in the prices of British goods would be great enough to increase American buying to such an extent that the British would increase their volume of dollar exports. This also seemed at least doubtful, largely because the devaluation, making the costs of imported goods higher, tended to increase British prices, thus canceling out the gain from the lower exchange rate.

Despite these doubts the British probably had no choice but to devalue because devaluation had been so long expected that purchasers were holding off from buying British goods, waiting for the change in the value of the pound. Likewise there had been a flight of capital from England, a constant tendency to change out of pounds to other currencies because of fears that the value of the pound would be lowered.

eign currency to members, who are countries, not individuals or banks, to help them maintain the value of their currencies. It does not make long-term loans or try to correct the fundamental causes of exchange disequilibrium.

Members of the Fund originally registered the exchange value of their currencies with it. Changes from this official value are not supposed to be made without the consent of the Fund. In January, 1948, however, the French government wished to change the official par value of the franc from 119 to 214 to the dollar. The Fund was agreeable to the change but not to the exchange arrangements the French proposed to make simultaneously.³ Despite the Fund's objections, the French government put its proposals into effect.

This incident illustrates the fact that when nations feel themselves in a desperate position they will do what they believe necessary in their own interest. It also illuminates the weakness of international controls which, like the gold standard, work, as it were, only in fair weather. The Fund has done well in helping nations over comparatively minor exchange difficulties; when a major crisis comes up, as in this instance, nations go their own way. It must be pointed out, however, that the French government has assured the Fund that these control measures are temporary and has already moderated some of them.

The Bank for Reconstruction and Development is intended, as its title indicates, to make loans to assist member countries to develop their resources and to promote the long-range growth of international trade. Its authorized capital is \$1,647,705,000, of which \$635,000,000 was provided by the United States. Partly because of the disturbed political condition of the world, partly because of internal difficulties in admin-

³ To illustrate the complexity of current international-exchange controls, the following description of this French system is quoted from page 13 of the *Special Report of the National Advisory Council*, House Document No. 656, 80th Congress, 2d Session:

"In January 1948 the French Government proposed to modify its exchange system to include multiple rates and to change the par value of the franc, which had been agreed with the Fund. The official par was to be changed from approximately 119 to 214 francs to the dollar. The exchange rates for currencies other than the dollar and other convertible currencies were to be based on the official cross rate with the dollar, although dollar transactions would take place largely at a 'free market' rate. French exporters receiving dollars or other convertible currencies would be permitted to sell half of the proceeds on a 'free market,' while the other half would be sold at the official rate. The free market would also receive the exchange from invisible transactions. While certain commodities could be imported at the official rate of exchange, particularly certain prime necessities, other items could be imported only by securing exchange on the free market. Purchase of exchange, however, was restricted to licensed transactions, so that the French authorities still retained considerable control over the operations in the free market."

istration, the Bank has been relatively inactive. As of Mar. 31, 1948, its loan commitments totaled only 513 million dollars, half to France and most of the rest to the Netherlands.

The inactivity of the Bank was one of the causes, albeit a minor one, of the United States being forced to take on itself the burden of making international loans. More important were the political motives, the desire to build up Western Europe; the humanitarian motive, the desire to restore the world to something like normality; and the motive of economic self-interest, the necessity to export and to build up the customers for our exports to the point where they could buy from us without our aid.

Social Control: the Tariff. All considerations of the character and volume of foreign trade are subject to the effect of import restrictions of all kinds. Therefore the further consideration of foreign trade, particularly its prospects, must rest until the tariff and other import controls are discussed. This is the subject of the following chapter.

Questions and Problems

1. Discuss the degree of importance of foreign trade to this nation as a whole and to a number of particular industries.
2. How important is the export market to American agriculture? Give specific information.
3. Summarize the changes in both quantity and kind which have occurred since 1930 in our foreign trade in agricultural products.
4. How would agricultural welfare be affected by a cessation of both agricultural exports and agricultural imports? In answering show that you know what our chief agricultural exports and imports are.
5. Explain the technique of international payments by showing how it consists mostly of building up and tearing down bank balances.
6. If a country imports a much greater quantity of commodities than it exports, how can it pay for the difference?
7. Why does the United States have so great an excess of exports?
8. What is meant by purchasing-power parity?
9. Under what circumstances is a so-called unfavorable balance of trade advantageous to a country?
10. Explain why the United States had a favorable balance of trade from 1934 to 1939, from 1945 to 1947.
11. Why does the United States have about two-thirds of the world's gold?
12. Why is the United States making large foreign loans and grants?

Suggested Readings

1. Paul Einzig, *Exchange Control* (1937), contains a brief description of exchange-control devices and the effects of such policies.
2. F. W. Taussig, *Principles of Economics* (1939), Vol. I, Chaps. 31 to 33, contains a good exposition of foreign exchange. Chapter 33, on Dislocated Exchanges, is particularly recommended.
3. Among the standard treatises on foreign trade are Jacob Viner, *Studies in the Theory of International Trade* (1937), G. Haberler, *Theory of International Trade*

(1936), and P. J. Ellsworth, *International Economics* (1938). Only the last named is recommended for beginning students.

4. F. A. Southard, Jr., *Foreign Exchange Practice and Policy* (1940), treats, in a readable fashion, foreign exchange under disturbed conditions.

5. A. H. Hansen, *America's Role in the World Economy* (1945), describes the new international trade and foreign exchange agencies and agreements.

6. M. A. Heilperin, *The Trade of Nations* (1947), is a stimulating postwar study.

7. *What Peace Can Mean to American Farmers: Expansion of Foreign Trade*, U.S. Department of Agriculture Miscellaneous Publication 582 (1945), is a review of possibilities.

8. *Foreign Agricultural Trade*, U.S. Department of Agriculture, gives up-to-date monthly statistics.

CHAPTER 20

GOVERNMENT CONTROL OF FOREIGN TRADE AND THE FARMER

Protective tariffs are among the devices which a government has at its disposal to stimulate or hinder the production of certain commodities within a country. Duties levied on goods entering a sovereign political unit may be designed primarily to yield revenue, or they may be levied on selected goods at such rates as to protect domestic producers of these goods either partially or entirely from foreign competition in the domestic market. Quotas limit the quantity that can be imported and sometimes other devices like sanitary regulations are also employed to curtail imports for the benefit of the domestic producers. The internal-tax system of a nation also may be so devised as to stimulate the production of certain goods or to force off the market other commodities. The United States government, for example, levies a high tax on the manufacture of colored margarine, so very nearly all the margarine made in this country is uncolored. The government may stimulate the production of goods within its boundaries by bounties on desired articles; while this has not been a favored method of government assistance in this country, during the Second World War what in effect were bounties were paid to high-cost producers of copper. The most frequent device used to stimulate a particular domestic industry in the United States at the expense of foreign industry has been the protective tariff.

TARIFF ARGUMENTS

Protection and Free Trade. The protective tariff calls for the adjustment of duties on imports in such a manner as to give the domestic producers of certain commodities a favored position in the domestic market, compared to their position prior to the tariff. If the customs duties on the particular imported goods are placed very high, the result will be to exclude such goods entirely and to leave all of the domestic market for these goods to domestic producers. Such a tariff may be called a *prohibitive tariff*. It will, of course, yield no revenue, since no goods enter and pay the duty. A tariff may not be entirely prohibitive and yet may so decrease and restrict imports as largely to protect domestic producers from foreign competition, domestic producers thus being

enabled to charge higher prices than would otherwise prevail. A tariff may thus to some extent yield revenue and to some extent be *protective*.

Opposed to those who believe in a protective tariff are those who believe in free trade. The doctrine of free trade is not contradictory, however, to a *tariff for revenue only*. The free trader does not argue that no customs duties should be levied, but only that the purpose in levying these duties should be to obtain revenue, not to protect a domestic industry against foreign competition. For this purpose customs duties must not be so high as to be prohibitive. They should also be levied on commodities which are not domestically produced and which, therefore, will continue to be imported in large volume in spite of the duties, or there should be on the domestic production of the commodity an excise tax equal to the duty on imports. Thus a tariff for revenue only can become an important and fairly stable source of revenue for the government.

Points of View. The tariff problem has been the source of bitter controversy in American politics since 1824. Not only has the controversy been carried on in the halls of Congress and in the campaigns of the political parties, but it has been a topic of heated discussion among individuals. That this problem has been so long discussed, and that the discussion has not resulted in any approach to unanimity of opinion, may be explained to some extent by the fact that the disputants fail to realize to what an extent their stand on the question depends upon the particular objectives which they have in mind. One person may be arguing consciously or unconsciously from the viewpoint of his interests as the producer of a protected item, whereas his opponent may be considering his interests as a producer of an exported article. Under such circumstances, agreement is hardly possible.

To the authors it seems that the various points of view from which the tariff problem may be attacked may well be classified in the following manner: First, there is the contrast between the point of view of individuals interested in their personal economic advantage and that of those interested in the welfare of the nation as a whole. These two points of view are frequently confused in all economic problems, not only that of the tariff. Second, a confusion arises concerning the effect of the tariff in the long run and in the short run. Frequently in a discussion one person will be interested in the immediate effects and the other in effects that will hold true after a period of time, neither one of them in fact realizing fully his own point of view, or the contrast between himself and his opponent in this respect. Third, a confusion frequently arises between the economic and the political considerations involved in the protective tariff. We shall now turn to a discussion of the case for protection and then the case for free trade, attempting to

emphasize in each case the conflicting points of view upon which the various arguments are based. Any conclusion which may be arrived at concerning the tariff issue can be only from a given point of view.

The Case for Protection: Economic Considerations. Five arguments are much advanced by those who favor the protective tariff. Four of these are advanced from the viewpoint of the long-run welfare of the nation as a whole, the remaining one being concerned with the short-run situation. We shall first state these arguments.

1. *Diversification of Industry.* It is argued that the protective tariff stimulates the diversification of industries, which is taken for granted as an advantage. Instead of specializing in the production of those goods for which the nation is particularly adapted, the protective tariff results in the producing effort of the people being spread over a larger number of industries, some of which can exist only because they are protected. Therefore, it is claimed, each person will be able to find in this diversified field of industries the occupation which fits his particular aptitudes and interests and will be more productive. With this policy, industry in each country will be more diversified than it would be with free trade.

A corollary to the argument for diversification of industries is the contention that the nations which produce exclusively those commodities in which they have the greatest competitive advantages will exhaust their richest natural resources, particularly timber and minerals. In recent years, those supporting this contention have used Great Britain as an example. They point out that the free-trade policy pursued by Great Britain from about 1850 until 1932 stimulated her industries connected with coal and iron to the extent that she has utilized a large part of her best available deposits and now faces higher costs of production at a time when new and strong competitors have arisen in America and in Continental Europe.

2. *The Home-market Argument.* This argument is an appeal directed to those whose products do not directly benefit from a protective tariff and is to the effect that such persons should favor a tariff on other products, as this will promote other industries and the people engaged in these protected industries will then form a large home market for all products. This argument has been particularly directed to the farmers of America who produce exported commodities, such as cotton and wheat, as a reason why they should support a protective tariff on such industries as those of manufactured textiles, steel, and cement. It is maintained that protecting some products against foreign competition has not only brought a larger home market for nonprotected products than would otherwise have resulted, but, further, that a home market is superior to a foreign market. The former, it is insisted, will not be

disturbed by international difficulties, such as wars, foreign tariffs, and the disruption of financial systems of importing countries. The foreign markets for many products were materially curtailed after 1929 by currency difficulties abroad, by import quotas, and by new and higher tariffs. All of these defects, it is asserted, are avoided when agriculture, for example, has a large and certain domestic market.

3. *Infant Industries.* The infant-industries argument is that new industries need protection during their infancy while they are becoming established. This argument has received wide support, not only in the public mind, but from some economists. Years are required to establish in an efficient manner the internal organization, the sources of supply, and market connections for new enterprises. This is particularly true when such industries are being established in a locality distant from plants of a similar kind already in operation. It is held that, if these newly established industries can be fostered through their infancy by protection from competition, they may then be able to compete on an equal basis with the established plants of foreign countries. It is urged that, unless protection is given, private enterprises will be unwilling to run the risk of failure during the trying period in which an industry is being established. But, if protection is granted and if the new industry becomes firmly established, the result, it is said, will be beneficial not only to those interested directly in that industry but to the nation as a whole.

This is perhaps the most potent of all the arguments for limiting imports. It is particularly strong in the case of undeveloped countries, like those of Latin America and Asia, which desire to be independent of other countries and build up their own industrial plant. They cannot do this without limiting "cheap" imports from other countries. Otherwise these imports outcompete the native products which, at first at least, are generally expensive to make because of lack of experience and inadequate facilities. After all, the steel industry in the United States might never have developed in the face of imports from England in the nineteenth century if not for the tariffs imposed after the Civil War.

4. *Wages and Standard of Living of Labor.* It is argued that the protective tariff prevents the jeopardizing of the standard of living of American labor through the importation of the products of cheap foreign labor. It is maintained that the American rural and urban laborer receiving from \$5 to \$15 per day should not be called upon to compete with the Chinese coolie, who is paid only a few cents a day. Laborers in Europe also receive much lower wages than those which prevail in the United States. The advocates of the protective tariff maintain that high wages in the United States have resulted from the protective tariff.

This contention added to the idea that industrial prosperity and full employment are dependent on the tariff has been summarized in the slogan "the full dinner pail." Associated with the wages argument is the "standard-of-living argument," which holds that our standard of living will be lowered if we import goods from countries with a lower standard of living than prevails in this country.

5. *Rights of Established Industries.* Let us turn now to an argument which is based primarily upon the short-run economic welfare of the nation. The protectionist contends that industries already established in a country deserve protection against any new competition which may arise from abroad. Refusal to protect existing industries in the domestic market will result in forcing some of these industries to reduce their number of employees and their purchases of raw materials, and eventually will force domestic plants out of production. During this period of readjustment, not only will entrepreneurs and laborers suffer in the industry from which the protection has been removed, but the consequent derangement of business relations and loss of purchasing power will affect the whole of the nation. It is contended that the welfare of the nation as a whole demands that present industries be protected from this unfortunate competition, at least until such time as they will be able gradually to go out of that business or else to entrench themselves more firmly to meet the new competition.

Political Considerations. 1. *Self-sufficiency.* The outstanding argument of a political character advanced to support protection is that it is necessary for a nation to maintain its self-sufficiency. Each nation which is to be a strong power in time of war should produce within its boundaries, if possible, all of the necessary materials for the conduct of a war. For decades prior to the First World War, as well as during the years between the wars, the tariff policies of some European nations, notably Germany, were influenced greatly by the desire for military strength. The protective tariff is a useful tool in stimulating the production of necessary materials which would otherwise be imported from abroad. This argument is based upon the assumption that international relations will be such that nations must preserve themselves in a position to conduct successful military operations, and probably has had more influence than any other in determining import policy since 1918.

2. *Necessity for Bargaining Purposes.* Conceding the fact that we live in a world in which nations levy tariffs one against the other, it is maintained that it would be highly disadvantageous for a particular nation to go on a free-trade basis. It is held that it is necessary for this country to maintain a protective policy in order to retaliate against those nations which levy heavy duties on its products and to force such nations to lower tariff schedules. In the actual working out of the tariff

policy of the United States, retaliation has not been used to the extent that it has by several European countries, notably France.

Group Interests in Protection. The above-stated economic and political considerations advanced in favor of protection are those which have been most frequently presented in discussions of this subject. These arguments take the group viewpoint, and this would indicate that those who support protection by such arguments are doing so for the welfare of the country as a whole. However, when one examines the economic interests of those who argue for protection, and, more particularly, when one examines the influences which are brought to bear on Congress relative to the protection of certain products, the conclusion must follow that a large part of the support for tariff protection comes from those groups who gain by protection, particularly in the short run. New industries are not sufficiently strong to secure protection by themselves, but, by combining with other groups, they attempt to obtain protection for a wide list of commodities. The arguments advanced by many of those who profess to look at the question from a social viewpoint are not always the real motives in the minds of the persons who issue propaganda to obtain votes for their cause.

The Case for Free Trade: Economic Considerations. 1. *Comparative Advantage.* The primary economic foundation of free trade is the law of comparative costs. Each nation with free trade tends to concentrate upon the production of those goods in which it has the greatest relative advantage or the least relative disadvantage, with the result that production the world over is more efficient than it would be without specialization and trade. The standard of living of each nation depends upon the amount of goods it produces or secures in trade. Specialization according to comparative advantage will increase the production and the standard of living of every nation. The fact that a domestic industry needs protection, unless it is an industry just getting under way, indicates that that industry is less efficient, comparatively, than other industries in its country. If trade were not advantageous, it would not be carried on. The consumers of the importing country must pay higher prices for protected products than would be necessary if free trade prevailed. The buying power of the consumers in the importing country is also lowered because they are producing in relatively inefficient industries, and because the buying power of a people depends on its productivity. The protection of a certain industry, then, is at the expense of the great mass of consumers. Specialization and trade offer the same advantages among nations as among different people and regions within the nation.

Aside from the law of comparative advantage, the case for free trade consists largely of a series of answers to the arguments for protection.

2. *Destruction of Certain Resources.* The protectionist's argument

that the protective tariff preserves natural resources is, according to the defenders of free trade, a boomerang. The latter acknowledge that the protection of industries will prevent a country from using up rapidly its best natural resources. On the other hand, those working in industries using these best resources are usually well able to compete and hence are on an export basis and not benefited by protection. Meanwhile, there is no assurance that a country, once entered upon a protectionist policy, will do so in such a manner as to preserve its most needed resources, for the protectionist program generally is extended in such a manner as to exhaust important natural resources which would have been preserved under free trade. An excellent example of this is the protective tariff on manganese. This metal is one of which our supply is very limited, and it is highly essential in the production of steel. By a protective tariff on this metal we encourage the exhaustion of our limited known deposits and may find ourselves in the future unable to meet our needs for manganese in case of war.

3. *Home Market Inferior.* The home-market argument of the protectionist has been the subject of bitter attack. It is acknowledged that protection may stimulate an increase in the part of population employed in certain industries. But this does not furnish an additional market—merely a different one. And the market which is thus provided, stimulated by protection, is inferior to the foreign market which would be established under free-trade conditions. Under free trade the best market will automatically be found. The best market is that market which gives one the most goods in exchange for his goods. Protection establishes a domestic market made up of people working in inefficient enterprises, and therefore these people have less buying power. Of great significance also is the fact that the buying power of the foreign market for American goods is limited by protection, since the purchasing power of foreign countries in the aggregate for American goods is limited by their volume of exports to America. Since foreign trade is fundamentally a matter of barter, foreign nations will not continue to buy from us except to the extent that they can sell to us. We can collect for our exports only by buying abroad, and there is no advantage in selling unless one receives something in return for what he sells. Exporting industries lose by protection for other industries, inasmuch as their costs are increased and their foreign markets are impaired.

4. *Infants Forever.* Although economists have supported the principle of the protection of infant industries, American experience with protection has caused many to lose their faith in the actual operation of that principle. It is difficult to determine what is an infant industry, for the various factors which may contribute to the permanent success of a new industry cannot be known with sufficient accuracy for Congress

to be able to decide whether an industry will be self-supporting after a period of time. Of more influence in turning people against the infant-industries argument has been the fact that those industries which have asked for protection in the United States as being infant industries are still infants after the passage of scores of years. They do not seem eager to throw aside infant clothing and assume manly stature. This attitude is to be expected, since they gain by protection and cannot be expected voluntarily to give up that protection, and hence they continue to bring all possible pressure to bear in order to maintain protection.

Nevertheless, the fact that the infant-industry argument is used long after it is justified does not mean that it was not justified in the first place. The fact also that it is inappropriate to use this argument in the United States does not mean that it is not perfectly valid in a country like India, where the process of industrialization is just beginning.

5. *Protection Lowers Living Standards.* To argue that free trade would lower the standard of living of the American working man is to deny the principle of marginal productivity in relation to wages. Wages of foreign workmen are low because of low productivity. The real wages of the American workmen are high because of the rich resources of our country, relatively few laborers, and the general efficiency in production of American labor. Protection for industries which otherwise cannot compete turns labor into inefficient industries and lowers the general level of wages and the standards of living.

That employment is provided in protected industries is inconsequential when one considers that under free trade the same labor could be employed more productively in those of our industries enjoying comparative advantage, producing more goods for export. The money wages of labor may under certain conditions be raised by protection, but this is more than offset by the higher cost of living made necessary by the purchase of high-cost domestic goods. Real wages are reduced. The condition of labor would be improved by free trade. One is not injured by trading with a person who has a lower standard of living than he has, if both parties in the trade secure more goods as a result of the trade. How more goods are secured through trading has been shown in our discussion of the law of comparative costs.

6. *Protection Fosters Monopoly.* An argument particularly popular in the "trust-busting" days from 1890 to 1910 was that the protective tariff fosters monopoly. In case a high tariff is in effect, the attainment of monopoly power is made easier because of the elimination of foreign competitors.

7. *Proposed Gradual Revision Downward.* Free traders do not propose that a nation which has followed high protection for a long time shall go suddenly to a complete free-trade basis. Such a drastic change

would disrupt existing industry with unfavorable results. They strongly urge the gradual downward movement of rates in such a manner as not severely to disrupt already established enterprises. They point out also that increasing tariffs are detrimental to industries which must sell largely in export markets.

Political Considerations. 1. *Cause of International Difficulties.* According to those opposed to the protective policy, the tariffs have been and are an important cause of international difficulties. Countries which should, according to the type of their natural resources and industries, engage in international commerce, prefer rather to set up tariff walls and stimulate inefficient industries within their boundaries. Tariff walls are set up along political lines. In establishing such tariffs, nations incur the ill feeling of the countries whom nature has favored with certain natural resources. Retaliations occur. Tariff walls become higher, and the result of the whole situation is international ill will. Particularly in retaliation against the tariff policy of the United States, particularly the tariff of 1930, European nations revised upward tariff rates on American products, notably automobiles and a number of farm commodities.

2. *Legislative Difficulties.* The free trader emphasizes the logrolling, unscientific way in which tariff laws are enacted. Even if congressmen tried to base their votes upon the merits of each petition for protection, they would be unable to familiarize themselves with the accuracy of the claims made for actual or proposed import duties on the thousands of items included in a tariff act. As a matter of fact, members of Congress are not free to act on the merits of tariff requests. "Statesmen rarely stay in Washington." Those in legislative bodies must follow the wishes of the dominant group of their respective constituencies. In his moves to obtain tariff protection for constituents, the congressman finds that working for these rates alone will not bring results. Relatively few congressmen are concerned with a particular rate. Each legislator usually finds that, in order to obtain support for a rate on a particular commodity, he must make trades: exchange his support of rates sought by other legislators for their support of his tariff requests. Not only is this a much criticized legislative practice, but it prevents the consideration of tariff rates on their merits. The final result of this *trading system* is a greater sum total of protection.

Group Interest in Free Trade. As is true in the case of protection, the majority of the people who support free trade do so because it appears to them to be to their economic advantage. This fact is clearly brought out by the division on the tariff issue which has occurred between the Southern states and the Northern states and between different economic groups within these major sections. The established attitude of the cot-

ton- and tobacco-producing states of the South has been for free trade. On the other hand, industrial leaders in the manufacturing states of the North and the East who felt that their industries required protection have been opposed to free trade. Even within the free-trade South, the sugar-cane producers of Louisiana desire protection. On the other hand, some of the Northern manufacturers of automobiles and electrical products have come to be opposed to our protective policy, because they feel it reduces the foreign market for their products.

Import Quotas. Many countries nowadays, of which England is a good example, prefer to limit imports by means of quotas, which specify the exact quantity of a particular good that may be imported in a year. In the United States perhaps the most notable example of a commodity for which imports are limited by quota is sugar, where the preexistent tariff was largely eliminated by the Jones-Costigan Sugar Act of 1937. That act and the succeeding legislation, including the Sugar Act of 1948, specify the amount of sugar that the chief exporting areas, Hawaii, Puerto Rico, (for the purposes of this act they are treated as if they were foreign countries) the Philippines, and Cuba can send in each year.

The arguments for and against quotas are on all fours with those on the tariff question. The purpose of quotas is the same, to limit imports for the benefit of the domestic producers. Thus, sugar quotas are intended to maintain favorable prices for continental beet and cane sugar.

Restrictions on dealings in foreign exchange often have the effect of limiting importation, though that is not their primary purpose, which is usually to maintain stability in a currency's exchange value or prevent a flow of capital from the country.

It is sometimes alleged that import restrictions ostensibly based on sanitary grounds, like the United States prohibition against the importation of frozen beef from the Argentine because of the presence of hoof-and-mouth disease in that country, actually are intended to prevent foreign competition with the domestic product.

The Position of the Economists. It is safe to say that most economists favor free trade chiefly because they believe that the principle of comparative advantage should be allowed to work freely, with the resulting benefits to a country's standard of living. Basically a high standard of living depends on efficiency in production, not on the maintenance of inefficient production. The low wages of the Chinese arise from the low output per man. If the reader will turn back to the brief description of Chinese agriculture (pages 149 and 150), he will see why wages are low in China. Of particular significance are the data on page 150, giving the labor requirements for the production of certain goods in China as compared with this country. These show that for a given product the Chinese must expend from twelve to fifteen times the human labor re-

quired in this country.¹ And the only fields of activity in which foreign nations can compete with us effectively are those to which their natural resources are unusually well adapted, as sugar in Cuba; those in which they have developed unusual skill, as in the making of certain style goods in France; or those in which hand labor in large amounts is still necessary, as in the production of raw silk or certain kinds of toys. In industries to which our resources are adapted or in fields of activity in which machine processes can be used, we have little to fear from foreign competition in our markets, and it is because of our high production in these industries that our employers are able to pay and do pay high wages and that we are able to have a high standard of living. It is to our economic advantage to concentrate upon such industries if our comparative advantage is greater in them than in other industries. If we were in general less efficient in production than foreign nations, our standard of living would of necessity be lower than theirs.

It is nevertheless recognized by those who favor free trade in principle that limitations on imports may be necessary for reasons of military security; that undeveloped countries, as the United States was in the early part of the nineteenth century, are justified in protecting their growing industries; that war-devastated countries having only a limited amount of foreign exchange available are quite right to forbid the importation of luxuries or indeed of any article that will not contribute to the resoration of their economy.

It is interesting that the most eminent economist of his generation, J. M. Keynes, had some questions² as to the universal applicability of a free-trade policy. He appeared to believe that import restrictions might at times of general trade depression maintain employment at home and that at such times the maintenance of employment is more important than the gains to be derived from buying goods in the cheapest possible market. He is careful, nevertheless, to point out that import restrictions should be imposed only after the most careful scrutiny.

There is also a question as to whether a free-trade policy can be maintained in a world in which foreign trade is carried out not by private firms but by states, where currency is managed, where foreign exchange in particular is strictly controlled, and where undeveloped countries on the one hand and war-damaged states on the other feel that industries in the process of being built or rebuilt must be protected.

¹ Because the American farmer uses more machinery, the making of which involves labor, these data do not accurately represent the full amount of human labor directly and indirectly involved in producing farm products in these two countries. Even with due allowance for the labor used in making machines, however, the output per man in agriculture is a number of times greater in the United States than in China.

² *General Theory of Employment, Interest and Money* (1936 ed.), pp. 338ff.

PROTECTION OR FREE TRADE?

More or Less Protection. The issue is not between protection and complete free trade, but rather a question of more or less protection. Few persons would argue that we should at once abolish entirely our protection policy. To do so would disrupt so many of our basic industries as to be disastrous not only to those engaged in the industries now protected but also to many other persons in this country. The issue is between more protection and less protection as a general policy and is further concerned with the treatment of particular commodities in the light of the policy adopted. The free trader argues that we should gradually move toward less and less protection.

One of the basic issues involved in considering tariffs or quotas is the effect import restrictions have on our foreign market for our goods. In the years after the Second World War it was true that the foreign market was no problem. Loans or grants from this country maintained our exports at an extraordinary level. But presumably this was a policy that could not be continued forever. At the time when we shall have reverted to the normal condition of wishing to have foreigners pay for what we export to them rather than, in effect, paying for it ourselves, we shall have to heed the old principle that "the nation which will not buy cannot continue indefinitely to sell." Selling without buying abroad causes export sales to decline because the only way in which exports are finally paid for is by the receipt of imports of goods, services, or gold, and gold is lacking in the rest of the world. Accordingly, the export industries suffer from a protective policy.

Equalizing Costs. One of the difficulties presented by a tariff policy is that there is no principle, unless complete prohibition of imports is the aim, by which tariff rates can be set. Such principles have been advanced from time to time, it is true, but none has appeared to have validity. For example, let us consider the idea of establishing a tariff which would equalize production costs at home and abroad.

The argument for such a tariff first gained prominence in connection with the Tariff of 1909 and was reaffirmed at the time of the passage of the Tariff Act of 1922. Three objections have been raised to the theory of equalizing costs at home and abroad: (1) It is difficult to determine production costs, particularly those abroad. (2) Costs vary widely between producers in the same industry, and hence the question of whose production costs are meant is raised. (3) If the tariff on any good is fully equal to the difference in the cost of producing that good in this country and abroad, practically all trade in that article will cease. A tariff truly equal to the difference in cost of production is a prohibitive

tariff. The equalizing-costs principle does not help in deciding on which articles to place a tariff. Why shouldn't there be a tariff on bananas which would equalize the cost of growing bananas in Honduras and—in hothouses—in the United States? This points to another difficulty in tariff making, how to decide on any basis except that of political power which commodities should enjoy protection.

The Tariff Commission. One of the unfortunate aspects of the protective tariff is that actual rates are the result of political maneuvering. It has been hoped that Congress would lay down the general principles which should govern tariff rates and then leave the actual determination of the duties to a nonpolitical administrative agency. To investigate production costs, prices, market conditions, and so on, is the task of a specialist.

The major step in this direction was the establishment by the Fordney-McCumber Act of 1922 of a nonpartisan commission appointed by the President with the approval of the Senate. Its duty has been to investigate the cost of production of goods here and abroad and to recommend tariff changes to the President.

The Reciprocal-trade-agreements Program. Aside from a sharp reduction of tariffs under the Democratic administration of 1913, until 1934 our tariffs tended upward. The reductions of 1913 were removed by the Republicans in 1922, and then, in the Hawley-Smoot Act of 1930, tariffs reached the highest point in our history. When the Democrats returned to power in 1932 a new technique of tariff adjustment was adopted—the reciprocal-trade agreement.

Under a law passed in 1934 the President was authorized for a period of three years (since extended for four similar periods) to enter into reciprocal-trade agreements with foreign countries. A number of restrictions were placed on the content of these agreements, among which were: (1) no articles might be transferred from the dutiable list to the free list or vice versa, (2) no tariff rate might be increased or decreased by more than 50 per cent, and (3) the most-favored-nation clause must be included in the treaties. According to this clause, concessions in the treaty are granted not only to the other party to the treaty but also are extended automatically to all other countries which in no way discriminate against the United States in matters of international trade. This means that the tariff concessions in the bilateral agreements thereby become general concessions to most nations. In the negotiation of the treaties the results of this clause are modified, however, by the practice of making concessions to a country only on goods of which it is the chief supplier.

By 1948 reciprocal-trade agreements had been negotiated with about thirty countries. In general, tariff concessions have been moderate. Without this method of tariff adjustment, however, progress toward in-

creased freedom in trade would have been unlikely. Those groups on whose products only minor tariff concessions have been made have become increasingly vociferous. Though all interested parties have been given hearings by the State Department, as is required by the law, this can hardly be expected to satisfy where dollars and cents are involved. Significantly, those who have benefited—producers of exported commodities, exporters, consumers, businessmen in purely domestic industries—have been rather inarticulate.

In 1948 the Republican Congress—it may be noted that Republicans have usually been on the high-tariff side and Democrats on the low—extended the law for one year but severely circumscribed the power of the Executive Branch to make agreements. The succeeding Democratic Congress then proceeded to reverse this action, restoring the original law, but if the opponents of the reciprocal trade program prevail, then the points first discussed in this section, such as the effect of high tariffs on exports, the questions of how high tariffs should be, and how to decide on which commodity they shall be placed, as well as the dubious nature of the political process by which rates actually are established, will be extremely pertinent.

Trade Restrictions to Protect Balance of Payments. Much of the great wall of tariffs, import quotas, and restrictions on use of credit for the importation of goods, which has been built up since 1929, has not been designed to shield specific industries, but to protect a nation's balance of payments. Most of the nations of the world, with the notable exception of the United States, have, on various occasions since that time experienced a sizable excess of debits in international transactions. The varied means adopted to correct such a situation are somewhat different in character and in objective from the more usual devices aimed to protect specific domestic industries. Specifically, the usual protective tariff has different rates for each commodity. When, however, the objective is to reduce debits, uniform tariffs will be put on broad groups of articles, or restrictive quotas will be placed on the importation of certain goods. In part these newer techniques represent the disordered state of international affairs, and in part the attempt of countries to introduce governmental control, as opposed to market control, of their economies.

The International Trade Organization. In an endeavor to counteract the world-wide tendency toward state control over and restrictions upon foreign trade, the United States government brought its overwhelming influence to bear to persuade other nations to join the International Trade Organization, the charter for which was drawn up at Havana in March, 1948. This charter was signed by the United States, United Kingdom and other members of the British Commonwealth, France, most Latin-American countries (notably not Argentina, the most important in inter-

national trade), and most other countries except those in the Soviet sphere. Many of these countries, however, signed quite reluctantly and only after so many exceptions had been written into the charter, which pledged the signatories to work toward free trading, that it is doubtful if the organization will ever come close to accomplishing its object.

THE EFFECT OF TRADE RESTRICTIONS ON AGRICULTURE

Points of View. The interest in the farming industry in restrictions on imports may be discussed from four points of view: (1) To what extent may the producers of certain agricultural products be benefited by limitations on imports from foreign countries? (2) To what extent may farmers gain by more protection for farm products or for the products of urban industry? (3) What effect does protection have on farmers as consumers? (4) To what extent is the foreign market for exported American farm products affected by our present policy?

Protected Items. On practically all farm products produced in this country there is a tariff. The rates for a number of products are shown in Table 45.

TABLE 45. UNITED STATES TARIFF RATES ON SELECTED AGRICULTURAL COMMODITIES

	(1946)	Tariff rate
Item		
Flaxseed		
1930 tariff law		\$0.65 per bushel
According to Argentine and Uruguayan trade agreements		*0.32½ per bushel
Butter		
1930 tariff law		0.14 per pound
Wheat		
1930 tariff law		0.42 per bushel
Cattle hides		
1930 tariff law		10% of the value
According to Argentine and Uruguayan trade agreements		*% of the value
Grease wool—not finer than 40's		
1930 tariff law		0.24 per pound
According to Argentine and Uruguayan trade agreements		*0.13 per pound

SOURCE: C. F. Wells, "U. S. Tariff Rates on Agricultural Products," U. S. Department of Agriculture August, 1946.

* Current rate.

In general, except in special cases like wheat during the drought years, when we were on an import basis, the tariffs on that grain and on most dairy and poultry products, of which we have surpluses for export, are meaningless, because tariffs have effect only on the prices of imported commodities.

Two farm products for which over an extended period of years the prices have been appreciably increased by the tariff are sugar and wool. Continental United States in the past has produced only from a quarter to a third of the total sugar consumed in the country. Until 1937, there was a tariff of 2 cents per pound on sugar from Cuba, from which most of our foreign imports (as distinguished from shipments from the territories) come and which in the past has provided two-thirds of the United States supply and more recently has provided from a quarter to a half. In consequence, as per capita consumption was 100 pounds annually, a family of five paid about \$10 more for its year's sugar supply than it would have in the absence of the tariff.

Since 1937, protection for domestic sugar producers has been afforded by quotas rather than the tariff, which has in effect been lifted for Cuban sugar. Under the Sugar Act of 1948, imports from Cuba constituted from 28.6 to perhaps as much as 40 per cent of United States consumption. This will benefit continental, Hawaiian, and Puerto Rican producers because in the absence of the limitation we would buy a much larger share of our supplies in Cuba, at lower prices than the domestic or territorial areas are willing to take. As long as Cuban exports to the United States are restricted, these other areas do not have to meet Cuban prices.

In recent years domestic wool production has averaged about 400 million pounds, while imports after 1940 ranged from 200 million to over a billion pounds. With the price of imports forced up by the tariff, the price of domestic wool was higher than it would have been in a free market, to the benefit of domestic producers but to the detriment of consumers. There was so much wool in the country, however, after the Second World War, as a result of wartime stockpiling efforts, that the price of foreign wool, despite the tariff, was below the domestic, which was maintained by law. To protect domestic wool prices against the low-priced foreign product in 1947, Congress passed a bill putting a quota on wool imports, an action which almost disrupted the conference preparing the charter for the International Trade Organization and negotiating trade agreements with Australia, among others, because the Australians, the world's chief wool exporters, threatened to withdraw. The Administration finally forced Congress to drop the quota and now it is provided that domestic wool growers receive a price equivalent to 90 per cent of parity from the Commodity Credit Corporation, even though that agency may sell the wool in the domestic market at a lower price and take a loss. This provision was modified by the price support law of 1948, described in Chap. 27.

Other important farm products on which the tariff has been effective

are butter, beef, flaxseed, and lemons and certain other California fruits and nuts.

Effect of More Protection. To what extent would farmers gain by more protection for farm products? The answer to this question is problematical. Practically every farm product is protected from direct competition of like goods produced in foreign countries. What foreign competition remains is almost entirely indirect, such as the competition of bananas with apples. With apples on an export basis, it is questionable whether a tariff on bananas and higher accompanying tariffs would be to the advantage of American apple producers. The answer depends in part upon the degree to which bananas consumed in this country replace apples which would otherwise be consumed, and the answer to that question is unknown. Such a tariff might easily result in further foreign tariffs on American apples in retaliation against the extreme tariff policies of this country. Tariff advocates often appear to assume that the particular tariffs they ask for are the only ones that will be levied. There can be little question that this country's extreme tariff policy in the period before 1934 was a contributing factor in the high tariffs of other countries, which greatly reduced the export markets for American farm products in the 1930's and may do so again when normal conditions supervene.

Furthermore, in the long run particular groups of farmers cannot hold much of the advantage which they get over other groups of farmers or other parts of the population by means of tariff (or quotas). The owner of land which is suited only to sugar or sheep may permanently gain from a tariff on sugar or wool. But, because the exclusion of foreign products in the long run means a reduction of our exports, tariffs result in the long run in such a shifting of people out of the industries previously selling in the export markets that the particular groups who secure an immediate advantage are not able to retain that advantage, particularly as to wages. Wages in protected industries will not be higher than in the other industries, and the ability of more industries to pay high wages is reduced by the tariff. Universal protection can help each group only if the general effect is greater productivity. In the light of the law of comparative costs, it cannot be successfully maintained that this result follows from a protective tariff.

Tariffs on Manufactured Goods. Further protection for urban industry should result in further urbanization. Would this benefit farmers? Those who assert that it would do so make use of the home-market argument for a protective tariff. The fundamental fallacy of that argument has already been mentioned. The argument assumes that if urban industry is able to charge farmers higher prices this will benefit farmers, as the urban population will spend with farmers some of this greater in-

come from the higher prices which farmers have paid. The disadvantage to the farmers is that they receive a smaller amount of urban products in exchange for a given quantity of their products. Farmers are not benefited by higher prices for the things which they must buy. Tariffs take more from those who pay higher prices, because of them, than they give to those who receive higher prices, because of them.

Farmers as Consumers. Those farmers engaged in producing protected commodities may gain, at least temporarily, enough from protection for their products to offset their loss as consumers who must buy at higher prices. But when we add together the farmers who produce commodities on an export basis and others who receive little direct benefit from the tariff, we have included the majority of the farmers. When these farmers purchase sugar, wool products, or any other protected agricultural or industrial commodity, the price they pay is higher than that which they would have to pay if the protective tariff did not exist. When there was a tariff on sugar, it was estimated that farmers in the aggregate paid increased prices for sugar by an amount greater than the benefits from the sugar tariff to all sugar producers in Continental United States. The quota probably has a similar effect. The effect of protection on these farmers is a reduction in the purchasing power of their income. John D. Black, writing in 1929, attempted to reduce the effect of the tariff to quantitative form. He estimated that the amount annually added to the farm value of protected farm products was 560 million dollars, and that of this farmers themselves in the aggregate paid 260 millions; thus farmers received a net gain of only 300 million dollars from a tariff on farm products.³ This analysis, however, gave no consideration to the detrimental effects of our tariff policy on foreign markets for our farm products. Neither did it consider the amount added to the farmer's costs of production and of living by tariffs other than those on farm products. Black's study was made prior to the passage of the Tariff Act of 1930 and the beginning of the depression. To measure in a quantitative manner fully and with reasonable accuracy all the effects of a tariff policy such as that of the United States is a well-nigh hopeless task.

THE FUTURE OF UNITED STATES FOREIGN TRADE

The Future of Agricultural Exports. As long as the Marshall plan commits the United States to large exports of capital, that is to say till 1952, and as long as European food production is below normal—as will be the case according to the Food and Agriculture Organization, for the same length of time—a good export market for our farm products is assured. Not perhaps of the same extraordinary extent as prevailed

³ *Agricultural Reform in the United States* (McGraw-Hill, 1929), p. 206.

from 1944 to 1948—as witness the U.S. Department of Agriculture request in July, 1948, to farmers to reduce wheat plantings for the next harvest—but certainly our exports will be substantial. If after the expiration of the Marshall plan we cease to export capital, and Europe—and Asia restore food production to prewar levels or better, what then?

In order to answer this question intelligently it is necessary to make assumptions as to the state of domestic business activity during the 1950's. If it is assumed that something like the extremely high rate of activity that prevailed in 1948 is maintained, even a very material reduction in exports should not seriously impair over-all farm income. The war and postwar period amply demonstrated how much more meat, milk, eggs, chicken, fruits, and vegetables Americans would eat if they could get them. The growth of our population and the tremendous demand generated by high employment will go far to replace the export market. There will, however, be shifts among crops. Presumably, if exports are greatly reduced, we shall no longer need 1.2 billion or more bushels of wheat, and where it is possible, wheat land will be turned to corn for feeding beef cattle, milk cows, and chickens, whose products will be in demand. Or a greater proportion of wheat may be fed to livestock than has customarily been the case in the past.

As a specific example of what a high degree of prosperity can do for consumption, let us take a nonfood crop, cotton. Before the Second World War, the crops averaged about 13 million bales annually, domestic consumption was between 5 and 7 millions, while exports ran about 5 million. As a result stocks piled up. In the later war and postwar years, however, production was reduced somewhat, to between 10 and 12 million bales, while domestic consumption shot up to 9 or 10 million bales annually. Despite a reduction in exports in 1946 to 1948 to an average level of less than 2 million bales, stocks were reduced and prices were high. As long as domestic consumption stays at 10 million bales, cotton growers do not have to worry about the foreign market. If, however, domestic utilization should ever fall to the old levels, we should be confronted with the choice of expanding our exports or further curtailing cotton production.

If export outlets should be narrowed and economic activity should fall to prewar levels, with from 10 to 20 per cent of the labor force unemployed and business profits greatly reduced, American farmers would be faced with a very serious situation. The position of wheat would be even worse than that of cotton. Postwar crops ran over 1.2 billion bushels as compared with the prewar 800 million. There was no increase in domestic consumption for food, though hundreds of millions of bushels went for feed where none did before the war. The big difference between the postwar and prewar positions, however, was due to exports, which

have run as high as 400 million bushels per year as compared to an average figure of 67 millions in the 1935 to 1939 period. If wheat exports were reduced to such a figure, we would have enormous "surpluses" on our hands.

In an endeavor to preserve our export market for wheat even if European crops come back to normal, a Wheat Agreement was negotiated in 1948 between the principal importing and exporting countries, except Russia and Argentina. This agreement required the importers to take specified quantities of wheat through 1952 at specified prices, from the exporters. The *minimum* quantity to be purchased by the importing countries in a year was set at 500 million bushels, of which the United States was to supply 185 millions. Congress, however, failed to ratify the agreement in 1948.

Regardless of whether the Wheat Agreement is finally ratified or not, if our farmers because of reduced business activity at home should become more dependent on the foreign market, they would have to hearken to the fundamentals of foreign trade, which have it that to export you must import. If the United States stops exporting capital, but wishes or has to export goods, then it must be prepared to receive goods—or what are the same things as goods in economic terms, that is, services like tourism, shipping, or insurance—in return.

What is important to notice is how important government policy is to the future of our agricultural exports. If we continue to export capital, our exports will continue. If we do not and still maintain prices in this country above world levels through crop restriction or otherwise, our exports will diminish greatly. On the other hand, even in the absence of capital export, export subsidies, like the ones on cotton and wheat just before the war, could maintain our exports. Of course, the policy of the United States is not the only one to be considered. Other countries can act so as to accept or block our exports. It is difficult to predict the future of our exports because it depends almost entirely on the policy of our government and others. What that policy will be some years from now can hardly be foreseen.

If comparative advantage were the principal regulator of trade, prediction would be easier. It might be interesting to speculate, as is done in the next paragraph, as to the course United States exports would take if free trade prevailed.

Comparative Advantage. The comparative advantage of a country in producing certain goods changes from time to time; and, if free trade prevails, the nature of that country's exports and imports will change accordingly. In part, the shifts in relative advantage may come from technological advances, from the discovery of new resources, or even from changes in demand affecting the scale of operations. In part, also,

these changes of a nation's comparative advantage in the production of certain goods are an accompaniment of that country's transition from a new region producing primarily raw materials to the status of a highly industrial area. In the former stage of development, exports tend to be of raw materials and imports of manufactured goods. Usually, in a highly industrialized nation, the character of the foreign trade is the reverse of the above.

In the case of the United States, there was before 1940 a tendency for agricultural exports to form a diminishing part of total exports, which may be resumed after the abnormal postwar demand falls off. Yet on the grounds of comparative advantage, cotton, hogs, tobacco, high-grade fruits, some grains, and some other products should continue to be exported in large volume in the future. The manufactured products exported should continue to be those in which this nation is relatively superior—standardized articles produced on a large scale.

There is some possibility that agricultural imports might exceed agricultural exports in the future if tariffs were very low, though not to the extent that has been true in the history of most industrialized countries. In the absence of tariffs, wool and sugar, frequently beef, and some dairy products, among other farm products, would enter in large volume, in addition to the present long list of tropical products. However, with our population sparse relative to our tillable land, we should probably not come to depend on importing the raw products of the farm to the extent that is true of countries of Western Europe. Imports of manufactured goods, if trade were free, would consist of articles adapted to the resources, technology, or artistic abilities of foreign peoples but would rarely be standardized goods adapted to our large-scale production, based on abundant resources of raw materials.

Questions and Problems

1. How does a protective tariff differ from a revenue tariff in commodities to which it is applied and in amount of the duty?
2. Exactly what is the *home-market argument* for a protective tariff, and how does the free trader answer it?
3. Summarize and discuss the reasoning on which the free trader bases his conclusions that wages even in a protected industry are not increased by a protective tariff.
4. What is the infant-industry argument for tariffs?
5. Are economic considerations the sole determinants of foreign-trade policy?
6. Compare the effects of tariffs or import quotas on those engaged in agriculture in two states in which their effects are relatively different.
7. What is the International Trade Organization?
8. On what basis should limitations on imports be set?
9. What is the reciprocal-trade-agreements program?
10. Do you favor or oppose tariffs or other restrictions on imports? Why?

Suggested Readings

1. F. W. Taussig's two books, *Some Aspects of the Tariff Question* (1931), and *The Tariff History of the United States* (1931), are among the more scholarly treatises on the tariff question. His *Principles of Economics* (1939), Vol. I, Chaps. 36 and 37, covers the tariff issue in a briefer manner.

2. H. J. Tasca, *Reciprocal Trade Policy of the United States* (1938), is a discriminating analysis of that subject.

3. Francis B. Sayre, *The Way Forward* (1940), is an excellent explanation of and argument for the reciprocal-trade-agreements program by one who has had an active hand in the formation of trade agreements.

4. J. S. Davis, *International Commodity Agreements* (1947), is a very interesting discussion of one aspect of foreign-trade policy.

5. Calvin Hoover, *International Trade and Domestic Employment* (1945), is a study of the effect of foreign trade on the level of employment.

CHAPTER 21

TAXATION AND THE FARMER

Every citizen, including the farmer, is interested in governmental finance, both as a taxpayer and as a recipient of governmental services. In a society such as ours, characterized by marked inequality in the income of individuals, it should not be expected that each person will receive as benefits an amount equal to his contribution to governmental income. Yet each person is directly or indirectly a payer of taxes and at the same time receives some benefits from the existence of government and the performances of its activities. The farmer's interest does not cease with the taxes he pays, which are primarily property taxes, but must include a consideration of the entire field of public revenue which supports the government in its activities, many of which are of peculiar value to agriculture.

This twofold interest of the citizen points out the two aspects of public finance with which we should concern ourselves here: public expenditures and public revenues.

Increase of Public Expenditures. The total expenditures of all governmental agencies in the United States have been increasing rather consistently since the turn of the century. These expenditures increased from 1.8 billion dollars in 1903 to 2.9 billion dollars in 1913 and then to a wartime peak of 18.6 billions in 1919, falling thereafter to about 10 billion in the early 1920's, whence a steady rise began (interrupted somewhat in the depression years 1932 and 1933) to a peacetime peak of 17.3 billion dollars in 1939, and then, as defense and war expenditures mounted, to an all-time high of 103 billion in 1944. As the war ended, there was a very rapid decline to about 47 billion in 1946.

The slow rise in the twenties was due to increases in the outlays of state and local governments. The more rapid rise of the thirties was due to Federal expenditures for veterans, public work, and farm-relief programs.

The proportion of total expenditure by each of the jurisdictions, Federal, state, and local, has changed notably over the years. In 1913 the percentage breakdown of total government expenditures was Federal, 23.7; state, 13.1; local, 63.2. In 1929, the corresponding percentages were: Federal, 30.1; state, 15.3; local, 54.6. By 1938, Federal expendi-

tures amounted to 52 per cent of the total and by 1946 to 78 per cent. As these percentages show, there has been a constant tendency to shift more of the cost of government to the larger units. States have taken over an increasing portion of the support of highways and schools. The Federal government assumed the major part of the relief expenditures of the thirties. Since that time, military expenditures, veterans' benefits, and debt payments, all almost entirely borne by the Federal government, have increased the Federal share, as have its social expenditures on housing, on health, and on agricultural conservation. As the country has become more unified through the development of modern means of communication and transportation, as the dependence of each section on every other has been better understood, and as the feeling has grown that benefits extended to one group should be available to all and that burdens should be equally shared, as, in consequence of all this, almost every governmental activity is of wider and wider scope, the natural tendency is for the activity to be taken over by the larger governmental unit.

Expenditures and Income. A set of historical figures for total government expenditures is not very meaningful, for they would be expected to change with population growth and price-level variations. The best measure, therefore, of real changes in expenditure is the relation between national income and government expenditure, to which we called attention in Chap. 6. There we noted the increasing proportion of national income spent by the Federal government. It may be of interest here to present figures based on expenditures of all governmental units, Federal, state, and local. In 1890, they spent 7.1 per cent of the national income; in 1929, 11.7 per cent; in 1939, 23.8 per cent; in 1946, 26.2 per cent.

This increasing proportion of income spent by government has been accompanied by an increase in government debt, indicating that it has in part been accomplished out of the proceeds of borrowings, which in total have not been repaid, though, of course, individual lenders have been repaid when their bonds or notes came due. Thus, the Federal debt, which was down to about 1 billion dollars before the First World War, rose to 25.5 billions by 1919, was reduced to 16.2 billions in 1930, but began to rise on account of falling revenues and relief expenditures in the thirties to 43 billions in 1940, then hit a wartime peak of 269.4 billions at the beginning of 1946, whence it declined to about 250 billions by the end of 1947. The total state and local government debt of 16 billion dollars is insignificant in comparison.

This tendency of a national debt to increase in the long run, chiefly on account of war expenditures, parallels the history of the English and French debts. The former has risen steadily since 1696, when, in a

modern sense, it can be said to have been initiated. The French debt rose steadily from the Napoleonic wars to the end of the First World War, when in effect it was canceled by the postwar inflation of 1918 to 1925, only to start rising again thereafter.

Causes of Increased Expenditure. Briefly, what were the causes of this increased governmental expenditure? Prior to 1933, so far as the Federal government is concerned, paying for the First World War in the form of veterans' relief, bond interest, and principal, plus the current expense of the Army and Navy, accounted for most of the increase. In the fiscal year of 1928, expenditures for protection and debt redemption and interest, which are largely chargeable to that war, totaled 3,190.4 millions, or 80.3 per cent of all Federal government cost. In the 1932 Federal budget, about \$3 out of every \$4 was appropriated for military, war-debt, and similar expenditures. The effect on the Federal budget of expenditures related to the depression is portrayed in Fig. 35. As the depression deepened, outlays for the usual operations of the government declined, but government loans to business, etc., increased. Public works were begun early in the depression and reached their peak in 1936 and 1937. Federal appropriations for relief began in 1934 and continued in large volume till 1940. Since then direct war expenditures, expenditures growing out of the war, like veterans' benefits, continuing large military appropriations, and loans and gifts to foreign countries (again largely due to the aftereffects of the war) have dominated the Federal budget.

Aside from direct war or war-caused spending, the increased cost of Federal, state, and local government is due chiefly to the fact that, as our civilization has become more complex, it has become necessary and desirable for governments to carry on a widened scope of activities. A dense population requires relatively greater expenses for the maintenance of law and order. Our complex economic organization results in certain injustices if unregulated. In particular, those who are economically weak—the consumer, the laborer, and the small businessman, such as the farmer—must be protected from those who are economically strong. This fact results in governmental activities to prevent monopoly, to preserve fair methods of competition, to inspect foods and drugs for purity, and to regulate the hours and working conditions of labor. Thus our state and local governments as well as our national government have established various regulative agencies whose activities, involving the employment of a large number of people and other expenses, bring a heavy public expenditure.

The governmental activities except military which have contributed the most to the increase of state and local tax burdens in the last few years are those developmental activities whose purpose is to promote the

mental and physical well-being of the citizens. It has been found desirable for the government to carry on many activities which individuals used to perform for themselves. At an early period a father paid for the education of his children. Developed highways were toll roads. Each person had to buy the books which he wished to read; he could not draw

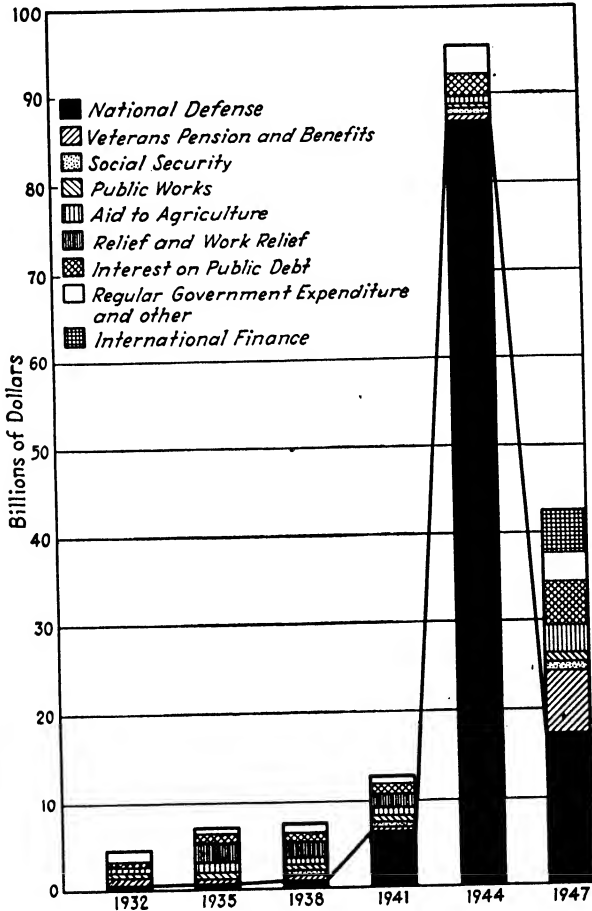


FIG. 35. Expenditures of the Federal government, selected years.

them out of a public library. We believe now that it is of advantage to society as a whole to have much of the education, the providing of road transportation, the supplying of some reading material, and much of the work of preserving health performed by the public. Education took 7 per cent and highways 4.5 per cent of the net public expenditures in 1942. A considerable part of the payments on interest and principal of the public debt of state and local governments should also be assigned

TABLE 46. FEDERAL, STATE, AND LOCAL REVENUE, AND EXPENDITURE, 1942
 In millions of dollars. To eliminate double counting in totals of Federal or State and local governments, subtract from general revenue item "aid received" and subtract from general expenditure item "aid paid."

Item	Total	Federal	State and local	Item	Total	Federal	State and local
General revenue				General expenditure			
Total.....	26,858	13,721	13,137	Capital outlay			
Taxes.....	23,165	13,510	9,655	Natural resources.....	207	196	11
Individual income.....	3,539	3,263	277	Sanitation.....	38	.....	38
Corporate income.....	5,421	4,744	277	Health and hospitals..	38	.....	38
Property.....	4,593	.....	4,593	Public welfare.....	4	.....	4
Sales and gross receipts				Schools.....	169	.....	169
and customs.....	5,640	3,294	2,346	Miscellaneous.....	69	7	62
Licenses and privilege..	1,340	518	822	Aid paid to other govern-			
Pay roll.....	2,354	1,271	1,084	ments.....	2,647	837	1,810
Other.....	678	421	257	Public safety.....	118	101	17
Aid received from other				War activities.....	101	101	.....
governments.....	2,572	†	2,572	Police.....	10	.....	10
State.....	1,662	†	1,662	Other.....	7	.....	7
Other.....	909	†	909	Highways.....	508	154	354
Earnings and miscellane-				Natural resources.....	30	29	1
ous.....	1,122	211	910	Health and hospitals..	39	29	10
General expenditure				Public welfare.....	772	376	396
Total.....	47,328	34,320	13,008	Schools.....	829	29	801
Operation.....	31,138	23,954	7,184	Miscellaneous.....	350	119	232
General control.....	1,162	438	724	Debt service.....	2,897	1,260	1,637
Public safety.....	21,915	21,158	757	Interest.....	1,796	1,260	536
War activities.....	21,127	21,111	16	Provision for debt re-			
Police.....	397	10	386	tirement.....	1,101	.....	1,101
Other.....	392	37	355	Contributions to trust			
Highways.....	866	66	800	funds and enterprises..	3,028	1,693	1,336
Natural resources.....	1,160	1,001	159	Enterprises			
Sanitation.....	188	.....	188	Operating revenue.....	2,857	1,694	1,164
Health and hospitals..	605	27	578	Operating expense.....	2,191	1,587	604
Public welfare.....	2,344	1,125	1,219				
Schools.....	2,247	23	2,224				
Miscellaneous.....	650	115	536				
Capital outlay.....	7,618	6,577	1,041				
General control.....	52	33	19				
Public safety.....	6,298	6,265	33				
War activities.....	6,265	6,265	.....			
Police.....	5	.....	5				
Other.....	16	.....	16				
Highways.....	743	75	668				

SOURCE: From Table 384, *Statistical Abstract of the United States, 1947*.

* Sources are (a) as to revenue, U.S. Treasury Department, Combined Statement of Receipts, Expenditures, and Balances of the U.S. Government, Fiscal Year Ended June 30, 1942, pp. 25-31, and (b) as to other data, special compilation by courtesy of Bureau of Accounts, U.S. Treasury Department.

† Included in "Earnings and miscellaneous."

‡ Includes veterans' aid.

to these activities, the scope of which is increasing as time goes on. Thus government now subsidizes housing, does research into the causes of serious diseases, pays pensions for the old and indigent, and, in time of depression, provides relief for the unemployed. There is every prospect that this kind of activity will grow as time goes on, as witness the proposals for the Federal government to expend large sums for education (something it has never done before) and to institute a system of health insurance.

The trend, especially noticeable since 1933, for the state to play an increasingly large part in fostering the health, welfare, and education of its citizens has led some people to call the United States a "social service" state.

Benefits of Expenditures. The individual citizen may not feel that he is receiving increased benefits in proportion to the increase in governmental expenditures. This is possible for three reasons. First, citizens must realize that the government now performs for them activities which they themselves formerly paid for directly, such as school privileges, use of roads, and so on. In addition, the government now performs activities which were beyond the power of the individual to accomplish previously. As illustrations, we note the attempt to preserve the general healthful environment of a community through draining swamps, requiring the removal of garbage, and administering quarantine laws. Third, whereas individuals purchase largely tangible goods and are fully conscious of the satisfaction which they derive from consumption of these goods, the government renders services which are largely intangible in character and of which the citizens are not fully aware. Many of the services of the government are those of creating a desirable environment to which we become so accustomed that its presence is seldom realized, although its absence would bring criticism of the government and a movement for reform. Law and order maintained by the government are necessary for either personal security or property values.

REVENUE PRINCIPLES AND SYSTEMS

The Nature of a Tax. Governments have varied sources of income: taxes, fees, special assessments, rates charged by public industries, and public borrowing. The last three do not add to the net spendable revenue of the government, for at the time of obtaining the funds a corresponding liability is incurred. Fees (charges levied for certain government services) do give a certain amount of revenue which the government may spend in a certain way, but they do not furnish revenue for the general expenses of government. They simply repay the government in part for a special service to the one who pays the fee. Special assessments are levied on property owners to pay for specific improve-

ments, such as street paving, the government merely acting as a collection agency between the property owners and those who install the improvements. Usually, governments do not obtain an appreciable net income above the costs involved in operating public industries, for rarely are public industries in the United States operated for the purpose of obtaining a profit. In fact, some public industries are operated at a loss; for example, the New York elevated and subway system, till the ten-cent fare was instituted. When the government borrows, it at the same time incurs a liability which must be paid off in the future, though this obligation is more theoretical than real. The growth over the decades and the centuries of the United States and British debts demonstrates that in reality government debts are never paid off.

Taxes are distinguished from one or more of the above sources of revenue in the following respects: (1) Taxes are compulsory in a sense that all people who fall into a certain group, such as property owners, are subject to the tax. (2) Taxes provide net revenue which the government is free to spend in such manner as prescribed by law. (3) The purpose of levying taxes is to obtain revenue to carry on those governmental activities which promote the general welfare. The proceeds of taxation are not to be spent to provide particular benefits to certain people, unless in the providing of these benefits a public benefit is also conferred. When the state supports institutions for defectives, those people are receiving a benefit but at the same time society as a whole is being benefited.

Federal Tax System. The general direction of change in the Federal revenue system has been away from taxes on commodities imported or produced in the country toward taxes on incomes of persons and corporations. Prior to the nineties, except during war periods, the Federal government relied almost solely on import duties and a few minor excises, taxes which as a rule are passed on to consumers in higher prices. From the nineties until 1914, excise taxes on selected commodities, particularly tobacco and alcoholic beverages, became more significant. After the imposition of the income tax in 1914 as a permanent part of the revenue system, this direct tax came to be the major source of Federal revenue. From 1924 until 1932 the tendency had been to exempt all smaller family incomes from the Federal income tax, a married couple without dependents being allowed \$3,500 of net income tax-free and there being further allowances for specified dependents. The \$3,500 exemption was reduced to \$2,500 in 1932. As the burden of defense and war expenditures increased, the exemption was reduced to \$1,000 for a married couple without dependents and \$500 for a single person. With the postwar reduction in expenditure, the Revenue Act of 1948 put these exemptions up to \$1,200 and \$600. Also during the war, in addition

to the regular corporate income tax, an excess-profits tax of 75 per cent on profits larger than those made during a specified base period was enacted, but this was removed soon after V-J Day.

During the depression the revenue from income taxes declined materially, so the government resorted to a number of manufacturers' sales taxes, the raising of existing tax rates, and borrowing. With the war, not only were income taxes raised, but so were excise taxes, like the one on movie admissions, and many new ones, like the one on furs and jewelry, imposed. The most important of the excise taxes, however, remained, those on tobacco, liquor, and gasoline. In 1946 of the 39 billion dollars received by the Federal government, about 44 per cent came from personal taxes, almost all from the personal income tax, 21 per cent from corporate income taxes, about 19 per cent from excise taxes, only about 1.3 per cent from customs, which used to be the main source of revenue in the nineteenth century, and 14.5 per cent from

TABLE 47. ESTIMATED INCOME TAXES PAID BY FARMERS

Year paid	Amount paid	Year paid	Amount paid
1941	\$ 15,000,000	1945	\$725,000,000
1942	50,000,000	1946	720,000,000
1943	425,000,000	1947	760,000,000
1944	275,000,000	1948	960,000,000

SOURCE: U.S. Department of Agriculture, *Agricultural Finance Review*, 1948.

social-security taxes, which are not used for general purposes but go into the various social-insurance funds. Miscellaneous taxes made up the remaining 3.2 per cent.

Until the tremendous wartime and postwar increase in farm income, as well as the lowering of exemptions, made many farmers subject to the Federal income tax, farmers had paid relatively little directly in taxes to the national government, though they may have paid considerable indirectly. This is shown in the table above giving the Bureau of Agricultural Economics estimates of income taxes paid by farmers in recent years.

It is estimated that in recent years over half the farmers in the country filed income-tax returns. Except in the last few years direct taxation of farmers has been only by state and local governments. To the description of their tax systems we now turn.

The Development of Modern State and Local Tax Systems. In the early days of the New England colonies, such taxes as were levied were on property, the ownership of which represented the economic position of the various citizens. At a later date the New England colonies had

a faculty tax, which was a tax on artisans and professional people who held relatively little or no property. The southern and middle colonies experimented with customs duties on imports and exports. Even before the Revolutionary War, the middle colonies were coming to rely more and more on taxes on specific kinds of property, particularly land. The establishment of the Constitution brought a separation in revenue sources; the Federal government was to obtain its support from such taxes on commodities as customs and excises, and the various state governments were in effect given the field of property taxation.

Early state tax systems raised most of the revenue from taxes on specific kinds of property, chiefly land and major improvements. From time to time additional types of tangible property were added to the list of taxable property. Then later, particularly as the corporate form of business organization came to be increasingly popular, new forms of property which were intangible—that is, represented claims of one person on another person or corporation, such as stocks, bonds, mortgages, or promissory notes—were added to the list of property subject to taxation, the result being the general property tax. Finally, most of the state constitutions came to include a clause known as the *uniform tax clause* which was stated in some such words as these: All property shall be taxed according to its true and fair value. The legislature was allowed to exempt from taxation certain property such as that used for charitable or educational purposes.

The uniform tax clause is significant in taxation for the following reasons: (1) It implies that all property is subject to taxation unless specifically exempted. (2) All property must be taxed in the same manner, that is, according to its true and fair value. (3) The fact that this clause was put in the constitution of many states has been a serious barrier to further changes in tax systems.

Most state and local revenue systems are dominated by the property tax, which before the Second World War provided more than 50 per cent of their total receipts and in 1946 was still the largest single source of revenue, accounting for almost 37 per cent of total receipts of 12.4 billion dollars. In that year state personal and corporate income taxes, collected in 31 states, produced 7 per cent; general sales taxes in 23 states, 8 per cent; gasoline taxes and automobile licenses, 10.5 per cent of their total revenue. Grants-in-aid from the Federal government for social-security payments, highways, education, etc., came to 8 per cent of total local government receipts. The remaining 30 per cent came from a very wide variety of sources, including liquor, tobacco, and inheritance and gift taxes.

Most of these taxes, it should be noted, went to the state governments, which, as these other sources developed, relinquished the proceeds of

property taxes to local governments. Although a few municipalities like New York City levy local sales taxes, and others like Philadelphia have local income taxes, the predominant source of local revenue is the property tax.

The Proper Distribution of the Tax Burden. Who should bear the burden of supporting public activities? Two theories advanced to answer this question have been in wide vogue, although the tendency is increasingly toward the second of these theories. The first theory is that each person should contribute to the support of the state in proportion as he receives benefits. The second theory is that each person should contribute toward the support of the state in proportion to his ability. The benefit theory implies that the taxpayer is hiring the government to perform certain functions for him and that he is paying in proportion as he receives benefit. There are certain difficulties with this theory. One of the most significant of these is that many of the governmental activities confer such a general benefit that the benefit conferred upon a particular taxpayer cannot be measured. Furthermore, insofar as any quantitative expression of benefit is possible, many people who receive the most benefit from our government today are those who pay few or no taxes. Examples of such people are those in old people's homes, insane asylums, public orphanages, and so on. Finally, the benefit theory assumes an erroneous relation between the citizen and the state. The state is not hired by the taxpayer to protect property and promote health, and so on, but it is the duty of the citizen to contribute to the support of those activities which promote the general welfare in proportion as he is able. Perhaps the most satisfactory theory concerning the proper distribution of the tax burden is that taxes should be levied in the manner which will be most conducive to the general welfare.

People of wealth and large incomes often receive such large incomes, because of defects in government, as enable these taxpayers, or those from whom they inherited their wealth, to exploit their fellow citizens. It is the duty of the state to protect property, but the citizens should realize that rights of property could not exist without the services of the government, nor could their wealth be as productive without the social environment created by government. Protection of property by government is justified only because it promotes the general welfare; and such protection should not be considered the end of government activity but only a means of providing for the common benefit.

The ability theory has the wider vogue today on the grounds that our present concept of society is that each person is but a part of the whole and should contribute to the support of that whole in proportion as he has ability. Just what ability means is rather difficult to determine, but in general it seems to mean that the tax burden shall be so distributed

that the sacrifice which each taxpayer makes will be approximately equivalent. This theory implies that contribution in direct proportion to the amount of property or income is not sufficient, for the man who has a \$10,000 income per year and pays 10 per cent in taxes sacrifices less than the man who pays 10 per cent out of a \$1,000 income. It seems, therefore, that progressive taxation, or a system by which the rate of tax increases with the size of income, best fits into the concept of ability. Our attention is now turned to the question as to whether the general property tax, as it is applied today, fulfills the theory as to who should support the government and in what proportion.

Tax Incidence. The final distribution of the tax burden cannot be ascertained by comparing the taxes paid with the ability of those who actually hand over the funds to the government. In many cases these taxpayers are able to pass on the burden to others, shift the tax as it is called. But finally some persons receive the burden and cannot pass it on, and the incidence of the tax is said to be on them. The fulfillment of the ability theory calls for a tax system which distributes the burden according to ability to pay, not primarily among the original taxpayers, but among those upon whom the incidence of the taxes falls.

The most usual way of passing on taxes is through higher prices for products or services. The principles governing incidence will be discussed later in connection with farm taxation. It will suffice here to indicate that the incidence of income, poll, inheritance, and land taxes tends to be on the original taxpayer. The incidence of taxes on property improvements and on commodities tends to be on the consumers of these goods and their services.

Defects in the Principle of the General Property Tax. The general property tax is weak in both theory and administration. The theory of the general property tax is that ability is best represented by the value of the property which a person possesses and, furthermore, that all forms of property have the same ability to pay in proportion to their value. It is an ad valorem tax, or one levied according to value. In a frontier society in which all people were of approximately the same economic position, and such differences as did exist were represented by the possession of land and its improvements, this theory was fully applicable. And to the extent that certain parts of the United States are still primarily agricultural, the general property tax is still reasonably satisfactory. In the last few decades, particularly in the more highly developed states, new forms of ability have arisen which are not included under the heading of property. In 1946, about 62 per cent of national income arose from personal services and not from property. Except insofar as they are home owners and insofar as taxes are shifted to them by other taxpayers, many income receivers are escaping taxation for state and

local purposes in those states which have the general property tax as the almost exclusive source of revenue. The first defect of the general property tax is, therefore, that it does not reach all forms of ability.

Moreover, the general property tax is a proportional tax; that is, the amount which each man pays is in direct proportion to the value of his property. The general property tax does not provide for the idea of the progressive rate which the ability theory seems to require. The wealthy property owner pays property taxes in the same proportion to the value of his property as does the poorest farmer, although the sacrifice involved in the latter case is much greater. In short, the second defect of the general property tax is that it is proportional, not progressive.

All property does not have the same ability to pay taxes. It is questionable whether household goods represent the same ability as does property which is earning an income, for the taxes on the former are not earned by the property but must be paid out of revenues from other sources. Intangible property does not have so great ability to pay taxes as does tangible property, for the former, to a large extent, represents property already taxed and to tax it again at the same rate would involve double taxation. To tax a farm at its sale value and then tax the mortgage on that farm is unjustifiable, particularly when one realizes that the holder of the mortgage will pass his tax on to the farmer through charging a higher interest rate. Yet there is a general feeling among taxpayers and tax authorities that intangible property should not be entirely exempt from taxation. It cannot be taxed at a lower rate so long as state constitutions include the uniform-tax clause. The third defect of the general property tax then is that not all property has equal ability to pay.

Administrative Difficulties of the General Property Tax. Not only does the general property tax fail to fulfill the requirements of the ability theory as applied to modern society, but the administration of the tax brings about many additional injustices. The leading defects in administration surround the assessment of the property or the process of determining the value of the property for tax purposes. If assessors assess all property at a uniform percentage of its true value, it makes no difference whether that percentage be 10 per cent or 100 per cent of its true value. Obviously, the rate of taxation, or the percentage the tax is of the assessed value, must be higher where the assessment is at a small percentage of true value, but that is not unjust if all property is assessed in the same manner. Injustices arise when different assessors assess at different percentages of true value. Such a situation can easily arise among the districts covered by different assessors. If the county is the assessing unit and the assessor in County A assesses at 40 per cent

of true value and the assessor in County B at 60 per cent of true value, the burden of county taxes will not be affected, since uniform rates of assessment of true value are assumed to be applied within each of the two counties. But property owners in County B would have to pay 60/40 or $1\frac{1}{2}$ times as high state taxes in proportion to the true value of their property as residents of County A.

Attempts have been made to overcome the differences in assessed valuation in different taxing districts by the process of equalization. In the case of equalizing between counties, a state Board of Equalization holds hearings and determines whether the assessors in the various counties have assessed at different proportions of true value. If such differences are found, the Board of Equalization has authority to raise or lower the assessed values in entire counties so that the burden of state taxes will be distributed among the counties in proportion to true value.

Inequality of assessed values arises not only among tax jurisdictions but also among property owners in the same assessment district. Investigations in various states have shown that the same assessor will assess different pieces of property at widely varying percentages of true value. The net effect of all of these variations in the ratio of assessed value to true value of farms lands is astounding. The variation in the percentage which assessed value is of sale value for 2,150 pieces of farm real estate in Iowa is shown in a study by the Iowa Experiment Station and quoted by Whitney Coombs.¹ Ten per cent of the farms were assessed at from 10 per cent to 33 per cent of sales value, whereas another 10 per cent were assessed at from 64 to 100 per cent of sales value. That this situation is not limited to Iowa is shown by similar investigations in other states.

Income Taxation. A major fiscal purpose of taxing people according to their net income is to bring about a more equitable distribution of the tax burden. Incomes arising from personal services rather than from property can be taxed in this way. It permits the application of progressive rates or taking a higher percentage of the income as a tax as the income becomes larger. Thus the generally accepted concept of taxing according to ability to pay may be realized.

Another purpose of income taxation may be to bring about the redistribution of wealth and income. Heavily progressive income taxes, plus similar inheritance taxes, both prevent concentration of wealth and tend to reduce the concentration which has already taken place.

The basic Federal corporation income tax is with some exceptions 24

¹ Whitney Coombs, "Taxation of Farm Property," U. S. Department of Agriculture, *Technical Bulletin* 172, Fig. 2.

per cent on corporations having net incomes in excess of \$50,000, with lower rates on smaller net incomes. From gross receipts, taxpayers, both corporations and individuals, are allowed to deduct business costs, bad-debt losses, limited gifts to charity, and some other items to arrive at taxable income. In addition to the personal exemptions of \$600 for single persons or \$1,200 for married couples, \$600 is allowed for each dependent.

Under the Revenue Act of 1948, in the case of an unmarried person without dependents, the effective tax on the first \$2,000 of net income above exemptions was 16.1 per cent; on the next \$2,000, 19.36 per cent; and the rates then increased by irregular steps, so that, for instance, net income between \$20,000 and \$22,000 was taxed at 49.28 per cent, the income between \$50,000 and \$60,000 at 66 per cent; and all those fortunate enough to have taxable income of \$200,000 or more paid 82.1275 per cent of their income above that amount in taxes.

State income taxes differ from the Federal tax largely in that rates do not rise to such a high point. Ten per cent tax on the largest incomes is a higher rate than is usual in state laws.

The two major problems of income taxation are the difficulty of administration and the irregularity of revenue. The tax is usually administered by having the taxpayer declare his income and then having officials check the declaration as best they can. To the taxpayer the determination of income is itself a difficult task. Revenue varies with changes in business conditions as, for example, when in 1939 taxable personal income was 23 billion dollars, as compared to 99 billion in 1943.

THE BURDEN OF FARM TAXES

Taxes Paid by Farmers. In addition to the income tax, important only in recent years, farmers pay large property, automobile license, and gasoline taxes. For 1946, the estimated payments were: for general property, 525 million dollars; license, 82 millions; and gasoline, 121 millions.² Except in those states in which the property tax on automobiles is included in the license, the license is a type of burden distinct from the property tax. The proceeds of motor-vehicle licenses and of gasoline taxes, are, to an increasing extent, used to build highways. These public charges, therefore, confer a definite benefit on those contributing.

The estimate of 728 million dollars of nonincome taxes paid by farmers does not consider the possibility of the farmers' passing on part of this burden to those who use farm products. The extent to which this avenue of escape is open to farmers will be discussed below. Nor does this figure include the taxes paid by others which are passed on to

² *Agricultural Statistics*, 1946, p. 599.

farmers, particularly in the form of higher prices for the things which farmers purchase. Quantitative information on this point is not available.

Farm Taxes, Prices, and Land Values. In the period after the First World War, when the trend of farm prices was generally downward, farm property taxes stayed practically level or increased slightly. The result was that taxes became an increasingly heavy burden. This was especially the case at the beginning of the depression, when prices fell very far and taxes lagged. Unquestionably the relatively increasing tax burden was a factor contributing to low farm income in the years between 1920 and 1933. Since the early thirties, however, the trend has been reversed. While the prices have been very definitely heading upward, tax payments (excluding income tax), though greater than they were in the thirties, have not gone up at all comparably. The result has been a lightening of the tax burden.

The relationship between taxes and land values has been much the same. As land value declined in the twenties and early thirties, taxes became heavier in relation to the value of the tax base, the farmer's real property. Thus in 1913, taxes on farm real estate amounted to 55 cents per \$100 of farm value, in 1923 to \$1.01, and by 1932 had risen to \$1.54. Again, however, as land values rose, taxes did not keep pace so, by 1939, taxes were down to \$1.23 per \$100 of farm value, and in 1945 to 79 cents.

The Incidence of Farm Taxes. *Incidence* refers to the final resting place of the burden of taxes. Therefore the incidence of any tax is upon the person who cannot shift this burden to anyone else.

The shifting of a tax involves either increasing the price of the product which the taxpayer produces, or reducing the price the taxpayer pays for his cost factors and thus enabling him to shift the tax backward. *In order that a tax may be shifted either forward or backward, imposition of the tax must result either in a decrease of the supply of that which is taxed or in an increase in the demand for that which is taxed.* Shifting backward would come through a reduction in the taxpayers' demand for the raw materials, labor, and other elements of cost used in their business. However, taxes levied on one type of economic activity alone, such as agriculture, could not be shifted backward to any great extent. Most materials and other cost factors of production are used in many or all industries, so that the decreased demand for these factors by one industry suffering under heavy taxation would not materially reduce the prices of these factors. Only in cases in which the industry subjected to the increased taxation is the major user of a raw material and there is no monopoly among those supplying that material is there opportunity to shift the tax backward.

The greatest possibilities for shifting taxes generally lie in passing the burden on to consumers in the form of higher prices than would otherwise prevail. The imposition of a tax will not of itself increase the demand for the product upon which the tax is placed or which is produced by means of that which is taxed. Therefore, in the case of a quantity already on the market, sellers will have to absorb the tax if they are to sell all of the goods on hand. When we consider a longer period of time, we realize that sellers will not continue to absorb the tax if they can avoid it. In Chap. 10 it was pointed out that the price of any good under competitive conditions tends to equal, over a period of time, the cost of production to the representative producer. With this in mind, it seems logical to conclude that if a tax is levied in such a manner as to become part of the cost of production of those units of the total supply which are just on the margin of being produced or not being produced, the tax in the long run will tend to be passed on in higher prices, but the supply will be reduced. On the other hand, if the tax is levied in such a manner that the burden falls only on those producers who are obtaining a surplus above the cost of production, or the amount necessary to persuade them to remain in production, the tax cannot be passed on. The taking of part of this surplus by the government will not cause the producers to leave production and hence will not reduce the quantity on the market so that the price will be increased. With these general principles of incidence of taxation in mind, our attention will turn to the incidence of taxes on improvements and then of taxes on land.

Incidence of Taxes on Improvements. For purposes of analysis, that part of farm value which is represented by improvements must be separated from that part which is represented by natural resources. Of course, the general property tax does not select these improvements for particular taxation, but, when the general property tax is increased, the burden on improvements is increased. Suppose the burden of taxes on farm improvements, including buildings, fences, drainage systems, irrigation projects, and equipment, is increased. The first effect of this increased tax will be to take part of the farmers' net income. But those farmers who are just on the margin of staying in production or going out of production may find that the tax is the deciding factor, and they will withdraw from production. It is realized that nearly all of the improvements on land are sunk capital which prevent farmers from quickly withdrawing from production, as the increased taxation cuts into or destroys their net income. Incidence, however, should always be looked upon as a tendency over a period of time and not as a fact occurring at a particular time. If the demand for farm products is expanding, producers will seldom actually quit production, but the increased burden of taxation will discourage the improvement of new lands, since new

producers would not be able to obtain a desirable return on their investment in improvements. The expanding demand will raise the price of farm products sufficiently to allow the tax on improvements to be passed on. We may conclude that there is a tendency for that part of the general property tax which is on the improvements to be passed on. Nevertheless, the tax burden may be increased so rapidly and the adjustment in the quantity of farm products may occur so slowly that for a considerable period of time the burden of taxes on improvements will remain on the farmers.

Incidence of Tax on Land. The incidence of that part of the general property tax which is on land as separated from improvements is quite different from the final resting place of the tax on improvements. This conclusion logically follows from the principle laid down in the first of this section; namely, that a tax on a surplus above that which was necessary to persuade a producer to remain in business cannot be shifted. Land separated from improvements derives its value from the increase in the demand for its products, on the one hand, and the limited supply of good, well-situated land, on the other hand. This fact is another way of stating the effect of economic rent on land values. In Chap. 17 we saw that, if the demand for the products of land expanded and if at the same time there were no improvements in the methods of production, increased production would come only at higher costs. Those producers who were able to produce at lower costs find that, at the higher prices prevailing with increased demand, their land yields a surplus or economic rent. Since the value of the land separate from improvements is the capitalized value of this economic rent, past, present, or prospective future, the land tax is a tax on a surplus.

The levy of a tax on land does not in any way affect the demand of consumers for the products of land. At the same time, considering agricultural production as a whole, those units of production which are produced under the more expensive circumstances are produced on land which is valueless or practically so. The sale value of such land, if it has any, arises largely from the improvements. Since this land, as separated from improvements, has no value and should pay no taxes, the cost of production to those producers who are on the margin of remaining in production or going out of production is not increased. To be sure, every farm pays some taxes, but on the poorest land in cultivation this tax if properly administered is primarily on the improvements on the land. We may conclude, therefore, that since a tax on land values is not levied in such a way as to become part of the cost to those producers who are significant in price determination, the possibilities of shifting such a tax are definitely limited. This conclusion helps to explain why the burden of farm taxes is very heavy. Time is required to

shift the tax on improvements, and it is impossible to shift the tax on land.

Effects of the Property Tax on Farmers. That it is difficult to shift farm taxes need not lead to the final conclusion of an excessive burden on the farmers. To the extent that the proceeds of the tax are spent in such a manner as to lower farm producing and marketing costs or raise farm values, the farmers should feel no ill effects, unless lowered costs resulted in increased production and lowered prices. The *farm-to-market* roads have done much to facilitate the transporting of farm products to market and make the farm a more enjoyable residence. The provision of schools and libraries affects the desirability of the benefited rural areas as a residence and therefore affects land values. Experiment stations and agricultural colleges are responsible for finding out more efficient methods of production and disseminating the knowledge of how to use them. In the final analysis, however, it is impossible to measure in dollar terms the benefits derived from those services, paid for out of taxes, and weigh them against the tax burden on the farmer or anyone else. How much is education worth, how much is police protection worth, what is the ultimate economic value of even so tangible a thing as an improved strain of hybrid corn? Whether the nation's citizens are getting their money's worth out of the taxes they pay is not a question an economist can settle.

CHANGING THE SYSTEMS

Reforms in Tax Administration. The improvement of state and local taxation is a matter both of improvements in tax administration and of changes in the tax system itself. This section deals with the tax administration. The data presented earlier in this chapter concerning the variations in the ratio of assessed value to true value in the same taxing jurisdiction point out that there is ample room for improvement in the assessment of real property. The fundamental difficulty is that, whereas land values and factors affecting them are complicated, the practice has been to have property assessed by persons who are not specially skilled in the matter of determining property values. Tax experts are agreed that assessors should be called upon to show proficiency in matters of property valuation which might require that they be civil service employees. There has been little tendency for states to improve their administration by providing for assessors who are experts. This fact is explained probably by the fear on the part of the mass of people of having their property assessed by someone who may not be removed by the electors.

From time to time administrative changes have been designed to improve assessment or to remedy errors in the assessor's work. Prog-

ress in matters of assessment seems to necessitate the centralized control of assessment. The smallest assessment unit which can be effective is the county or, in some cases, the large city. The county assessor in turn should be under the control of a state commission in order to standardize assessment practices over the state. Some states have gone so far as to give the state commission the power to instigate proceedings to remove an inefficient county assessor from office. Furthermore, the state tax commission is to instruct the assessors in methods of assessment and to investigate how they conduct their work. Though boards of equalization have corrected some errors in assessment, they have fallen far short of bringing about genuine equality of assessment.

Reforms in the Tax System. In the states which are primarily agricultural, the general property tax, if properly administered, may with justice remain the source of most tax revenue, though even there it should be supplemented. But in the states in which industry and commerce have come to be of importance, the general-property-tax system must be so revised to take greater cognizance of the new forms of ability which have arisen. Even in these latter states, improvements in the administration of the property tax will be important, for that tax will remain the leading source of revenue for local purposes even after reforms in the state tax system have been made. No model system of administration, however, can do more than to improve slightly the tax situation in this latter group of states. A fundamental revision of the whole tax system is required.

A new and satisfactory revenue system must solve the following problems. First, incomes from personal services must be made to bear a fair share of the cost of government. Second, the burden on each form of property must be adjusted to its ability. The most difficult problem under this head is to devise means whereby incomes from intangibles of all kinds may be made to bear their fair share of government expenditures without, at the same time, leading to undue double taxation. Third, an element of progression should be put into the tax system as a whole, whereby those people receiving large incomes should be forced to bear a heavier share of the cost of government. These suggested lines of reform assume that the tangible-property tax should remain the backbone of the tax system. Any new taxes which are devised will be for the purpose of adjusting the burden on property. The first step in reform is the repeal of the uniform-tax clause in the state constitution wherever it exists. The legislature must be given power to tax each form of ability in a manner which its characteristics require. For forests and mines, taxes on timber cut or on ore mined may be better than a property tax. The ability represented by intangibles can be taxed most adequately by the income tax.

Recent Tendencies. Aside from attempts at improving property-tax administration and the tendency toward more state income taxes, other tendencies in state and local taxation, particularly since 1930, include the increased use of sales taxation and further experimentation with property-tax rate limits. The widespread use of sales taxes—that is, taxes on the sale of commodities and sometimes of services—represents an attempt to supplement the fast-falling revenues from other sources during the depression years. Such taxes are productive of large and certain revenues. Their administration is simple. The major objections to such taxes is that their final incidence tends to be on consumers, and, since the poorer people spend relatively more of their income for commodities, the tax places a relatively heavier burden on those of less ability to pay.

Though when originally imposed most sales taxes were intended to be only temporary, to tide state and city governments over the depression, once in force, they were kept in, though in some places, as New York City, the tax rate was lowered during the war when local governments were receiving ample revenues and had no means of expending them, chiefly because of limitations on construction activity. The general sales tax now can probably be regarded as a permanent part of the tax system and is even finding new adherents, as, for example, in Maryland, where a general sales tax was enacted in 1947.

Problems in Taxation. The main problems of tax administration are three: (1) eliminating duplication, (2) providing a truly progressive and equitable system, and (3) encouraging enterprise and investment.

1. Under this head we may note that the Federal government levies a personal income tax and so do most of the states. There are Federal taxes on gasoline, liquor, and tobacco. Many states and cities levy excise taxes on these commodities also. To eliminate this duplication, to save the taxpayer the trouble of making out two reports and dealing with two different sets of authorities, it is sometimes proposed that the states and the Federal government should divide these sources, or at least that all income taxes should be collected by the Federal government, which could then remit an appropriate share to each state.

2. The above proposal also has the advantage that it would help solve the second problem listed, that of making our tax system equitable. As it is, several states like New Jersey, Nevada, and Florida, have no state inheritance or income taxes. Inhabitants of these states, especially the few rich ones who have migrated to them for the purpose of escaping such taxes, are more lightly taxed than the majority of their compatriots.

A single Federal income tax would remove this inequity and would, through the remissions to the states, provide a direct means of redistributing income, of putting more of the burden of supporting govern-

ment services on the richer states, and of extending and intensifying such services in the poorer ones.

While the Federal income tax is very clearly progressive, the income taxes of many states, like that of Massachusetts, are proportional to income. Further, almost all property taxes, excise taxes, and sales taxes are also strictly proportional. The result is that actually they are regressive. It will be remembered that, as incomes go up, the proportion spent on articles of consumption goes down. Thus a man with an income of \$3,000 probably spends all of it, and if sales taxes of all kinds amount to 6 per cent on the average, he pays \$180, which is also 6 per cent of his income. A man with an income of \$15,000 may spend \$9,000 on consumption; his sales taxes are \$540, or 3.6 per cent of his income.

Income taxes should be adjusted to make up for the regressive character of other taxes. Some students believe that people in middle-income groups, say with incomes of about \$5,000, pay proportionately less taxes than those in the lower brackets, because of the relatively heavy incidence of sales taxes on the lower income groups.

3. Many economists believe that the current scale of income taxes in the higher brackets discourages enterprise. They point to the fact that wealthy people supply a large proportion of the funds for investment, but that if a man is already making \$100,000 a year he is not impelled to undertake a somewhat risky investment for the sake of making more, because he will pay 78 per cent of whatever more he makes in Federal income taxes (if he is single; under the 1948 tax law, if he is married he will pay only 66 per cent), whereas if he loses, his loss is complete. Thus, even if his chances of gain are a good deal better than even, there is still little incentive for him to undertake an investment.³

Another argument against very high rates in the top brackets is that savings are in large part made by those who have big incomes, and high taxes prevent the accumulation of surpluses that can be saved and invested. The answer to this may be to have a more even distribution of income and spread the surplus wider.

GOVERNMENT BORROWING

Borrowing 1930 to 1946. In the years from 1930 to 1939, the Federal government spent 60 billion dollars and took in 42 billion in taxes, the rest having been borrowed. Thus in that period about one-third of the government's expenses were covered by borrowings. Again in the defense

³ It is true that, owing to special provisions regarding income taxes on capital gains, income arising from the sale of capital assets, like stocks or bonds, or a home or farm, are in actuality quite light. An investor therefore who sells out can make a gain without being heavily taxed, but most prefer to retain ownership and draw income which, as noted, is subject to heavy taxation in the higher brackets.

and war years from 1940 through 1946, the national government spent 390 billion dollars and received about 220 billion in taxes.⁴ This time about 40 per cent of a much larger expenditure was provided by borrowing. We have mentioned one consequence of this, that the government debt rose to 269 billion dollars.

It used to be, and perhaps still is, a commonly held belief among economists and the public generally that continuous borrowing on the part of the government, leading to a continually growing debt, will have disastrous effects. It is frequently asserted that such a policy will inevitably lead to inflation, to a loss of confidence in the currency, and to national bankruptcy. Before the Second World War it was freely predicted that once the national debt reached some specified limit, say 50 or 75 billion dollars, a crash was inevitable. Yet the United States government ran into debt continuously for fifteen years, the debt is now five times 50 billion, and disaster is still around the corner.

Where, in this apparent conflict between opinion and fact, does the truth lie? It would be presumptuous of the authors of this book to assert what they are far from believing—that they know what is the truth in this controversial field—but some points which appear to them valid are:

1. Some people who should be informed, and many others who are not, draw a false analogy between a family or a business on the one hand, and a large, nearly self-contained economy like that of the United States as a whole, on the other. They know that a family or a firm that borrows money it cannot repay is in bad financial condition, and they argue that the same is true of a country. But a country whose debt is owed internally, so that to pay interest or even principal is merely to transfer money from one group in the population to another, is not in the same position as a family which owes to outsiders. Where the husband owes to the wife, in most cases, at least, the family is not considered insolvent. And, incidentally, many private firms, especially railroads, have been in debt for a hundred years and will be for a hundred more, and as long as they pay interest their credit is not questioned.

The notion that a national government must pay off its debt has little foundation in fact. The British debt has been growing for 265 years, and while England's financial position is very difficult now, that is due to many other causes rather than the steady growth of her debt. In any case, up to 1914, for the first 220 years of the growth of her debt, England was the leading commercial country in the world and the pound was in effect the standard international currency. That England was considered solvent for so long a time in the face of her steadily increas-

⁴ From *Supplement to Survey of Current Business*, July, 1947, Tables 8 and 9.

ing debt would seem to prove that it is not necessary for a country to pay off its debt for its credit to be good, as long again as it can make the requisite interest payments.

2. This brings us to our second point: that a debt on which interest can be paid is one that is tolerable. As long as the taxes required for the payment of interest do not bear too heavily on those groups of the population that pay the interest (through taxes) rather than on those who receive it, the debt can be borne. This means that no absolute limit can be set on a government debt. As long as interest rates are comparatively low, as they were in 1948, so that on the average the government paid about 2 per cent, making its total annual interest payment only about 5 billion dollars, and as long as the interest payment is small in relation to the national income, the absolute size of the debt is of little consequence. There is no predetermined level at which the debt becomes burdensome; it depends on the interest rate, the size of the national income, and which groups in the community bear the burden of payments and which are the recipients.

3. It is often forgotten that the influence of government borrowing is different at different stages in the business cycle. At those times when there is much unemployment of men and resources, as during the thirties, government expenditures in excess of receipts does not lead to disruptive inflation, but rather tends to increase employment and production and thereby real income. At times when we have full employment, excessive expenditures by the government would vastly increase inflationary pressure, and any increase in national income would be in dollar, not real terms. What may be therefore the most advisable policy in a depression may be wholly inadvisable in a boom.

4. This brings us to our concluding point, that there can be no absolute judgment about the moral or economic wisdom of a government's debt policy. There are circumstances when borrowing is justified, others when it is not.

There are some,⁵ in fact, who believe that a government can afford to enlarge its debt continuously because by so doing it can increase the national income by more than the increase in interest payments, so that the interest burden becomes progressively lighter. This is not the position taken by the authors. They do believe, however, that government borrowing is as legitimate an instrument of fiscal policy as taxation, and it should be resorted to when circumstances dictate. They also believe that the history of the last decades has demonstrated that it is sounder, from both the humanitarian and the purely fiscal points of

⁵ See articles by Evsey Domar in *American Economic Review*, December, 1944, and March, 1947.

view, for a nation to go into debt than to tolerate the misery and waste of mass unemployment.

Questions and Problems

1. Why have public expenditures tended to increase in the last three decades? Relate your reasons to the types of expenditures which have increased most rapidly.
2. Why do not public expenditures vary during periods of depression and of prosperity in accordance with the national income?
3. How large a part of government expenditure is due to wars?
4. What are the main features of the tax system of your state?
5. Upon whom is the incidence of a tax on farm lands? Explain. Who ordinarily bears the burden of a tax on the sale of commodities (sales tax)?
6. Does the general property tax distribute the burden of state and local taxation among the taxpayers in accordance with their ability to pay? Discuss with particular reference to your state.
7. Suggest how your state tax system might be revised in order to reduce the tax burden on farmers.
8. Describe the process of assessing and of equalizing the assessed values of property. Why are different pieces of property so frequently valued at different percentages of true value?
9. How large a debt can a nation bear?

Suggested Readings

1. H. L. Lutz, *Public Finance* (1947), is one of the standard textbooks on the subject of this chapter.
2. H. M. Groves, *Financing Government* (1939), is a general textbook in public finance.
3. *Agricultural Finance Review*, published each November by the U.S. Department of Agriculture, contains articles on current developments in farm taxation as well as on credit and insurance.
4. H. M. Groves, *Viewpoints on Public Finance* (1947), contains a wide selection of readings.
5. Seymour E. Harris, *The National Debt and the New Economics* (1947), is a discussion of debt policy in the light of the "new economics."

CHAPTER 22

TRANSPORTATION AND OTHER PUBLIC-UTILITY PROBLEMS

In the study of economics with applications to agriculture, special attention to the agencies which supply transportation is justified for a number of reasons. Among these are the following: (1) Cheap and efficient transportation is necessary in order that the gains possible from specialization and division of labor may be realized. (2) The railway-transportation industry furnishes an outstanding example of an important industry which for many years has been so highly monopolistic, and at the same time has been so essential to the public welfare, that it has come to be closely regulated by public authority, even though privately owned and operated. In other words, it is to a high degree socially controlled and illustrates principles applicable to social control. It illustrates a private business of the kind said to be *affected with a public interest*. (3) Railway transportation also excellently illustrates the peculiar features of businesses which have large fixed costs in relation to their variable costs and which supply a number of services with joint costs. (4) Water transportation under certain conditions is exceedingly economical and highly important, and under other conditions it has been much recommended, often without adequate justification. (5) Highway transportation is important both because of its costs and the problems of its maintenance and because of competition between highway and railway transportation.

In this chapter various features of the economics of the transportation industry will receive special consideration. Particular attention will be given to railway, water, and highway transportation. Other forms of transportation and other public-utility services will be considered briefly and incidentally.

The nature of a public utility has already been explained in Chap. 11. In brief, it is a business which tends to be a natural monopoly and which supplies a service so highly essential to the general welfare that an unreasonable hardship is inflicted unless all applicants are served at reasonable rates and without discrimination. This causes it to be affected with a public interest. The government may compel those who enter such a business to observe the following obligations: (1) It must serve all applying for the service for the performance of which it exists. In other words, it may not select its customers, as may those operating other

businesses—for example, grocery stores, which are not public utilities. (2) It must render service for reasonable rates, which may be fixed by public authority. The public also may prescribe the kind of service which must be rendered. (3) It must render like service to different customers for the same rates without discrimination. (4) It must keep its accounts in a manner prescribed by the regulating body and must submit to sundry other regulations. (5) In many cases those wishing to enter such a business must secure a certificate of public convenience and necessity before being permitted to do so. It is customary to speak of any business to which these obligations legally apply as affected with a public interest.¹ And the Supreme Court of the United States has held that whether or not a particular business is affected with a public interest is a question of fact which the court may decide. Several times the U.S. Supreme Court has held as invalid attempts of state legislatures to regulate certain businesses as though they were affected with a public interest, on the ground that these businesses were not in fact of such a nature. For example, Oklahoma had undertaken to control the business of manufacturing and selling ice and had required that a certificate of public convenience and necessity must be obtained by anyone before he might engage in that business. The court declared this legislation invalid and in so doing said:

It is a business as essentially private as the business of the grocer, the dairyman, the butcher, the baker or the tailor. . . . And this court has definitely said that the production and sale of food or clothing cannot be subjected to legislative regulation on the basis of a public use.²

In contrast to the ruling in the above cases, in March, 1934, the U.S. Supreme Court rendered a decision by which it has apparently greatly broadened, if not reversed, its former interpretation of a business affected with a public interest. In 1933 the state of New York passed legislation by which it established a Milk Control Board and granted that board the power to fix maximum and minimum wholesale and retail prices to be charged for milk handled within the state. That the state had the authority to do this was affirmed by the Supreme Court.³ Though the court pointed out a number of features of the milk business which caused it to be to a greater extent affected with a public interest than most businesses, its decision does contain the following broad and significant statement: "The phrase 'affected with a public interest' can, in the nature of things, mean no more than that an industry, for adequate reason, is sub-

¹ The first pronouncement of these principles by the Supreme Court of the United States was in the famous case of *Munn v. Illinois*, 94 U.S. 113 (1877).

² *New State Ice Co. v. Liebmann*, 285 U.S. 262 (1932).

³ *Nebbia v. People of the State of New York*, *Supreme Court Reporter*, Mar. 15, 1934, p. 506.

ject to control for the public good." If the precedent set in this case is followed hereafter, the concept of business affected with a public interest will be much broader in the future than it has been in the past. Some careful students of the law are of the opinion that the Supreme Court has opened the way for declaring that practically any business may be affected with a public interest.

The right of the public to regulate railroads and other public utilities has long been accepted without question. Though railroads are in fact public utilities, they alone are so important that usually they are considered in a class by themselves, and it is customary to speak of railroads and public utilities, applying the latter designation only to utilities other than railroads.

MAGNITUDE OF TRANSPORTATION AND OTHER PUBLIC-UTILITY INDUSTRIES

Capital Investment in Transportation. At the end of 1946, the investment in railroads was put at 27.3 billion dollars, and after depreciation the roads were valued at 21.5 billions. The investment in telephone plant was 6.7 billions. It is not necessary to add to these figures the several billions invested in pipe lines, telegraph systems, and other means of transportation and communication to realize how important an outlet for investment these industries are. Though highway transportation is only to a limited degree a public utility, it is to a large extent supplied at public expense and deserves consideration, which is most conveniently given to it as a part of the transportation problem.

In 1946 about 2 billion dollars was spent on highways. In some years before the war, however, when materials were freely available, as much as 3 per cent of the total national income was spent in road construction and maintenance. In 1946 there were 34 million cars and trucks registered, which if worth an average of \$750 per vehicle, not extravagant at the time, represented a total value of 25.5 billion dollars.

The list of facilities devoted to transportation is not complete till the factories and mines supplying equipment and fuel, garages and filling stations supplying services, and similar agencies are included. It has been estimated that 15 to 20 per cent of the national wealth is directly invested in transportation facilities.

Employment in Transportation. On the basis of the number of persons employed, the specialized transportation industry is not quite so impressive as on the basis of capital devoted to its use. Nevertheless, it is highly important. The railroads employed nearly 3 per cent of all persons engaged in production in 1946, and transportation facilities in general, including railways, bus lines, trolley lines, airlines, and services allied to transportation, employed about 5.7 per cent.

Other Public Utilities. Of public-utility industries furnishing services other than transportation, the most important is that of supplying electric light and power, and this has made stupendous growth during recent years. Privately owned electric generating and distributing plants represented in 1922 a value of 4.2 billion dollars, in 1932 of about 12 billions, and in 1946 15.8 billions. Income from supplying gas or electric light and power to the public amounted to about 2.5 billion dollars.

Public Utilities and National Income. Of the total national income of 178.2 billion dollars in 1946, 14.7 billions or a little more than 8 per cent was derived from transportation, communication, and public utilities. Of this 14.7 billions, railroads contributed 5.6, highway passenger and freight transportation 2.3, telephone and telegraph 2 billions, and public utilities, as we have seen, 2.5 billions.

RAILWAY TRANSPORTATION

The Right to Regulate and the Interstate Commerce Act. Though the doctrine that a business affected with a public interest is subject to public regulation is an old principle of English common law, no serious attempt was made to apply it to American railroads until about 1870. At that time there were passed a number of state regulatory acts in such Middle Western states as Illinois, Wisconsin, and Iowa. These were followed by the Federal Interstate Commerce Act (1887), by which regulation of railroad rates affecting interstate commerce was vested in an Interstate Commerce Commission established by the act. The original Interstate Commerce Act was largely evaded, and to accomplish the purpose for which it was enacted it has been frequently amended. Most notable of these amendments were the Hepburn Act of 1906 and the Esch-Cummins Act of 1920.

The Hepburn Act is said for the first time really to have "put teeth into" the Interstate Commerce Act. It for the first time actually gave the Interstate Commerce Commission the power to prescribe maximum rates rather than merely to rule that existing rates were unfair. In addition, it for the first time gave the commission the power to prescribe the accounting methods of the railroads and to supervise their accounts, and it greatly simplified enforcement procedure and eliminated rebates to favored shippers, by means of which the act previously had been largely evaded. The Hepburn Act for the first time made the regulation of railroad rates genuinely effective.

The Transportation Act of 1920, also known as the Esch-Cummins Act, provided for the return of the railroads to their private owners, after they had been for three years operated by the government as a war measure. Other important provisions were: (1) A rule of rate making

was established which provided that the commission should designate a fair rate of return and fix rates so as to yield as nearly as possible this return.⁴ It should be noted that this was not a guarantee but a rule to guide the commission. In no year since this act was enacted have the railways in the aggregate earned as much as 5½ per cent on their property investment, though in 1943 they made 5.24 per cent. In 1932 the rate of earning was only 1.25 per cent. It should be noted that this earning was not on stock but on actual property value, whether represented by stock or by debts. On property value represented by stock, the railroads in the aggregate failed to earn any return in 1932 and in some other years. During the Second World War and thereafter results were much more satisfactory. (2) The Act of 1920 strengthened the "long- and short-haul clause," or fourth section of the act. By that section the railroads are forbidden to charge more for a shorter than for a longer haul over the same line in the same direction, the shorter being included in the longer, unless they are given specific permission to do so by the commission. Such permission is called "fourth section relief." The Act of 1920 limited the conditions under which fourth-section relief might be granted. (3) The Act of 1920 provided that regulation by the Interstate Commerce Commission might be extended to include intrastate rates when necessary to remove an unreasonable discrimination against interstate or foreign commerce. (4) The commission was given authority to regulate the issuance of securities by the railroads and increased authority over service.

The act also contained provisions for settling disputes between the roads and their employees, which were largely superseded by the Railway Labor Act of 1926. Under the terms of this legislation elaborate machinery is provided for mediating wage and other employer-employee differences. This includes: (1) provision for conferences between the union and the railway management; (2) the establishment of adjustment boards to handle questions not settled by 1; (3) the formation of a National Mediation Board, a Federal agency, as the next step in the chain of adjustment agencies. If the National Mediation Board cannot bring the parties together, a special arbitration board is appointed; and (4) if the special board's report is not accepted by either party and a stoppage of railroad operation is threatened, the President appoints an emergency board, which must report within thirty days after appointment.

These provisions have been on the whole successful in preventing

⁴ This part of the act incorporated into statute law certain rules enunciated by the Supreme Court of the United States in *Smyth v. Ames*, 169 U.S. 466 (1898), and in addition attempted to make more definite what constitutes a fair rate of return on capital invested in railway transportation.

strikes on the railroads, though some of the unions have felt that because of this system, which makes striking nearly impossible in practice, their wages have not increased comparably with those in other industries. This feeling came to a head in 1946, when only threat of emergency action on the part of the President prevented a strike by the Brotherhood of Trainmen and Engineers.

Act of 1940. The Transportation Act of 1920 was amended by the Transportation Act of 1940, but this last act was chiefly important for putting water carriers under the authority of the ICC on the same general terms as railroads and motor carriers.

A Fair Return on a Fair Value. The Supreme Court of the United States frequently has ruled that the right to regulate does not include the right to destroy. It also has ruled that to reduce rates for a public utility to an unduly low level amounts to the destruction of the property invested in that utility. The Constitution of the United States provides that no person shall be deprived of life, liberty, or property by any state or the United States without due process of law. The Supreme Court has ruled that to deprive the owner of an opportunity to receive an income or benefit from his property is in fact to deprive him of his property. Following the above legal principles, the courts have frequently declared invalid extremely low rates for public-utility services established by public authority, holding that such rates in fact deprived the owners of their property, without due process of law. In addition to this legal basis, there are economic reasons why rates should not be unduly low. In a country in which the services under consideration are supplied by privately owned capital, the result of unduly low rates will be to keep capital from being invested in that industry. Privately owned capital will not assume the risk of loss from investment unless it is permitted an opportunity or probability of earning some degree of business profit, which, as distinguished from pure profit, is largely interest, as explained in Chap. 16. The long-run economic welfare necessitates that, under private ownership, rates must be sufficiently high to attract and maintain capital in the industry. In some cases the courts have held that public-utility rates yielding at the time 8 per cent on the assumed fair value of that property were not unduly high, considering the risk involved. In other cases they have sustained reductions and refused to allow increases when the net return on the investment was not one-third as great.

According to the courts, and students of economics as well, the rates established by public authority must be sufficiently high to yield a "fair return on the fair value of the property" devoted to supplying the service. This dictum leaves unsettled two important questions: (1) What is a fair rate of return? (2) How is a fair value of the property to be ascer-

tained? On neither of these questions have the courts followed any hard and fast rule. In general, a fair return is a rate of interest which is not unduly low in comparison with what may be received by investing capital in other ways. It should be sufficient to attract into the industry the capital which, in the interest of the social welfare, ought to be invested in it.

In ascertaining the fair value of the property devoted to the industry, three general bases have received most attention. These are: (1) the market value of the property; (2) the original cost of the property; (3) the cost of reproduction of the property. The first is obviously unsatisfactory. The purpose of ascertaining a fair value is to establish fair rates or charges for services. But the market value of the property results largely from capitalizing net return based on the rates expected to prevail in the future. If expected rates are high, the market value will be high and, by the use of market value as the basis of the rate, any rate may be justified, no matter how high. On the other hand, if existing and expected rates are unduly low, the market value of the property will be low and unduly low rates may be justified. Basing rates on market value is reasoning in a circle. The real controversy as to what constitutes *fair value* for rate-making purposes is between basis 2, original cost less depreciation, and basis 3, cost of reproduction. Each of these has advantages and disadvantages. The last named tends to be the basis of value in the long run for goods produced under competitive conditions. Its greatest disadvantage as a rate base is that it is constantly changing. This makes it exceedingly difficult to apply in practice. Rates cannot be adjusted so frequently as changes occur in value based on the cost of reproduction, and such a value cannot be constantly reascertained. Original cost, when made the basis of fair value, is usually limited to original cost of *prudent investment* less depreciation. When once ascertained, such value does not change except as adjusted for depreciation and additions and betterments. Basing fair value on original cost simplifies in some ways the question of a proper rate base. However, it also gives rise to difficulties. Often it is impossible to ascertain either the actual original cost or the original prudent investment. Furthermore, rates based on original cost are often more rigid than the social welfare permits in case great changes occur in the general price level. Though the courts agree that rates must be based on a fair value, they are far from agreeing how that fair value should be ascertained.

Because of the difficulty of determining fair value, it is perhaps correct to say that the efforts of the ICC in fixing rates are directed to finding a level that will keep the railroads in operation, that is, high enough to cover their expenses.

Fixed, Variable and Joint Costs. Rates which yield a fair return

on the value of the property are in fact rates based on costs, including, as one of the costs, interest on the property used in the business. In basing rates on the costs of supplying the service, difficulties are encountered because of the large extent to which such costs are either fixed costs or joint costs. Fixed costs vary not at all or but slightly with the amount of service rendered. Joint costs are incurred in performing a variety of services and cannot be satisfactorily allocated to particular services. How much does it cost to carry a single passenger on a train for 500 miles? Under ordinary conditions it costs nothing, in the sense that there are no additional costs because of the presence of an additional passenger. How much does it cost to run an extra train? In this case there are some extra costs. But the extra, or out-of-pocket, or variable, costs are much less than would be the total costs of running the train if it were charged with its proportional part of interest on the investment in roadway and equipment, costs of maintaining the way and equipment, pay to station agents and telegraphers, taxes, and other costs which are not increased because a single extra train is run.

In fact, it has been estimated that only 32 per cent of a railroad's expenses vary according to the amount of traffic moved; that 68 per cent are constant, irrespective of traffic movement. This assumes, of course, that the equipment to move such traffic already exists. It follows that many railroad expenses are joint costs, which cannot be definitely allocated to any part of the service but are a part of performing all services.

Some Rate-making Principles. From the conditions mentioned are derived the following rules in making railroad rates: (1) The whole level of rates should be sufficiently high to allow a fair return on a fair value of the total property prudently devoted to the service. (2) All traffic should pay at least the out-of-pocket, or extra, costs of moving it and contribute something to the fixed or constant costs. (3) The amount which any given kind of traffic should contribute to the constant costs should be governed by the ability of that traffic to pay. Silk should pay more per ton than coal; copper should pay more than iron; traffic should be accepted at low rates if those rates will make any contribution whatever to the constant costs or overhead, and if the traffic will not otherwise move. Traffic which can bear high rates should pay enough that constant, as well as variable, costs will be covered, and in such constant costs should be included a fair return on all property, including a return to stockholders on the fair value of the property not represented by debt.

From the above it should be clear that the rate for any particular commodity is properly governed in part by the ability of that commodity to bear the rate. Shippers and producers of different commodities are constantly appealing to the regulatory bodies, especially the Interstate Commerce Commission, for lower rates. Railroads from time to time

ask for higher rates. The most frequently advanced plea of those asking for lower rates is that the commodity is unable to bear the present rates. This plea is most often presented, because if successfully maintained, it is most likely to secure a reduced rate. The most universal plea of the carriers is that rates are not high enough to yield a fair return on the property devoted to the service.

In fixing rates for particular commodities, consideration must of course be given to actual out-of-pocket costs. All freight rates must be published in the schedules of rates, documents known as *tariffs*, and are quoted per 100 pounds. It costs more per 100 pounds to transport live-stock a given distance than to transport wheat or coal, though how much more can be determined only approximately. Some twenty factors are frequently listed to which consideration is given in fixing rates for particular commodities. Of no small importance among these factors is the degree of care required to avoid damage for which the railroad is responsible.

There are, of course, other principles to be observed in rate making. Not only should no commodity or class of commodities pay an unduly high rate, but there should be no regional or place discrimination. The producers of a particular commodity are injured if rates on that commodity are unduly high. But they are injured to a greater extent if the rates from other regions on the same or competing commodities are relatively low than if such rates also are high. Allegations of regional discrimination accordingly are among the various pleas presented to regulatory bodies by shippers and producers asking for lower rates. The Interstate Commerce Commission has greatly reduced the amount of regional discrimination which in times past has existed. The "long-and short-haul clause" is one provision of law designed to minimize regional discrimination.

Railroad Revenues and Particular Expenses. In common with those of most other businesses, railroad operating revenues were at their depression low in 1932, when they amounted to 3.1 billion dollars, whence they rose to 4 billions in 1939 and 9.5 billions in 1944. With the coming of peace they fell somewhat, to 7.7 billions in 1946. It will be of interest to examine Table 48, which shows the disposition of railway revenue.

While 52.1 per cent of revenue went for direct labor payments, it should be clear that a large part of the income paid for fuel, materials and supplies, depreciation, taxes, and equipment and facility rentals also is ultimately paid for wages and salaries.

It is frequently asserted that an important cause of unduly high freight rates is "watered stock" of railroads. By this is meant that stocks or bonds have been issued without an equivalent value in property having been received. Therefore, it is asserted, a fair value for the

TABLE 48. DISTRIBUTION OF RAILWAY OPERATING REVENUES, 1946
Railways of Class I*

Item	
1	Total operating revenues..... \$7,627,650,517
2	Labor (salaries and wages)..... 3,975,752,242
3	Fuel (steam locomotives)..... 518,474,535
4	Other materials and supplies and miscellaneous..... 1,305,993,923
5	Loss and damage, injuries to persons, insurance, and pensions... 191,292,464
6	Depreciation..... 365,902,011
7	Taxes..... 498,144,025
8	Hire of equipment and joint facility net rentals..... 151,971,248
9	Total expenses and taxes..... 7,007,530,448
10	Net railway operating income..... 620,120,069
Distribution expressed in cents per dollar of gross revenue	
11	Total operating revenues..... 100.0
12	Labor (salaries and wages)..... 52.1
13	Fuel (steam locomotive)..... 6.8
14	Other materials and supplies and miscellaneous..... 17.1
15	Loss and damage, injuries to persons, insurance, and pensions... 2.5
16	Depreciation..... 4.8
17	Taxes..... 6.6
18	Hire of equipment and joint facility net rentals..... 2.0
19	Total expenses and taxes..... 91.9
20	Net railway operating income..... 8.1

SOURCE: *Statistics of Railways of Class I*, Association of American Railroads, Washington, D.C., October, 1947, Sheet 10.

* Class I railways include all railways having operating revenues of 1 million dollars or more per year.

properties is much less than that reported by the carriers. Such assertions in regard to watered stock are true to the extent that, in the heyday of railroad building, many companies gave away stock with the bonds they sold as they were being built, and that some companies, especially during the decades immediately following the Civil War, inflated their capitalizations by a variety of fraudulent and questionable methods. Some companies are still overcapitalized, and their debts and net worth as shown on their balance sheets overstate their true investment. Other companies, however, have withheld even small earnings from stockholders and reinvested them in additions and betterments and charged such improvements to expenses to such a degree that they are in fact undercapitalized. But it should be reemphasized here that neither over- nor undercapitalization should affect rates, for rates are assumed to be based not on capitalization but on actual original or reproduction costs of the physical plant of the railroads.

The ICC for twenty-five years has been engaged in making a valuation of the railroads, taking into account both prudent investment less de-

preciation and the cost of reproduction. In general the commission has found that, despite individual exceptions, the correct fair value in the aggregate corresponded closely to the sum of the book values.

In any case, so much "water" was "squeezed" out of railroad-capital setups by the numerous reorganizations which followed upon the financial difficulties experienced by the roads during the depression, that it is doubtful that much of that legacy of the post-Civil War days is left.

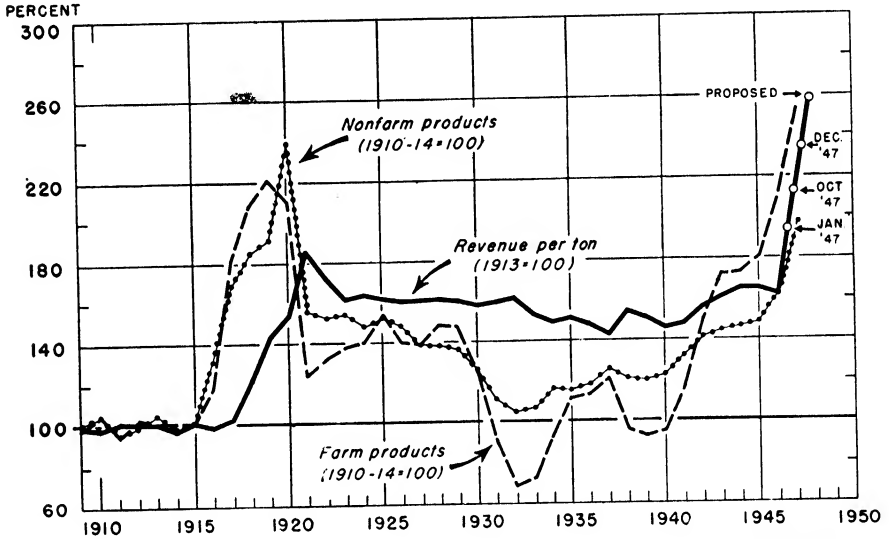


Fig. 36. Freight rates and wholesale prices of farm and nonfarm products (1909-1947).
Source: *Neg. B-46589, USDA.*

Freight Rates and Other Prices. As Fig. 36 shows, railroad rates are rigid in comparison with commodity prices in general as represented by the wholesale-price index, and particularly in comparison with farm prices. Thus through the depression they did not fall so low as other prices and in the postwar price rise lagged behind the others.

In fact, freight rates fell gently but almost continuously, with only minor interruptions from 1921 to 1937, regardless of the large and violent fluctuations in other prices that took place in other prices and wages in that twenty-year period. Then freight rates finally began to go up, but hardly perceptibly. It was not till 1947 that freight rates began to move up at all significantly, seven years after other prices had begun to turn up under the pressure of defense expenditures.

Prices fixed by public authority tend to be rigid, whether such prices be freight rates or the salaries and wages of employees. Railways were able to meet their payrolls in 1932 and 1938 by employing about one-

third fewer persons than were employed in 1929. Railway employees with jobs in 1938 were able to secure hourly wages amounting to 279 per cent of 1913 wages. They were fortunate. But former railway workers without jobs were not, and, even among those employed, engineers were reduced to firemen, and so on. Farmers receiving for their products only 95 per cent as much as in 1913 were unable to buy other goods, which had declined but little in price. This reduced the amount of railway traffic. An important factor in the unfavorable ratio between prices received by farmers and prices paid by farmers were freight rates. Most important among the causes of high freight rates were rigidity in salaries and wages of railway employees. Additional causes of high freight rates were high railway taxes and high prices for materials and supplies which railways were required to buy. Interest on the funded debt of the railways also tends to maintain rigidity of freight rates, and it would be of advantage if this could be made less rigid. But the data given should be sufficient to show that the other factors named were of greater importance in explaining the failure of freight rates to decline from previous levels to the same extent as agricultural and other wholesale commodity prices in 1932 and 1938. Insofar as railway ownership was represented by stock, such owners in 1932 and 1938 practically ceased to secure any return.

With the war there was such an enormous expansion of traffic that overhead costs per unit of freight carried was enormously reduced. At the same time the roads reduced direct costs by not providing service of the same quality as before. The result was that railroads became enormously prosperous. The rigidity of their rates caught up with them after the end of wage and price control in 1946, for their costs went up very rapidly while receipts did not. As a result, 1947 was a very bad year for the roads. Even so consistent a profit maker as the Pennsylvania Railroad lost money. The railroads made repeated appeals for higher rates to the ICC, which responded sufficiently so that prospects for 1948 appeared much brighter.

Railway Tonnage and Revenue from Agricultural Traffic. How important is the traffic in agricultural products to the railways? The answer of course is different for different railroads. For the nation as a whole, the tonnage of agricultural products and other freight handled and the revenues received from each class, are shown in Table 49. In 1945, 12.9 per cent of the total weight carried consisted of crops or animals and their products, but these commodities paid 18.2 per cent of the total freight revenue.

The fact that agricultural products furnish a larger percentage of the total railway freight revenue than the percentage they constitute of the total tonnage does not of necessity show that rates on agricultural

TABLE 49. REVENUE FREIGHT CARRIED AND REVENUE, CLASS I RAILWAYS, UNITED STATES, 1945

Commodity group	Tonnage		Revenue	
	Million tons	Per cent	Million dollars	Per cent
Products of agriculture.....	314.3	11.1	985.1	14.2
Animals and products.....	50.6	1.8	279.4	4.0
Products of mines.....	1,316.7	46.6	1,486.7	21.4
Products of forests.....	153.8	5.5	316.2	4.5
Manufactures and miscellaneous..	947.3	33.5	3,495.9	50.3
Grand total, carload freight.....	2,782.8	98.5	6,563.3	94.4
Less-than-carload freight.....	41.2	1.5	386.0	5.6
Grand total.....	2,824.0	100.0	6,949.3	100.0

SOURCE: *Statistics of Railways in the United States, 1945*, published by The Interstate Commerce Commission, Washington, D.C.

products are relatively too high. Among other factors, length of haul and cost of the service must be considered.

The difference in the percentage of tonnage contributed by manufactures and the percentage of revenue paid on them is also to be noted. Manufactures can bear a higher rate than raw materials. This is particularly true of coal, which in 1945 constituted about 30 per cent of all freight and contributed only 14 per cent of the revenue. The freight rate on coal is low both because the commodity is unable to bear a high rate and because the cost per ton of moving coal in large quantities is low.

WATER TRANSPORTATION

Transportation over Large Bodies of Water. Transportation for extended distances over large bodies of water is per ton-mile by far the cheapest transportation available. This includes transportation over the ocean and such waters as the Great Lakes. To ship wheat by ocean for 8,000 miles costs no more than to ship it by rail for 400 miles.

Rates on the ocean and other large bodies of water like the Great Lakes are low because costs of transportation on such waters are low, largely for the following reasons: (1) There is no investment in a roadway and no cost to the carrier for its maintenance. (2) Terminals for ocean transportation are provided partly at public expense and render less service to the customer than do railroad terminals. (3) The cost of supplying and operating large ships is less per ton-mile than is the cost of the vehicle and its operation in land transportation.

Ocean rates are the result of extremely active competition for traffic

and are practically unregulated by public authority. Ocean vessels are of two general kinds, *liners* and "*tramps*." The former run on regular schedules and carry passengers and also most of the package freight of high value. The latter do not have regular routes and go wherever traffic may be received. During the war liner service was completely disrupted and even by 1948 was not yet restored to normal.

Transportation over Inland Waterways. Transportation over small inland waters, such as rivers and canals, presents an entirely different picture from transportation over large bodies of water. In amount such movement is insignificant in comparison with transportation by railroads. In 1945, the total tonnage of freight shipped over inland waterways was only 53 million tons compared to 2.8 billions by the railroads. This water-borne tonnage was equivalent to only 2 per cent of the railroad tonnage. In contrast with ocean and lake transportation, carriage over inland waterways is unimportant, largely because they are inconvenient (a railway siding or road can be built to every factory, but canals or rivers are relatively inaccessible) and because they are unusable in winter.

There is a place, however, for a certain amount of transportation over inland waters, especially for bulky low-grade commodities.

HIGHWAY TRANSPORTATION

Development of Highway Transportation. Highway transportation in the United States has been revolutionized during the last forty years. In 1908 there were less than 200,000 automobiles and trucks registered in the nation. In 1941 there were over 34.8 millions, in 1946, 34 million. With the coming of the automobile, road building has been revolutionized. For 1904, total expenditures on rural roads are estimated at 79 million dollars. In 1924 expenditures for state highways and county and local roads for the first time exceeded 1 billion dollars, and for 1946 they amounted to 2 billions. In 1904, rural roads "surfaced with bituminous macadam for penetration, or higher types" amounted to less than 150 miles. In 1944, there were about 1,430,000 miles surfaced. Before the First World War rural-road construction and maintenance were largely neighborhood affairs. By 1930 state highway expenditure amounted to 59 per cent of all rural-road expenditures, local and county expenditures being only 41 per cent of the total, and the tendency to change to state maintenance has continued.

The automobile, truck, and hard-surfaced roads have caused a large shifting of traffic from the railways to the highways. Railroad passenger travel declined steadily from 1920 to 1940. It picked up temporarily during the war because of the restriction on gasoline use and the generally great amount of traveling done.

The year 1916 is the first for which there are comprehensive records showing the arrivals of livestock in important markets by truck. For that year, in 16 leading markets, 1.6 per cent of all arrivals were by truck; in 1937 more than one-half arrived by truck. Table 50 shows

TABLE 50. APPROXIMATE PERCENTAGE OF ALL LIVESTOCK COMBINED, ON BASIS OF CARLOT EQUIVALENTS, TRANSPORTED TO AND FROM MARKETS OF VARIOUS TYPES IN THE CORN BELT REGION, 1940

Types of markets	Transported to assembly points or markets, per cent		Transported from assembly points or markets, per cent	
	Truck	Rail	Truck	Rail
Local cooperative associations	100	0	48	52
Dealers	95	5	75	25
Concentration yards or local markets	92	8	26	74
Auctions	92	8	87	13
Packing plants, direct	87	13		
Terminal public markets	72	28	31	69

SOURCE: K. Bjorka, *Marketing Margins and Costs for Livestock and Meat*, U.S. Department of Agriculture, Technical Bulletin No. 932, 1947, p. 29.

the continuing increase in the proportion of livestock transported by truck from and to assembly points and markets.

Now almost all fluid milk moves by truck, whether directly from farms to city processing plants or from farms to country assembly plants for later shipment to the consuming centers. A large proportion of other farm commodities, including cotton, moves to assembly centers and farther by truck. This shifting of traffic from the railroads to the highways raises the question of the extent to which truck highway transportation will replace rail transportation.

In this connection it is worthy of note that for 1945 the average railway revenue per ton-mile was 0.982 cents. This is at the rate of \$0.982 per ton per 100 miles, or \$4.90 for 5 tons for 100 miles. Low-grade heavy freight, of course, paid much lower rates. It is obviously impossible to depend on trucks for much long-distance transportation of heavy and low-grade freight because the costs would be much higher than for the railroad.

Nevertheless, outside of this particular kind of freight, trucks keep cutting the rails' freight business. Thus the Department of Commerce in September, 1948, reported that "the truck . . . has now virtually replaced all other means of transportation for local short-haul commodity movements. Likewise, the truck has acquired and is acquiring

an increasing proportion of the longer-haul traffic which moves between cities."

Who Pays for the Highways and Railroads? This was for a long time and still remains a very vexing question. In the years before the Second World War, despite the increasing imposition of gasoline taxes and license fees, the total revenue paid by highway users did not cover the cost of constructing and maintaining highways, rural roads, and city streets. Thus in 1940 the expenditures for these purposes came to 2.34 billion dollars, while taxes and fees on motor vehicles and fuel amounted only to 1.85 billions. The difference was paid out from other taxes, including the general property tax, to which railroads contribute heavily. It seemed unfair to make the railroads pay part of the cost of providing roads for their competitors, the motor trucks. On the other hand, it could well be argued that the roads are for the general convenience of the public and therefore everyone should pay something toward their construction and maintenance. It is very difficult to separate that part of highway cost due to commercial use from that due to general public use. In any case, the question has apparently become moot, for in the postwar years, owing to the decline in highway construction on account of the unavailability of materials and labor on the one hand, and increasing use of gasoline on the other, total taxes and fees paid by highway users have exceeded costs. In 1946 the taxes and fees came to 2.5 billion dollars,⁵ the costs to less than 2 billions. If the country should embark, however, on a very extensive program of road construction to make up for what was not done during the war and postwar years, costs may again exceed automobile and gasoline taxes and thus the controversy will again come to life.

It may be noted incidentally that the gasoline tax is not a tax at all, according to the usual meaning of that term. It is a fee to repay part of the cost of a special service furnished to those who use the roads.

It may also be of interest to note that the motorist does not pay the entire gasoline tax. If all gasoline taxes were removed, gasoline would not be cheaper by the full amount of the taxes removed. Part of the gain at least would go in larger returns to oil companies and lucky individuals who were fortunate enough to "strike oil." Unless the production of gasoline were increased, prices paid by consumers for gasoline would be very nearly the same as at present. With a given amount of oil or gasoline to be moved into consumption, the price to the consumer is all that can be secured without decreasing the amount consumed. The removal of the tax would not lower prices to consumers unless it resulted in increased production. It would increase the net profits of the oil com-

⁵ *Automobile Facts and Figures*, 27th Edition, Automobile Manufacturers' Association, Detroit, 1947, pp. 46 and 59.

panies or those to whom they make payments. If this resulted in increased production of gasoline, as it probably would, at least to some extent, the price to some extent would be lowered. From the point of view of long-run social welfare it is very questionable, however, whether a more rapid exhaustion of our petroleum resources is desirable.

Motor-transport Regulations. As early as 1928 some states undertook the regulation of intrastate motor transportation. Common carriers were required to secure certificates of public convenience and necessity, tariffs were required to be filed, and some control was exercised over rates and other matters. In 1932 the first effective control was exercised over contract carriers. Finally Congress enacted the Motor Carrier Act of 1935, as Part II of the Interstate Commerce Act. Its provisions for controlling common carriers are rather comprehensive, the Interstate Commerce Commission being authorized to require surety bonds and to prescribe working conditions, methods of keeping accounts, maximum and minimum rates, and other regulations. Its provisions for controlling contract carriers are less complete. Among these are the requirement that a contract carrier must secure a permit to engage in contract carriage and a provision that the commission may prescribe minimum but not maximum rates which the contract carrier may charge. In exercising its powers the commission has worked in cooperation with state authorities.

Air Transportation. Despite all the fanfare attendant upon it, air transportation is not yet an important part of our transportation system, except for luxury passenger travel. In 1946 the number of air passengers was 14 million while intercity busses carried 229 million. In 1945 railroads carried 900 million passengers. There were in 1946 only 826 commercial aircraft in operation as compared to the thousands of trucks and railway cars.

In the field of freight transportation, air carriers are even less important, though a beginning has been made. Some agricultural products, like fancy fruits and vegetables, as well as flowers, are flown by air so that they will be as fresh as possible on delivery. It is hard to believe, however, that in the near future air transportation will have a very large place in the total freight picture.

TRANSPORTATION AND PUBLIC-UTILITY PROBLEMS

One of the chief current problems in the field of transportation is that of coordinating the different systems, and indeed of coordinating the various government agencies concerned. The ICC, the Civil Aeronautics Board, the Maritime Commission, are all independent of each other and pursue unrelated policies. The lack of coordination exists

because each form of transportation developed independently of the others, only to a slight extent for the purpose of supplementing each other, but largely as though the other forms of transportation did not exist. Legislative policy has been largely to force them to compete with each other, rather than to encourage them to operate as a single unified system of transportation. It has been urged during recent years that the need is for a completely integrated transportation system, without reference to whether it is by rail, water, or highway.

For the lack of coordination the following reasons have been pointed out: (1) Laws prohibiting the owners of one form of transportation (railroads in particular) from engaging in the other forms. (2) Special government subsidies to some forms of transportation, often for the avowed purpose of compelling those engaged in other forms of transportation to reduce their rates. (3) Inequality in the tax burden placed upon different forms of transportation. (4) Inequality in the degree of regulation applied to different kinds of transportation agencies.

It has been urged that all forms of transportation should be placed under one regulating authority, national in scope, and that the same degrees of favors, burdens, and regulations should be applied to all forms. This proposal as an ideal has much to be said in its favor. Its practical realization, however, appears difficult.

Public-utility Regulation. During the depression, public utilities came in for a good deal of deserved opprobrium because of the malpractice of so many of the utility holding companies, especially those established by Samuel Insull and Arthur Hopson. A holding company is one that does not engage in operations itself, but owns the stock of operating companies. It was found that by all kinds of complicated and shady financial manipulations holding-company promoters with little capital managed to obtain control of large operating companies and milked them for personal benefit. These practices and the justified feeling that the state public-utility commissions had not exercised sufficiently stringent control led the Federal government to intervene actively in this area.

First, public-utility holding companies' practices were made subject to Federal regulation, and most important, by the "death-sentence" section of the Securities and Exchange Act of 1935, all holding companies which performed no useful function except to tie together unrelated operating companies or which held stock at several removes from the operating company were to be dissolved. (It had been a common practice for promoters to "pyramid" their capital by having one holding company own the stock of the next, which in turn would hold stock in yet another, and so on, allowing opportunity for endless manipulation and making

any sort of check difficult.) Under the supervision of the Securities and Exchange Commission the painful process of dissolution has been going on since.

Tennessee Valley Authority. The second attack on the problem of regulation was by provision of government-operated and-constructed hydroelectric facilities, notably the Tennessee Valley Authority and the Bonneville Power Authority. These public power systems, among other functions, are supposed to provide a measure, a "yardstick," of the appropriateness of power rates. The TVA's rates have been low and its competition forced the private companies in its area to sell their facilities to it. Defenders of private enterprise claim that its rates are low because the TVA is not subject to the same tax burdens they are and it is able to obtain money at lower rates of interest.

Here again is an argument that admits of no simple answer. The Federal developments do more than supply power. They provide irrigation water and new navigation facilities, contribute to flood control, and, in the case of the TVA at least, attempt to reorganize and improve the economic status of the region. How can one properly assess the cost of a multiple-purpose dam among these various uses?

One thing appears certain. The war and the postwar period showed that requirements for electricity were far greater than anyone before the war had ever dreamed of. In 1939 millions of kilowatt hours produced totaled 105,768, in 1945, 193,558, and in 1946, 190,715. This immense increase could not have taken place without the full use of the facilities provided by the Federal government, which facilities, it is safe to say, would never have been erected by private industry.

The final answer is, as usual, probably between the extremes. In a country devoted to private enterprise, private initiative should be given an opportunity to express itself and capital should have a chance to earn a fair return. On the other hand, the government should be free to go forward with projects private companies are not prepared to undertake, especially of the very large, multipurpose variety.

The Rural Electrification Administration. A particular complaint of farmers against the public-utility companies was that they were reluctant to extend service to rural areas. The companies claimed that the potential rural customers were so thinly scattered as to make construction and maintenance costs very high, with the consequence that the rates would be intolerable, and they continued to stay out of farm areas.

With the passage of the Rural Electrification Act in 1935 the Federal government started lending money to cooperatives of farm consumers of power. We have in Chap. 3 already called attention to the increase in the number of farmers using electricity, which is largely due to the REA

program. In 1946–1947, over 565,000 new customers were connected as a result of REA loans.

Questions and Problems

1. What are the distinctive features of a business affected with a public interest, and what are the obligations resting upon those who engage in such a business?
2. Show the degree of importance of transportation and other public-utility services by comparing the capital investment and persons employed in such services and the income derived from them, with the nation's total wealth, income, and gainfully employed. Compare railway transportation, highway transportation, and the light and power public-utility companies as to rapidity of development in a recent ten-year period.
3. Explain the meaning of a *fair return* and a *fair value* in application to a business affected with a public interest.
4. Explain three important principles of rate making.
5. Under what circumstances is water transportation extremely economical, and why?
6. What are the advantages and disadvantages of truck transportation as compared to rail transportation?
7. Is it fair to use part of the taxes collected from railroads to build highways?

Suggested Readings

1. T. C. Bingham, *Transportation: Principles and Problems* (1946), is a comprehensive new book.
2. D. Philip Locklin, *Economics of Transportation* (1947), treats the subject in a simple and yet comprehensive manner.
3. E. Troxel, *Economics of Public Utilities* (1947), discusses regulation and its effects.
4. *Automobile Facts and Figures*, published annually by the Automobile Manufacturers' Association, New Center Building, Detroit, Michigan, and available free, contains an abundance of information about both the automobile industry and highway expenditures.

CHAPTER 23

MARKETING AND COOPERATION

Before the development of extreme specialization had occurred, the same person who *produced* goods (according to the popular usage of the word *produce*), or ~~was~~ in the language of economics created form utility, could in large part personally sell his products to nearby consumers. At present it is generally most economic to depend for marketing on those who specialize in performing that kind of work. This is due principally to three causes: (1) the distance which intervenes between the places where the goods are produced, according to the popular usage of that word, and where they are consumed; (2) the number and complexity of consumers' wants; (3) the fact that those who specialize in marketing develop special skill in that work. The Maine potato grower cannot personally sell and deliver his potatoes to hundreds or thousands of New York City consumers. Nor is it economical for the New York shirt-maker, the Boston shoe manufacturer, the Pittsburgh glass producer, and distant makers of thousands of other wares each to sell and to deliver their goods personally to Maine potato growers and other final consumers. But distance is not the only difficulty. Factories rarely attempt to sell directly to final consumers in the very cities in which they are located. Almost universally they find it much more satisfactory to depend on special marketing institutions, such as retail stores, to do such selling. The number and complexity of the consumer's wants, the fact that each consumer wants small quantities of very many things and prefers personally and quickly to select what he desires when he wants it, are probably even more important than physical distance between producers and consumers, in causing marketing services to be performed by those who specialize in such work. Moreover, the special skill developed by those who devote themselves solely to such work, or some particular part of it, is an important reason for marketing being so generally performed by specialists. This explains at least partly, for example, why he who has a house to sell in a populous area quite generally prefers to list it with a real estate broker rather than to attempt to sell it himself.

The importance of marketing as a specialized part of our present economic life is shown by the fact that, of the 57 million people engaged in

production in 1946, 10.4 million, or about 18 per cent, were directly engaged in wholesale or retail trade and automobile services. In addition, there are many groups included in other classifications whose activities could be properly described as marketing, such as insurance salesmen and real estate brokers. Adding these would enlarge our total by a million. Still left out would be workers in the selling or other marketing activities of manufacturing concerns or other industries. Of the work in many such industries, marketing is a very large part, as a few simple examples will show. All employees in printing and publishing are reported as engaged in manufacturing, and that industry employs 4 per cent of all persons employed in manufacturing. But a considerable part of printing and publishing is advertising, and those employed in the advertising work of printing and publishing are in fact employed in marketing, and their wages and salaries are paid indirectly as marketing costs. Another example is meat packing, which is classed as a manufacturing industry, but nearly as many of its employees are engaged in performing marketing services as are engaged in performing "packing" or processing services.

If all workers in the transportation of commodities are included, and the time of workers which really is devoted to marketing services in other occupations, marketing probably occupies not far from one-third of our total gainfully employed population. If persons employed in furnishing store buildings and equipment, heat, light, and other necessities for marketing work (the wages and salaries of all of whom are indirectly paid as marketing costs) also are included, this percentage will be further increased. Obviously, marketing in a broad sense both gives rise to a large part of the cost of living and constitutes a large part of the services which supply our wants in living. This, however, is only saying that creating time, place, and possession utility is an important part of our economic life.

WHAT IS MARKETING?

A definition of marketing which both includes all that should be included and excludes all that should be excluded is difficult to give. People ordinarily think of marketing merely as selling. But in reports of expenses of marketing there are included usually not only the expenses of selling but all other expenses involved in moving goods from the ownership and the places in which they have been given form utility (or "produced" in the popular usage of that word), into the possession of consumers. We shall define the marketing of material goods as *the performance of the services necessary to move such goods after they have been physically created, or given form utility, into the physical possession and ownership of final consumers.*

Marketing Services. We shall distinguish nine distinct marketing services: (1) assembling; (2) financing; (3) storing; (4) grading and standardizing; (5) packaging; (6) transporting; (7) processing (not for all commodities); (8) distributing; (9) selling. Let us note some illustrations of these services. Stores are recognized as marketing institutions. Yet the original meaning of a store was beyond question a place in which goods were stored, and the cost of storage, partly in the retail store, but mostly at other points, continues to be an important cost in marketing. *Storage*, therefore, is a marketing service. But, even before goods can be stored or before they can be offered for sale in retail stores, they must be assembled by the retailer by a buying process. Before farm products can be economically shipped from the country points near which they were produced (in the popular usage of that word), they also must be assembled by a buying process to secure the volume necessary to carry on economically country-point storage, carload selling, transportation to distant points, and similar services. Such country-point buying or assembling may be done by a private dealer or a cooperative association. But in either case there is a cost of assembling, meaning buying or securing control of the product, *quite outside of transportation* or other services. The manager of a large cooperative wool-marketing organization has said in a public address, "It costs us more to get wool than to sell it." By "getting," he meant securing control of it or assembling it. Though at country points assembling is to secure volume, the retailer must assemble, or buy, to secure variety. *Assembling* is, therefore, a distinct marketing service, and one which is ordinarily performed more than once in marketing. The movement of goods must be financed, as the producer who gave them form utility, and each subsequent owner in turn, wishes to be paid for them before payment has been received from final consumers. Also there must be financing of storage and other facilities. *Financing*, accordingly, becomes an important feature of marketing.

Grading and standardization of farm products are a necessary marketing service, which for some products, as in candling eggs, requires an appreciable expense. Most products must be put into containers or packages, to prevent spoilage and waste and to facilitate their movement from the farm or factory into the possession of final consumers. Costs of such packages as boxes, paper sacks, and twine commonly constitute from 2 to 4 per cent of all the expenses of a retail grocery store. Baskets or boxes for apples, cases and fillers for eggs, and the expenses of putting the goods into these packages cause *packaging* to be not only an important service, but for some products an important marketing cost. Goods must be transported, and for some products *transportation*

as a marketing service is quite costly, as will be further shown later in this chapter.

To what extent *processing* the product should be regarded as a part of marketing is a debatable question. Ordinarily such minor processing as pasteurizing milk or removing dirt or spray residue from fruit is considered a part of marketing, whereas such elaborate processing as manufacturing wheat and other raw materials into flour and bread, textile fibers into clothing, and animals into meat is regarded as beyond the scope of marketing.

Finding the best markets involves expenses in addition to the cost of making sales. Such additional costs include those of gathering market information and deciding when and where to sell, and these may be called costs of *distribution* as a particular marketing service.¹ *Selling*, or inducing persons to want and agree to make payment for what a given seller has for sale, is the central step about which all other marketing services revolve. It may be considered the nucleus of marketing. In some cases, as in selling insurance or goods not familiar to prospective buyers, this step is also by far the most costly. In other cases, as in selling wheat to a miller, it is relatively inexpensive in comparison with other marketing services. Selling includes transfer of title and collecting or receiving payment.

In addition to (1) assembling, (2) financing, (3) storing, (4) grading and standardizing, (5) packaging, (6) transporting, (7) processing, (8) distributing, and (9) selling, some writers distinguish other marketing services. Risk taking is very often considered a distinct additional marketing function. Clearly risk taking is involved in marketing and gives rise to costs. But the present writers prefer to regard it as an incidental feature of the other services rather than as a distinct service. Part of the rates paid for storage, transportation, and the other services listed is for risk of loss from fire and accident, and even of injury to employees. The margins taken by dealers must be large enough to cover such risks as well as the risk of loss from waste and spoilage of the commodity itself. These and other risks add to the costs of performing the services above listed. In addition to risk, the depreciation of equipment and the keeping of accounts are incidental services which give rise to expenses connected with the nine services listed.

Some of the services above listed are performed more than once and in more than one location, as the goods are moved from the farm or

¹ Distribution as a particular marketing service should not be confused with distribution as often used in business to refer to marketing in general, or to distribution as used in the language of economics to refer to the division of the social income among the different classes or individuals of the population.

other place where they originally received form utility toward and into the physical possession and ownership of final consumers. Some are not performed with all commodities. With some commodities some services are most costly, with other commodities other services. The list of services given, however, enables us to realize that marketing involves much more than merely selling.

Marketing Agencies and Stages. Marketing agencies include country buyers, cooperative associations, different transportation agencies, terminal wholesale dealers, organized exchanges, auction companies, storage companies, brokers, commission merchants, jobbers, retail stores, peddlers, and others. There are considerable differences in the lists of agencies which handle different commodities. Furthermore, different parts of the same commodity move through a variety of different agencies. Accordingly different kinds of marketing agencies tend to be in constant competition with each other.

Marketing farm products under most modern conditions involves three broad stages: (1) concentration, (2) storage and equalization as to time and place, and (3) dispersion. But the problems of marketing and possibilities of improving on present practices may be best appreciated by noting the necessity of performing such services as the nine above listed and then inquiring how these services may be most effectively and economically performed.

Marketing and Price. When the subject of marketing is mentioned, that feature of it which immediately comes to the minds of most persons having goods to market is the securing of a satisfactory price. The securing of such a price is not a simple matter. It involves indirectly almost everything considered in this entire book. It involves all the principles governing prices under competitive and monopolistic conditions. It involves securing a price in satisfactory relation to the cost of production and accordingly includes everything pertaining to the relation between cost of production and price. All these matters cannot be discussed in this chapter. Some have received consideration in preceding chapters, and others are still to be considered in the chapters to follow. Moreover, all the details of the services performed by different marketing agencies, and the many technical features of marketing and of trade practices, which differ to a considerable extent with different commodities, cannot be here described and considered. For them the student is referred to special treatises on marketing. Our discussion will be limited to (1) a comparison of marketing costs of typical farm products and causes for variations; (2) retailing costs, including those of goods other than farm products; (3) the cooperative marketing of farm product; (4) programs for improvement.

TYPICAL MARKETING COSTS

A Commodity of Low Marketing Costs. Low marketing costs are well illustrated by butter. The cost of spanning the gap between the producer of the raw material and the distant consumer of the finished product is lower for butter than for any other important farm product or other product of great importance which is sold to consumers in relatively small amounts at one sale. In 1943, for instance, farmers received 82 cents of each consumer's dollar spent for butter.

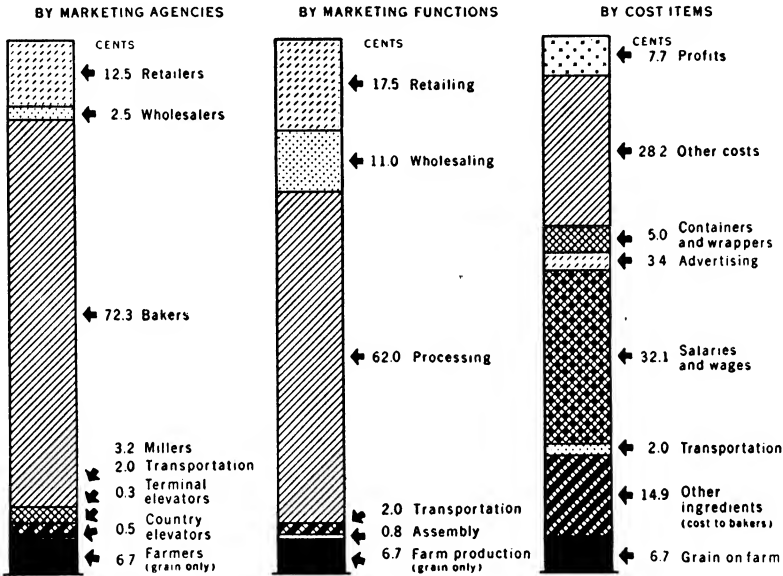


FIG. 37. Bakery products: approximate distribution of the consumers' dollar by marketing agencies, functions, and cost items, United States, 1939. Source: *Neg. 46138, BAE, USDA.*

Commodities with High Marketing Costs. In greatest contrast with butter are fruits and vegetables, for which before the Second World War the farmer's share of the consumer's dollar ran only about to 30 per cent. With especially highly perishable items that often had to be carried over long distances, causing large losses, farmers received less than the average. In the case of celery, for example, their share ran from 20 to 25 per cent of the consumer's dollar.

Perishability is far from being the sole cause of the difference between margins on butter and fruits or vegetables. There are many others which help explain the great varieties in relative distribution margins among food commodities. Another reason why the costs of getting many farm

commodities to the consumer are high is the amount of processing involved. This applies not only to canned fruits and vegetables, but to bread, which, as it were, must be processed twice, once by the miller and once by the baker. Figure 37 shows how much goes for the processing, marketing, and transportation of bread. It illustrates the well-known statement that if the "farmer gave his wheat for nothing, if the miller milled his flour for nothing, if the railroad hauled the flour for nothing," bread would still cost about 85 per cent of what it costs now. As the illustration shows, this much went to other agencies besides the

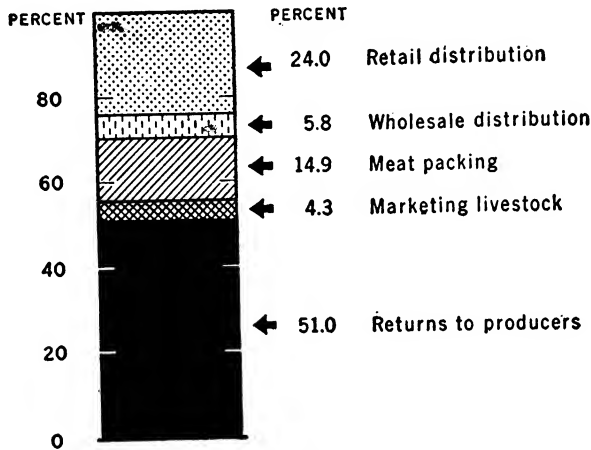


FIG. 38. Distribution of the consumer's dollar for meat and meat products on the basis of marketing and processing functions, 1939. Source: *Neg. 45698, BAE, USDA.*

farmer (for grain), the miller, and transportation. Two points in this illustration should be noted carefully:

1. In the first bar on the right, the 72.3 per cent shown going to bakers includes the selling and transportation costs of bakers who are also retailers and wholesalers, as well as the costs of the baking operation.

2. The farmer's share of the consumer's dollar spent on bread is at least double the share for grain alone. This is so because bakery products include eggs, milk, fruit, sugar, butter, yeast, and corn sirup.²

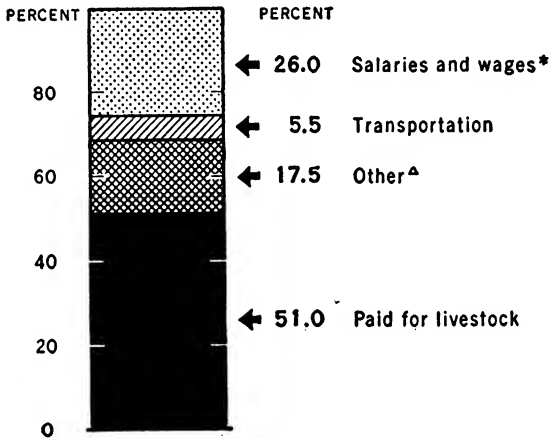
Figures 38 and 39, which show the breakdown of the consumer's dollar spent for meat, will be of interest. Here also we have analyses by functions and by cost items.

Meat is a good deal like butter in that the value of raw material is high so that transportation and marketing costs are, as it were, necessarily small in comparison. It costs as much of the grocer's time to sell

² Donald R. Stokes, *Marketing Margins, and Costs for Grains, Grain Products and Dry Edible Beans*, U.S. Department of Agriculture, *Technical Bulletin No. 934*, p. 37.

a pound of packaged bacon, of butter, or of dry beans. Clearly the cost of retailing in relation to farm price will be much higher in the case of the latter cheap product than in the case of the former two high-priced ones. Meat, again like butter, though perishable is well taken care of because it is expensive. Also, it moves fast so that it does not get a chance to deteriorate.

In contrast with meat and butter, as previously pointed out, are fruits and vegetables. In Table 51 an analysis of marketing Pacific North-



^{*} EXCLUSIVE OF SALARIES AND WAGES PAID FOR TRANSPORTING LIVESTOCK AND MEAT
[△] INCLUDES SUPPLIES, CONTAINERS, TAXES, DEPRECIATION, INTEREST, ETC., AND PROFIT

FIG. 39. Distribution of the consumer's dollar paid for meat and meat products, by cost items, 1939. Source: Neg. 45700, BAE, USDA.

west apples is presented which shows clearly how large retailing, transportation, and packing costs bulk in relation to the farmer's returns for commodities of this nature.

Course of Margins. As pointed out in Chap. 14, the greater flexibility of farm-product prices as compared to those of marketing services has meant that percentagewise margins increase when prices in general are falling and decrease when they are rising. The fact that when prices are rising the volume of sales is likewise going up has a lot to do with this because there is a reduction in overhead cost per unit sold.

Table 52, covering the principal food groups, and Fig. 40 show very clearly how the farmer's share of the food dollar shifts with the upward and downward movements of prices. In those periods when prices were high, the farmer's share was also high.

Rigidity of Marketing Costs. All the various marketing costs change but slowly per unit of product as prices change. Dealers, even when

TABLE 51. COSTS OF MARKETING PACIFIC NORTHWEST APPLES IN CHICAGO, OCTOBER, 1935, TO DECEMBER, 1936

Item	Per cent of consumer's dollar
Cost to consumer.....	100
Distribution margins	
Retail.....	31.73
Wholesale.....	2.26
Intermediate.....	0.34
Merchant-shipper or broker for grower.....	3.44
Subtotal.....	37.77
Freight and other transit charges.....	22.51
Washing, sorting, grading, packing, inspection and loading costs.....	14.45
Storage charges.....	2.71
Miscellaneous.....	0.19
Proceeds to growers.....	22.37

SOURCE: From Federal Trade Commission, *Report on Distribution Methods and Costs—Part 1, Important Food Products*, 1944, p. 162, Table 36.

there is competition, will not pay more for products than they expect to be able to receive for them in excess of at least all their out-of-pocket, or direct, costs of doing business, and they will not long continue in business if they do not receive also their fixed costs, including some degree of *net profit*, or interest, on their invested capital. The price each dealer will pay for products depends, therefore, on his costs and what he

TABLE 52. FARMERS' PERCENTAGE SHARE OF THE CONSUMER'S DOLLAR

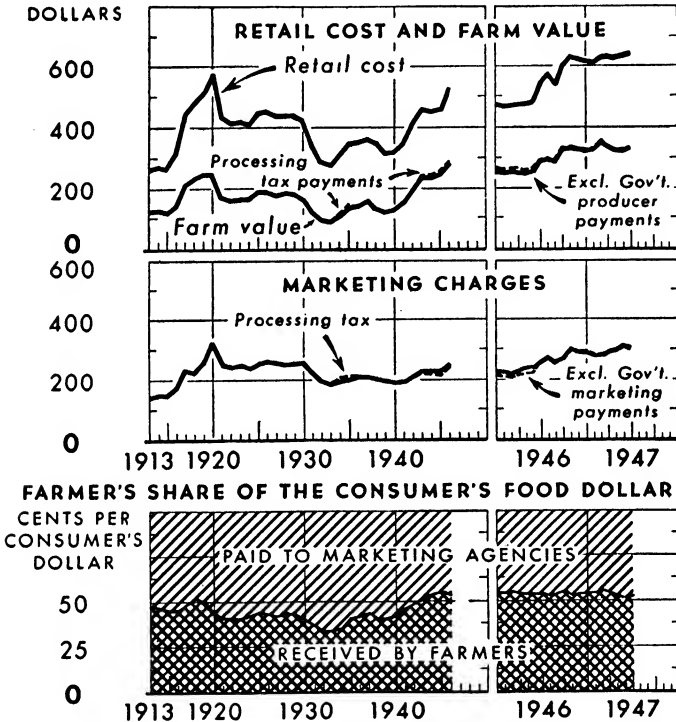
Commodity group	1929	1932	1939	1945
Meat products.....	53	39	51	76
Dairy products.....	53	43	48	59
Poultry and eggs.....	66	61	65	73
Bakery and other cereal products.....	23	13	17	31
Fruits and vegetables, fresh and preserved.....	31	27	30	44
Miscellaneous food products.....	19	12	15	29
All products.....	42	32	39	54

SOURCE: Price Spreads between Farmers and Consumers, U.S. Department of Agriculture, *Miscellaneous Publication 576*, Agricultural Statistics, 1946, pp. 576, 577.

hopes to be able to receive for them from those to whom he must sell. The final buyer is the consumer. Ultimately prices received by farmers depend, therefore, on the prices at which the goods can be sold to consumers and on marketing costs. If a shortage of any farm product develops, prices to consumers can be raised and dealers do not hesitate to raise them, though professing great grief in so doing. Competition

among dealers for supplies in turn results in higher prices to farmers. But if there are large supplies, prices to consumers must be lowered to move the goods into consumption, and the effect of this drop is most severely felt by the farmers.

FARM FOOD PRODUCTS: PRICES, MARKETING CHARGES, AND FARMER'S SHARE OF CONSUMER'S DOLLAR, 1913-47 *



* AV ANNUAL PURCHASES PER FAMILY OF THREE AV CONSUMERS, 1935-39

FIG. 40. Source: Neg. 43745-X, BAE, USDA.

Let us suppose that the price to the consumer of a product is \$1, of which 50 per cent goes for marketing costs and 50 per cent is returned to the farmer. Now let us suppose that because of an increased supply of the product, or a reduced demand by consumers which may or may not be caused by a depression, the price to the consumer, in order to dispose of the supply, is lowered to 75 cents. The previous marketing costs were 50 cents, or 50 per cent of the retail price. With the drop in consumers' price, the marketing costs per unit of product will not rapidly decline to any great extent. Most marketing costs will decline only if there is

a decline in such cost factors as wage rates and rent—declines which occur very slowly. Dealers will not buy the product unless they can hope to cover their costs. Let us say that the marketing costs after some delay do decline from 50 to 45 cents and that dealers' margins are decreased by this amount. This means that the farmer now receives only the difference between 75 and 45 cents, or 30 cents, which is 40 per cent of the new retail price, as compared with 50 per cent of it which he previously received. A decline of 25 per cent in the retail price has resulted in a drop of 40 per cent in the price received by the farmer. When prices go up, there is a reverse effect. Marketing costs do not advance as quickly as farm costs so that if the retail price should rise to \$1.50, the chances are that the margin would increase only to 60 cents, leaving 90 cents or two-thirds of the consumer's dollar to the farmer.

Profit Margin. In the course of the rise in food prices after the Second World War it was often asserted that exorbitant profits by retailers or processors were largely responsible. There is no question but that the total profit of firms in the food industry, like that of firms in almost every other industry, were much greater in 1946 and 1947 than in any previous peacetime year. Thus the profits of food-product manufacturers before income taxes, which in 1929 had been 492 million dollars, had fallen to 89 millions in 1932, reached 543 millions in 1939, and soared to 1,748 millions in 1946.³

Profits per consumer's dollar expended for food, however, did not increase significantly. For a representative group of 29 large processing firms, the average profit per dollar of sales was 4.3 cents in 1940 and 5.4 in 1946. For a group of large retail food chains the corresponding figures were 2 cents and 2.9.⁴ Total profits of both groups were twice as large in the latter year as in the former because so many more dollars passed through their hands, both volume and prices having increased greatly. It would appear nevertheless that neither processors' or retailers' profits had materially widened the distance between the farmer and consumer.

It is interesting to note that in 1946, for a group of seven big dairy companies, included in the total of 29, average profit per dollar of sales was 5.6 cents, for eight large meat packers, 2.2, but for 14 others making branded products, mostly flour and cereals, it was 10.1.⁵ This difference

³ From *Survey of Current Business*, July, 1947, Supplement, Table IV. Profits after income taxes were (in millions): 1929, 429; 1932, 56; 1939, 430; 1946, 1,026. The significant figure for our purpose is the one above, for income taxes do not constitute a cost.

⁴ Joint Committee on the Economic Report, "Report on High Prices of Consumer Goods," 80th Cong., 2d Sess., p. 57.

⁵ Joint Committee on the Economic Report, "Report on Food Prices, Production and Consumption," *Senate Document* 113, 1948, 80th Cong., 1st Sess., Appendix Tables 19, 20, 21.

might be attributable to the monopoly advantage afforded by heavily advertised brands. In any case, however, the role of profits was relatively minor in high food prices, the basic causes being the enormous increase in purchasing power due partly to the mere increase of the quantity of the medium of exchange, but more to the real demand due to full employment in the United States and dire need abroad.

RETAILING COSTS

The cost of retailing deserves special consideration, because it often amounts to more than all other marketing costs combined. Some observers have estimated that all marketing services together, of which retailing is the most important, contribute one-third of the national income.

A few figures may be in order. In 1946 wholesale and retail trade accounted for 32.8 billion dollars or over 18 per cent of the total national income. Transportation, which is chiefly the transportation of freight and thus a marketing service, added 10 billions more. In addition, as pointed out in the beginning of the chapter, many of the costs of manufacturing and service industries are actually marketing costs. If the total marketing bill is then estimated to be in the neighborhood of one-third of the national income, or in 1946 about 60 billion dollars, retailing costs accounted for 24 billions or nearly 40 per cent of the marketing total.

Typical Retail Margins and Costs. In Table 53 are shown the gross retail margins, principal elements of cost, and net profits for 1947 for several classes of retail stores, collected by the Chamber of Commerce of the United States.

First should be noted the size of typical gross margins of the different kinds of stores. The gross margin is the difference between the cost to the retailer and his selling price on the goods sold, expressed as a percentage of the retail price. The variation is between 16 per cent for motor-vehicle retailing to 55 per cent for florists. Perhaps the difference in the perishability of the articles sold by these two categories of retailers accounts for the great difference in gross margin.

Next the profit figures should be noted. Here the variation is between 1 and 8 per cent. It should be remembered that net profit includes interest on the invested capital of owners as well as pure profit, if any. The size of the typical net-profit figure indicates that no significant reduction in retail prices is possible merely through a reduction of the average net profit of dealers. If the amount of the margin (difference between cost of goods and selling price) of the typical retailers is to be appreciably reduced, the reduction must come from reduced expenses of retailers, rather than from decreased net profits of the average retailer.

It should be carefully noted, however, that the net profit as shown in Table 53 refers to the percentage of receipts from sales which is available as a reward for invested capital. It does not refer to the percentage earned on invested capital. The latter would be affected both by the rate of stock turnover and the relation between net worth and debt.

TABLE 53. 1947 ESTIMATES
Operating averages per dollar of retail sales

Type of distributor	Gross margin	Payroll (including active proprietors)	Advertising	Other expenses	Taxes	Net profit
Florist.....	55	22	3.0	20.0	2.0	8.0
Jewelry.....	50	23	4.0	16.0	2.0	5.0
Radio and appliance.....	45	30	2.5	10.5	1.0	1.0
Food—nongrocery.....	45	27	1.0	11.0	1.0	5.0
Eating and drinking.....	45	30	1.0	11.0	1.0	2.0
Home furnishings.....	40	18	2.5	14.9	0.5	5.0
Books and stationery.....	35	20	1.0	9.0	1.0	4.0
Paint.....	35	15	1.5	13.0	1.5	4.0
Shoe.....	30	17	2.5	7.5	1.5	1.5
Apparel.....	30	16	2.0	7.0	2.0	3.0
Department and general....	30	15	2.0	7.0	3.0	3.0
Drug.....	30	15	1.0	9.0	1.5	3.5
Fuel.....	30	13	1.0	10.0	2.0	4.0
Hardware and farm supply..	25	12	1.0	7.5	1.5	3.0
Building material.....	25	13	0.5	7.0	1.5	3.0
Liquor and tobacco.....	25	11	0.5	10.0	1.0	2.5
Filling station.....	25	14	1.0	8.0	0.5	1.5
Meat and seafood.....	20	12	0.5	5.0	0.5	2.0
Grocery.....	17	9	0.5	5.5	0.5	1.5
Country and farm supply...	17	7	0.5	7.5	0.5	1.5
Motor vehicles.....	16	9	0.5	4.0	0.5	2.0

SOURCE: Domestic Distribution Department, Chamber of Commerce of the United States, Washington, D.C.

Next should be noted the elements of cost. Typically half or more than half of the cost of retailing goes for direct payment of wages and salaries. Generally the next largest element is rent. Another element of cost, advertising, is shown separately, but this is not a large factor in the total. Other items like taxes, interest on borrowed money, insurance, repairs, heat, light, or supplies are even smaller. Nevertheless, these items in the aggregate, together with those previously mentioned,

took nearly all of the gross margin. By far the greatest cost in retailing, as in all marketing, is for human services.

The Number of Stores and the Cost of Retailing. It is frequently asserted that the primary reason for the high cost of retailing is that there are too many stores. According to the retail census for 1939, there were in the United States in that year 1,770,000 retail stores, with total retail sales slightly in excess of 42 billion dollars. There was one retail store for every 73 inhabitants, with average sales of about \$24,000 per store. These sales data do not include goods and services not bought through stores.

An examination of the relative costs of conducting small and large stores does not lend support to the opinion that the great number of stores is the primary cause for the high cost of retailing. If the great number of stores is the principal reason for the high cost of retailing, then the expenses of stores of a given kind with large sales should under the same general circumstances be a lower percentage of sales than those of stores of the same kind with smaller sales. A compilation by the Chamber of Commerce of the United States of the data assembled by the University of Colorado and the Harvard University Graduate School of Business, covering grocery, shoe, jewelry, drug, hardware, lumber, men's clothing, office supply, specialty, and department stores, shows that for only one class of the eleven (namely, hardware) was there a consistent and appreciable difference in expenses in favor of the larger stores. For several classes of stores the percentage of retail prices required to cover expenses was consistently somewhat greater with the larger than with the smaller stores, probably because of more service rendered. Among these were shoe stores and department stores. Usually there was practically no difference, though the percentage of income from sales required to cover expenses of grocery stores with less than \$30,000 of sales per year tended to be slightly greater than for those exceeding \$30,000 of sales per year. Expenses for grocery stores with sales from \$50,000 to \$99,000 per year were a smaller percentage of sales income than those of any size group with greater sales. For jewelry stores the expenses of the group with sales below \$20,000 were practically the same percentage as those with sales exceeding \$500,000. For men's clothing stores the expense percentage was exactly the same for stores with sales below \$100,000 as for stores with sales above \$1,000,000, being 29.4 per cent in each case. For stores with sales between \$100,000 and \$200,000, it was slightly less; for groups with sales between \$200,000 and \$1,000,000, it was a trifle greater.

The data indicate that in general (though with some exceptions) the percentage of the retail price required to cover expenses does not tend to be less for larger stores. As more business is done, more employees

must be hired, more floor space is required, more rent must be paid, and other expenses increase accordingly. This appears to show that in general the high cost of retailing is not due primarily to the great number of stores—that is, the small size of stores—but that it is primarily due to the amount of service expected from the stores. Customers usually expect to be served promptly, to have the privilege of examining the goods in which they are interested, to have them demonstrated and explained by the salesman, and in many cases to take them home or to have them sent to their homes on approval, to be returned if not satisfactory. If, instead of expecting these services, customers would line up and be served in the manner in which a private in the Army is served his meals, or in which we are informed that customers are served in the state stores of Soviet Russia, and pay cash for purchases, the cost of retailing could be greatly reduced. But customers usually are not satisfied with that kind of service. If, upon entering a store, they are not waited on promptly they usually go elsewhere. It is the furnishing of prompt service, of elaborate demonstration, of pleasant surroundings, of the privilege of a wide range of choice, and plenty of time in which to make it, of credit and delivery, and of other such items, which principally causes the high cost of retailing.⁶

Some Possibilities of Reducing Marketing Costs. All stores, however, do not sell equally cheaply, even after allowance is made for differences in services rendered. Stores are constantly trying out different practices. Some render more service and charge higher prices. Others render less service and sell more cheaply. The buyer usually has a fairly wide degree of choice. He can have either elaborate service or minimum prices. Ordinarily he cannot have both, because the merchant cannot afford to furnish him both. Nevertheless, some stores do furnish more in merchandise, or service, or both, for the same money than do other stores, and the alert customer by patronizing the stores which offer most will encourage the most economic methods in merchandising. *The great number of stores is itself partly a result of the demand to be served promptly, and partly a result of the demand for convenience of location.* Whatever advantage, if any, the large store has over that of moderate size is due mostly to advantage in doing its buying. In some cases this advantage is appreciable; in other cases it is not of great consequence.

There are other steps in marketing in which increased volume appreciably reduces costs. Any marketing unit has lower costs per unit of product handled if its plant and employees are always fully employed than if they are to a great extent idle, and inadequate volume means either idle overhead or insufficient equipment to operate economically. Cooperative marketing institutions find an adequate volume of business

⁶ Support for these conclusions is found in *Does Distribution Cost Too Much?* (Twentieth Century Fund, 1939), p. 144.

one of their important requisites. With a large and assured volume of products, they find it possible not only to reduce the costs of performing certain services but to render services which they could not render with a small volume.

After all the above has been said, however, we must recognize that the greatest cause of the high cost of retailing—the most costly step in marketing—is the extent and character of the services expected from retailers.

Chain Stores. In the years following the First World War, chain stores made great strides. By 1935 the Great Atlantic and Pacific Tea Co., the largest chain-store system in the country, had about 1,500 stores and did about 14 per cent of the total grocery business of the country.⁷ According to Census reports, all chain stores did 21.3 per cent of the total retail business of the nation in 1929, 22.8 per cent in 1935, and 27 per cent in 1939. Postwar estimates of chain-store and mail-order sales indicated they were running at about 22 or 23 per cent of total retail sales.

The principal appeal of the chain store has been lower prices, together with varying degrees of reduced services. The lower prices in chain stores have been made possible partly by reduced services and partly by economies in buying, though other economies in management also have been introduced. The old-fashioned methods used by retail stores in securing their goods through jobbers involved considerable extravagant selling expenses by jobbers and buying expenses by retailers. Much of this was eliminated by chain stores, in which local store managers ordered their goods without such large jobbing expenses in selling them. The chain stores caused independent single-unit stores to improve their organization for buying, many forming buying rings or *voluntary chains* as a method of competing with the chain stores. The single-unit stores also copied other improvements introduced by the chains. Both chain stores and single-unit stores have certain advantages, and it is not likely that either type will entirely replace the other.

In the years before the Second World War there was much agitation against chain stores. The Robinson-Patman Act, passed by Congress in 1936, reduced their advantages in buying. In 1939, special taxes against chain stores were in force in 22 states. Because the war intervened before these laws had much chance to work out, it is difficult to say what effect they will have. On the whole it appears likely that chains will hold their place, if not improve it. As noted above, their proportion of total retail sales has held relatively steady for the last twenty years.

It is true that the number of chain outlets was reduced from 151,712

⁷ A. C. Hoffman, *Large Scale Organization in the Food Industries*, p. 12. (In September, 1949, the Antitrust Division of the Department of Justice instituted a suit to break up the A. & P.)

in 1929 to 123,195 in 1939, but this was almost wholly due to a drop in the number of chain filling stations, from 28,617 to 10,291. The reason for this was more that oil companies found that the stations were operated more efficiently when they were independently owned or leased to individuals, than the effect of antichain-store laws or taxes.

Chain food stores also were reduced from 52,618 in 1929 to 40,350 in 1939. Chain-store taxes may have had something to do with this, but so had another important new development in food retailing, the growth of the self-service food "supermarket." Both chains and independents are turning more and more to this type of outlet under the pressure of high wages and labor shortages.

COOPERATIVE MARKETING

Cooperative marketing by farmers refers to any arrangement whereby a group of farmers performs marketing services by acting together in an organization operated, not for the purpose of making profits from marketing goods produced by others, but in order to secure for their own products the greatest net returns possible. Usually such cooperative activities include *making sales* through salaried employees. To this, however, there are some exceptions. For example, one kind of cooperative marketing organization is the livestock-shipping association, operated simply for the purpose of assembling and cooperatively shipping livestock to a terminal-market commission firm, which does the actual selling on a commission basis. There are also fruit-packing and creamery cooperatives which do their selling through privately owned *sales agencies* or commission firms. To secure certain privileges extended to cooperative marketing organizations by law, these associations must qualify under special laws, such as the Capper-Volstead Act and the Farm Credit Act. Most of the cooperative organizations as above defined could qualify under these laws, though some could not.

Total memberships in cooperative marketing associations are greater than the number of farmers belonging to them, as many farmers belong to more than one organization. Total sales by cooperatives also are greater than the income farmers secure through them. This is for two reasons. First, from the gross income from sales of a cooperative association must be deducted costs of operating expenses, and only that which remains is returned to farmers. Operating expenses vary greatly, but how great they are may be shown by the fact that in a cooperative cannery typically from one-half to three-fourths of the income from wholesale sales by the cannery is used to cover costs of cans, labor, and other expense items, and less than half, sometimes less than one-fourth, goes to farmers for their products. The second reason for the excess of sales by cooperatives over income received by farmers through coopera-

tives is that the same products may pass through the hands of more than one cooperative. Reports of livestock sales by cooperatives, for example, may include the totals of both the local shipping associations and the terminal cooperative commission companies which in the terminal markets sell the stock shipped to them by the local shipping associations.

Table 54 summarizes the statistics for farm-cooperative business in recent years. The 7,378 marketing associations sold over 5 billion dol-

TABLE 54. FARMERS' COOPERATIVE MARKETING AND PURCHASING ASSOCIATIONS: NUMBER, ESTIMATED MEMBERSHIP, AND ESTIMATED BUSINESS, UNITED STATES, 1936-1946

Year	Marketing associations			Purchasing associations			Total		
	Associa- tions listed, <i>number</i>	Esti- mated member- ship (000 <i>omitted</i>)	Estimated business (000 <i>omitted</i>)	Associa- tions listed, <i>number</i>	Esti- mated member- ship (000 <i>omitted</i>)	Estimated business (000 <i>omitted</i>)	Associa- tions listed, <i>number</i>	Esti- mated member- ship (000 <i>omitted</i>)	Estimated business (000 <i>omitted</i>)
1936	8,142	2,414	\$1,882,600	2,601	856	\$313,400	10,743	3,270	\$2,196,000
1937	8,300	2,500	2,050,000	2,600	900	350,000	10,900	3,400	2,400,000
1938	8,100	2,410	1,765,000	2,600	890	335,000	10,700	3,300	2,100,000
1939	8,051	2,300	1,729,000	2,649	900	358,000	10,700	3,200	2,087,000
1940	7,943	2,420	1,911,000	2,657	980	369,000	10,600	3,400	2,280,000
1941	7,824	2,430	2,360,000	2,726	1,170	480,000	10,550	3,600	2,840,000
1942	7,708	2,580	3,180,000	2,742	1,270	600,000	10,450	3,850	3,780,000
1943	7,522	2,730	4,430,000	2,778	1,520	730,000	10,300	4,250	5,160,000
1944	7,400	2,895	4,835,000	2,750	1,610	810,000	10,150	4,505	5,645,000
1945	7,378	3,150	5,147,000	2,772	1,860	923,000	10,150	5,010	6,070,000

SOURCE: *Agricultural Statistics*, 1947, Table 717, p. 616.

lars worth of farm products in 1945, equivalent to about 25 per cent of cash received from farm marketings in that year. For the reasons above given, however, this does not mean that 25 per cent of farm products of the nation were cooperatively marketed. Probably between 15 and 20 per cent of the products marketed by farmers were handled by cooperative associations.

Cooperative purchasing represents an even smaller proportion of farmers' total purchases. By 1945, however, the annual volume of business of farmers' selling and purchasing cooperatives had increased to more than 6 billion dollars.

Types of Cooperative Organizations. Cooperative marketing organizations are of many types. Most organizations are incorporated, but some are not. Many associations, especially the larger ones, have contracts with their members in which members agree to deliver to the association all products produced by them of the kinds marketed by the association, but some associations, especially cooperative elevators and

creameries, do not have such contracts. Many small associations are entirely independent, but often local associations handling the same product are members of federations, the local association usually assembling and packaging or processing the product, and the central office of the federation supervising the standardization of the product and doing the selling in distant markets for all the locals. In such federations the member joins the local association, which has its own board of directors and conducts its own affairs and as an association is a member of the federation. A large organization which is not a federation, but which has many local branches all fully directed by the head office of the one association, which the members join, is known as a *centralized association*. There has been much discussion as to whether the centralized type or the federation-of-locals is the more satisfactory. It has not been demonstrated that either type is the better under all conditions. In addition to federations and centralized associations there are also small independent locals.

Possibilities of Cooperative Marketing. Cooperative marketing has frequently been presented as a possible cure for practically all the economic ills of agriculture. That, it certainly is not. Relative overproduction of agricultural products in comparison with commodities and services which farmers must buy will result in prices which are unfavorable to agriculture in spite of all that cooperative marketing organizations may do. Unless cooperatives can control the amount of the product which comes to market, they cannot exercise monopoly influence over price; and, for reasons which have been explained rather fully in Chap. 12, the power of cooperatives arbitrarily to control the quantity of products which shall be marketed is decidedly limited.

Nevertheless, cooperatives do have distinct possibilities of beneficial service. They can reduce the costs of assembling and other country-point services by eliminating certain wastes of excessive competition for supplies and duplication of physical facilities and at the same time can protect farmers from the dangers of a buyers' monopoly. In many cases cooperatives have brought about a higher degree of uniform grading and standardization of products from a large area than otherwise would have been attained. In some cases they have rendered better and cheaper sales service than otherwise would have prevailed. Most of the beneficial possibilities of cooperative marketing may be put under three heads: (1) better products; (2) reduction of marketing costs; (3) better selling. The possibilities of collective bargaining have been presented in Chap. 12.

As to the possibilities of cooperative buying, one illustration will suffice. The writers are personally acquainted with a chain of farmers' cooperative gasoline- and oil-supply companies which for several years

has furnished farmers gasoline for about four-fifths of the price which they would have been compelled to pay otherwise. This has been done by group buying in carload lots under a special contract and by reducing the cost of jobbing and retailing. With a large volume of assured business, one station performs the usual services of both jobbing and retailing at a much lower cost per gallon than the cost of jobbing alone under the usual arrangement of tank-wagon jobbers selling to retail service stations and these to consumers. Customers must wait more frequently for service and there is less waiting by employees for customers. No credit is granted, and such incidental services as wiping the windshield of the car and inflating tires for the patron without charge, are not rendered. Reduction of services and an assured large volume of business are the most important reasons for the striking savings, though ability to buy in carloads at competitive carload prices was essential to the success of the undertaking. Private retailers who favor applying principles of monopoly to marketing disapprove of the plan.

Where success in cooperative marketing has been attained, it usually has been based on the following: (1) members cooperatively inclined and willing to do without costly nonessential services; (2) an assured volume of business sufficiently large to make economic operation possible; (3) skillful and economic management, including adequate financing and accounting. Failures, where they have occurred, have usually been due to not observing these essentials.

PROGRAMS FOR IMPROVEMENT

Public criticism of marketing generally has been to the effect that it is too expensive. The preceding pages have shown that marketing broadly defined does take a large part of the social income, and that it also occupies a large part of the gainfully employed population. This is, however, a natural result of the technological improvements or reductions in cost which have occurred in the creation of form utility. Moreover, marketing is expensive because the elaborate services rendered are expensive, and these services are rendered because persons prefer them with the greater costs rather than less service and less cost. Whenever a sufficiently great number of people prefer less service with less cost they may secure that combination, often simply by patronizing stores which sell at lower prices with less service. In many cases cooperative marketing associations may appreciably reduce marketing costs and enhance net returns to farmers. Cooperative marketing alone, however, is not the solution of the problem of securing to farmers an abundant income.

While it is basically true that the high costs of marketing reflect the public desire for a variety and elaborateness of service that is expensive,

it is also true that certain marketing practices are unnecessary and could be eliminated. The milk trucks of six different companies still travel up the same city street, although it is obvious that if all deliveries in a single block were made by one truck, costs would be reduced. Although the practice was forbidden during the war, bread is again consigned to retailers, which means that the baker will take back any unsold loaves at the end of a day and charge the cost onto the loaves he does sell. Presumably this wasteful practice is, however, in part due to public demand for fresh bread only. The economic value of advertising, which makes

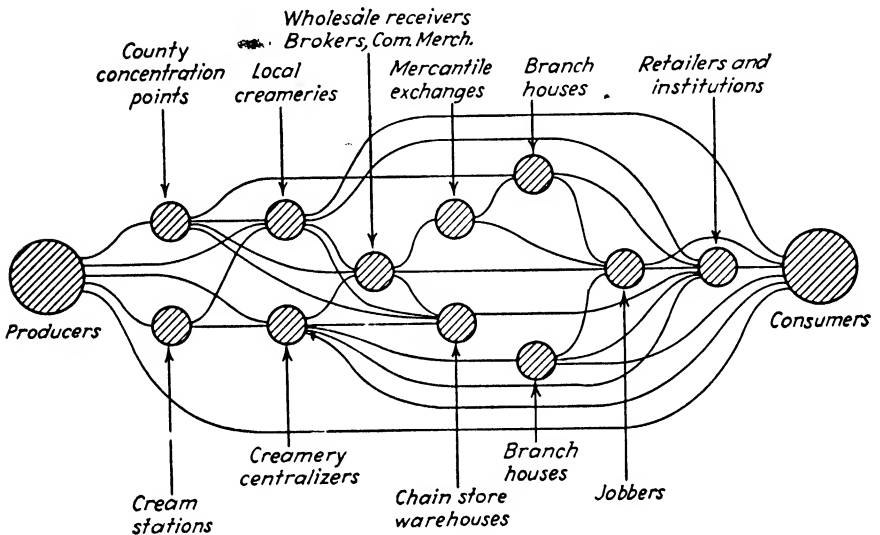


FIG. 41. Some typical examples of marketing channels for butter. Source: U.S. Department of Agriculture, Technical Bulletin No. 936, p. 26.

up a significant part of marketing costs, has often been called in question. Critics of current marketing practices have also pointed to the number of hands some foods go through on their way to the consumer—from farmer to assembler to broker to processor to jobber to wholesaler to retailer. It is hard to believe that some links in this chain could not be left out without any loss in efficiency. Figure 41, showing the main, not all, marketing channels for butter, indicates how complex our distribution system is.

In the Hope-Flanagan Bill of 1946, Congress provided extremely ample funds for research in the marketing of farm products with a view to reducing its cost. In view of the vast amount of effort already expended in this endeavor and the comparative paucity of result, it is hard to be too hopeful about this latest attempt, well financed as it is. Reform of

the practices mentioned above would have some effect in reducing marketing costs, but a significant reduction would require much more basic changes in present methods.

If the public were willing to buy unbranded and therefore unadvertised products and less highly processed products, as well as less elaborate retail service, and permit retailing to be concentrated in fewer, larger stores, real reductions in marketing costs might be achieved. In part this would involve the transfer of certain marketing functions from the retail store or processor to the householder. The trend actually is in the other direction. The public demand seems to be for more service and more elaborate processing, representing a transfer, as the country grows richer, of function from the home to the processor or the store, rather than the opposite as suggested above. Thus when a housewife buys fresh-frozen peas, she has transferred the work of cleaning and podding them to somebody else. The trend away from the self-sufficiency of pioneer days and toward greater economic interdependence is still manifest.

Questions and Problems

1. Why do those who supply marketing services receive a larger percentage of the national income than they did one hundred years ago?
2. Define marketing, and list and explain nine or more distinct marketing services. Which of these services are most costly, and why?
3. Explain in detail why the cost of marketing apples from the Pacific Northwest is greater than the cost of marketing butter.
4. What effect did rigidity in marketing costs have on change in the farmer's income between 1929 and 1933? Between 1940 and 1947?
5. Describe the steps between farmer and consumer for some product other than butter.
6. How expensive is retailing, what are the most important reasons for its being as expensive as it is, and how may retailing costs be reduced?
7. What proportion of all retailing is done by chain stores, and how have they affected marketing in general?
8. How important is cooperative marketing of farm products in the United States?
9. Show the possibilities and the limitations of cooperative marketing as a means of increasing the economic welfare of those engaged in agriculture.
10. Outline a constructive program with several points for improving the marketing of either agricultural products in general or some one agricultural product.
11. What are the functions required to get meat from the farmer to the consumer, and for how much of the consumer's dollar does each account?

Suggested Readings

1. Henry H. Bakken and Marvin A. Scharrs, *The Economics of Cooperative Marketing* (1937), presents the basic philosophy, principles, and practical methodology of cooperative marketing.
2. Deane W. Malott and Boyce F. Martin, *The Agricultural Industries* (1939), treats well by commodities the marketing of the principal agricultural products.

3. H. H. Maynard and T. N. Beckman, *Principles of Marketing* (1946), covers well and in a simple manner the chief features of marketing nonagricultural as well as agricultural products.

4. *Does Distribution Cost Too Much?* (The Twentieth Century Fund, 1939) treats thoroughly distribution costs and the possibilities of reducing them.

CHAPTER 24

AGRICULTURAL CREDIT

A fond father in Shakespeare's play "Hamlet" gives advice to his son in the following language:

Neither a borrower nor a lender be;
For loan oft loses both itself and friend,
And borrowing dulls the edge of husbandry.

The same attitude toward borrowing is expressed in a song published by the National Grange more than fifty years ago in "Grange Melodies," the songbook of that order. The title of this song is "Do Not Mortgage the Farm," and part of the words of the refrain are:

Sorrow soon will overtake you,
If ever you mortgage the farm.

CREDIT AND DEBT IN GENERAL

Causes of Credit and Interest. The above-expressed views of borrowing were influenced without doubt by the fact that their authors had in mind borrowing for consumption, or for living beyond one's income. Loans for consumption beyond the borrower's income are sometimes referred to as spendthrift loans, and such borrowing even today has few defenders, except when done on occasions of unusual misfortune. However, as we have already emphasized in Chap. 16, much the greater part of borrowing today is to secure the means for carrying on productive enterprises with the hope of profit therefrom. A borrowing person or organization thinks that he or it can afford to pay more for the immediate use of goods for carrying on business undertakings than the lending person or owner of savings thinks that he can secure by using those savings in enterprises himself. Both borrower and lender value the use of material goods which the lent funds will buy, but the borrower values the actual and immediate control of such goods more highly than does the lender. The hope of gain from having the present use of productive goods makes the borrower willing not only to repay the principal of a loan but to pay interest in addition, in an amount sufficient to cause the lender to lend. Interest actually paid covers not only compensation for the use of capital but also a reward for risk and the cost of making

and collecting the loan. The latter elements are in many cases the most important.

No Sharp Division between Debtor and Creditor Classes. So widespread is the practice of both borrowing and lending for business purposes that most persons who have made any net savings are at the same time both borrowers and lenders. Accordingly, credit operations thoroughly permeate our economic life. The owner of a home may still owe a part of the contracted purchase price, or have a mortgage on his home, at the same time that he has savings invested in paid-up values in life insurance or in other forms of investment. Paid-up life-insurance-policy values may be represented in part by money invested by insurance companies in mortgages held against the property of the very policyholders who have invested their savings in such life insurance. Bank deposits represent sums owed by banks to depositors, and to a large extent people who are borrowers from banks, and therefore bank debtors, are also depositors and therefore creditors of banks. Banks to a considerable extent require borrowers to file financial statements of their assets and liabilities as a requisite for securing loans, and rare indeed is such a financial statement on which are not listed both debts receivable and debts payable.

Extent of Debt. The course of debt in the United States has undergone interesting changes in the last twenty years. In 1929, as shown by Table 55, the total debt was a little more than twice as great as the national income of 87 billion dollars.

TABLE 55. DEBT IN THE UNITED STATES
(Billions of dollars)

Types of debt	1929	1945
Total public and private.....	187.7	400.5
Total public.....	28.3	260.8
Federal government.....	15.1	247.0
State and local governments.....	13.2	13.7
Total private.....	159.4	139.7
Long-term.....	89.0	71.7
Corporate (except railroad).....	47.3	30.6
Railroad.....	.....	8.7
Farm mortgage.....	9.6	5.1
Urban real estate.....	32.1	27.3
Short-term.....	70.4	68.0

SOURCE: *Statistical Abstract of the United States, 1947*, p. 300.

In 1945, debt was again somewhat over twice the national income of 183 billion. Net interest in the latter year was actually less than half—

3.1 billion dollars against 6.5 billions—what it had been in 1929 because private debt was smaller and interest rates lower. (In calculating net interest the Department of Commerce omits government payments of interest, as this does not give rise to net income for the community as a whole but is merely a transfer payment.) Even if government interest paid be added to this net interest, a procedure of doubtful validity, the total in 1929 comes to 7.5 billion dollars, and in 1945 to 6.8 billions. The absolute interest burden in 1945 was smaller than in 1929 and, of course, relative to total national income less than half as great. These facts illustrate our discussion of borrowing in Chap. 21, showing that the absolute size of a nation's debt is not important as the measure of its burdensomeness. What counts is the national income, the rate of interest, and the extent to which the debt is owed to members of the same community, so that interest payments represent transfers, not net payments.

It is clear from Table 55 that while the national debt increased greatly on account of the Second World War, private debt showed a significant decline. This was due to two causes, the forced wiping out or scaling-down of debts through bankruptcies or similar means during the depression, and the extremely high prosperity of the war years, which enabled firms and individuals, notably farmers, to pay off their debts.

Since 1945, with the continued increase in business activity and the rise in prices, there has undoubtedly been an increase in private debt. Bank loans which amounted to 21.4 billion dollars on Dec. 31, 1944, were at 33.3 billions on June 30, 1947. Corporate bond debt had also increased, as well as the debts of firms borrowing for reconversion, for postwar expansion or merely for higher price inventories. Despite this increase, it is safe to say that the burden of private debt payments in 1947 was much lighter than it had been in 1929. Of course, during the depression years, especially the earlier ones, when debt totals and interest rates were still almost up to the 1929 level, the burden of interest payments was very heavy.

Debt Caused by Hope of Profit. The opinion is quite generally prevalent that the assumption of debt is the result of hard times. Such indeed is quite often the case, as anyone can readily illustrate from personal experience and observation. Nevertheless, the assumption of debt on a large scale is not the result of hard times, but of good times. It results from people having conceived from past and contemporary events expectations of large possible future profits. When businessmen or farmers are optimistic about the future, they borrow to start or expand their enterprises.

The great bulk of private debt is contracted for business, not consumption purposes. There are innumerable examples. For instance, between

1913 and 1929 urban mortgage debts increased from about 5 billion to 32 billion dollars. In this period, the ownership of urban real estate was generally profitable, quite often exceedingly profitable. Profit seekers with but limited funds of their own could borrow the greater part of the cost of a building site as well as the cost of constructing an apartment house or hotel or office building thereon. They could pay regular interest rates on the borrowed funds and make more than regular interest rates on the *equity* representing their own investment. Promoters and entrepreneurs were therefore eager to borrow for such purposes; and, judging from previous experience alone, lending for such purposes was considered relatively safe. This was partly due to the fact that during these years the population of our cities was increasing very rapidly, and, with the exception of the brief 1920 to 1921 depression, business activity was at a high level. We have already called attention to the great upturn in bank loans since 1945, which also illustrates the tendency of debt to grow in a time of prosperity.

Agriculture also well illustrates how prosperous times are times when debts increase. A certain Iowa farmer in 1918 owned, free of debt, a farm which six years earlier had a market value of \$20,000. Because of increased prices of farm products, he was able in 1918 to sell this farm for \$40,000, receiving \$10,000 in cash and a mortgage note, representing debt, for \$30,000. Largely by such procedure farm-mortgage debt considerably more than doubled between 1910 and 1920.

There are a number of reasons farm debt did not grow appreciably in the years immediately following the Second World War (there was a slight upturn of 160 million dollars in farm-mortgage debt during 1946), despite high prices, rising land values, and great activity in the farm real-estate market. One is undoubtedly the memory of what happened in 1920 to 1921, when farmers who had borrowed very large amounts were caught by the rapidly falling price level and rendered unable to meet their mortgage payments. Second, the tremendous farm income made it possible for farmers retaining their farms to pay off mortgages as fast as those buying farms took out new mortgages. Then farmers' large cash holdings enabled them to buy machinery and equipment without borrowing. Because of the extremely low farm-debt level, farmers are in much better condition to weather a price break than they were after the First World War.

AMOUNT AND DISTRIBUTION OF FARM DEBT

The farm-credit and farm-debt problem will be subdivided for discussion into (1) long-term mortgage credit and (2) short- and intermediate-term credit. In amount outstanding long-term credit is by far the more important. Short-term credit, nevertheless, presents at times very acute

problems, and within a given period of time the new short-term loans exceed the new long-term loans which are made.

Amount of Mortgage Debt. The volume of farm mortgage debt at the beginning of selected years since 1910 was approximately as shown in Table 56.

TABLE 56. FARM-MORTGAGE DEBT AND ITS RELATION TO VALUE OF FARM REAL ESTATE

Year	Debt (billion dollars)	Debt as percentage of farm real estate value
1910	\$3.208	9.5
1920	8.444	11.8
1930	9.631	20.0
1935	7.786	23.3
1940	6.586	19.5
1945	4.880	10.5
1946	4.730	9.0
1947	4.890	8.3

SOURCE: Figures for 1940 and following years derived from *The Balance Sheet of Agriculture—1947*, U.S. Department of Agriculture. Earlier figures from BAE.

As the values of farm land declined through the twenties and early thirties, the ratio of mortgage debt to value increased, and though the value of debt declined from the 1930 peak, values declined still faster till 1935. Thereafter while debt reduction continued, values started to rise so that by 1940 the ratio of debt to value was down. With the great rise in land values thereafter and continued repayment of the debt, the ratio of mortgage debt to value in 1947 was probably the lowest in modern history.

Sources of Farm-mortgage Funds. Since the days of the First World War there have been great changes in the sources of farm-mortgage funds. In 1917 all such loans were made by private individuals, banks, or life-insurance companies. The following year after the establishment of the Federal land-bank system (to be described on pages 564-565), these banks began making loans in a small way, but rapidly increased their business so that by the mid-twenties they had become among the principal holders of farm mortgages, with over a billion dollars' worth outstanding. The life-insurance companies also increased their farm mortgages to over 2 billion dollars. With the onset of the depression, private mortgage holders began to foreclose in great numbers. Thousands upon thousands of farmers were forced off their farms completely or became tenants on the land they had owned. Foreclosures were so numerous

that farmers in Iowa and other states took the law into their own hands and forcibly prevented sheriffs' sales of farm property.

One of the first acts of the Roosevelt administration was to secure the passage of legislation liberalizing the terms of land-bank loans and to make possible Land Bank Commissioner (later Federal Farm Mortgage Corporation) loans on risks the land bank would not accept. In 1934, the land banks increased their mortgages outstanding from 1.2 billion dollars to 1.9 billions, and the Land Bank Commissioner loaned 550 million dollars to the agencies taking mortgages over from private holders on terms which enabled the debtors to hold on. These easier terms and the rise in farm income and prices which began in 1933 put an end to the wave of foreclosures and left the Federal government as the principal farm mortgagor. By 1940, 42 per cent of the farm-mortgage debt was still held by the Federal government and 35 per cent by individuals. With the coming of farm prosperity, the Federal government's position

TABLE 57. FARM-MORTGAGE DEBT: PERCENTAGE HELD BY MAJOR LENDER GROUPS, UNITED STATES, JANUARY 1, 1915 TO 1922 AND 1940 TO 1947

First World War and Postwar

Year	Total debt	Federal land banks	Federal Farm Mortgage Corporation	Farmers' Home Administration	Life-insurance companies	Commercial banks	Individuals and others
1915	100.0	....	....	...	13.4	15.0	71.6
1916	100.0	....	....	...	14.5	14.8	70.7
1917	100.0	....	....	...	14.8	16.0	69.2
1918	100.0	0.6	....	...	14.6	15.4	69.4
1919	100.0	2.2	....	...	14.3	14.4	69.1
1920	100.0	3.5	....	...	11.5	14.3	70.7
1921	100.0	3.4	....	...	11.8	14.2	70.6
1922	100.0	4.0	....	...	13.4	14.4	68.2

Second World War and Postwar

1940	100.0	30.5	10.8	0.6	15.0	8.1	35.0
1941	100.0	30.4	10.6	1.1	15.8	8.4	33.7
1942	100.0	29.9	10.1	1.9	16.9	8.5	32.7
1943	100.0	29.4	9.3	2.8	17.9	8.2	32.4
1944	100.0	27.4	8.1	3.3	18.6	8.5	34.1
1945	100.0	24.8	7.1	3.7	19.1	9.2	36.1
1946	100.0	22.8	5.1	3.9	18.7	10.7	38.8
1947	100.0	20.0	3.0	3.9	18.2	14.0	40.9

SOURCE: *Balance Sheet of Agriculture, 1947*, U.S. Department of Agriculture (mimeographed), Table 16.

in the farm-mortgage field declined as banks and private mortgagors moved back in. The figures are presented in Table 57. (The Farmers Home Administration mortgage system will be explained on page 573.)

Amount and Distribution of Short- and Intermediate-term Credit.

The expression *intermediate-term credit* in agriculture is used to refer to a type of credit running in general from about six months to three years and secured by liens on livestock or crops in the process of production or marketing, rather than by real-estate mortgages. There is no sharp demarcation between short-term and intermediate credit and hereafter in this discussion the term *short-term credit* will be applied to all types of agricultural credit other than long-term mortgage credit except when some particular type is differentiated for the sake of emphasis.

Four general sources of such "personal or short-term" debts may be distinguished at the present time: (1) commercial banks, (2) government-sponsored agencies such as the Farm Credit Administration and government-operated institutions such as the Farmers Home Administration, (3) merchants, and (4) others, the last named being usually relatives or friends of the borrowers. In regard to the credit supplied by only the first two of these four sources is there information of reasonable accuracy concerning the amount outstanding.

For selected recent years the total amount of short-term, or, as the BAE calls it, "non-real-estate," credit outstanding, held by Federal agencies or commercial banks is shown in Table 58.

Further, "it has been roughly estimated that in addition to the non-

TABLE 58. NONREAL-ESTATE LOANS TO FARMERS*

Date	Total Outstanding (in millions)
1935	
Jan. 1.....	\$1,197.5
July 1.....	1,439.4
1940	
Jan. 1.....	1,983.0
July 1.....	2,126.5
1945	
Jan. 1.....	2,302.0
July 1.....	2,130.0
1946	
Jan. 1.....	1,949.4
July 1.....	2,133.0
1947	
Jan. 1.....	2,024.3

SOURCE: *Balance Sheet of Agriculture, 1947*, p. 55.

* By banks or Federal agencies.

real-estate debt owed to these principal lending institutions, farmers owed about 1½ billion dollars on January 1, 1947 to such creditors as merchants, dealers, insurance companies and individuals." Thus the total on that date was approximately 3.5 billion dollars, with nonbank, non-Federal-agency debt being almost as large as that held by these institutions.

Various parts of the nation differ greatly, not only in sources from which short-term credit is supplied, but also in the extent to which short-term credit is used. In general the practice of paying cash for purchases rather than using credit is most common where farmers have rather continuous incomes, as from butter and egg sales. Credit and borrowing for current purchases are most prevalent where one-crop farming, with most of the money income at one time of the year, prevails. The cost of short-term credit will be discussed later in this chapter.

A special form of merchant financing is furnished by sales agencies furnishing credit to growers in consideration of contracts to handle the selling of the crop when it has been produced. In times past, store credit to cotton growers in the South has been largely on that basis. Livestock commission firms have furnished credit on such an arrangement. City grain commission firms have long acted as bankers to country grain dealers. Also important, but to a declining degree, have been loans by broker-shippers to growers of fruits and vegetables in areas specializing in the production of these products.

Merchant, store, or broker financing has been the object of a good deal of resentment on the part of those receiving it. In the South merchant credit has been used to tie sharecroppers to a particular plantation and in the fruit and vegetable areas to tie a producer to a particular broker. The rates of interest have been high, especially in the South (there was justification for higher rates in the South than elsewhere but not for rates as high as actually were charged), and the rates were not the whole story. When a storekeeper or plantation owner (often the same person) had a sharecropper in debt, he could and did charge him very high prices for whatever was bought. With the growth of Federal credit agencies and higher incomes, the old merchant credit "furnish" system is probably on the wane.

Likewise the vegetable grower indebted to his broker may very likely find himself paying excessive brokerage fees. On the other side, it must be pointed out that in some instances dealers have fostered the development of new crops in an area, as in the case of Colorado Mountain lettuce.

Aside from banks the first special financial institutions for short-term and intermediate agricultural credits to expand to any great extent were livestock loan companies. Though some of these developed before 1900,

they made an especially rapid growth during and immediately following the First World War but have since declined in importance. The management of these companies usually has been closely associated with the livestock commission business and the meat-packing business, but ultimately banks have supplied much of the money. Loans by livestock loan companies have been practically limited to those secured by cattle and sheep, with the former by far the more important. Cattle loans usually have been for two purposes: (1) breeding and growing cattle on the ranges, and (2) fattening beef steers in the Corn Belt, though loans also have been made on dairy herds.

In addition to these private agencies, the Federal government has a fairly elaborate short-term credit organization, or group of organizations, which we shall now discuss.

GOVERNMENT-SPONSORED AGRICULTURAL-CREDIT AGENCIES

Although farmers still obtain most of their credit from other sources, an increased importance has been assumed since 1933 by the agricultural-credit agencies sponsored or controlled by the Federal government. For that reason and for the following additional reasons we shall give special attention to these agencies: (1) Many features of credit in general are well illustrated by them. (2) Because of certain cooperative features possessed by them, it is more important for the borrower to understand their operation if he borrows from them than is the case as to other agencies from which he may borrow. (3) The fact that they are to some extent subsidized by the government is of interest to all citizens.

In May, 1933, the Farm Credit Administration (FCA) was created to supervise and coordinate the government-sponsored or operated agricultural-credit agencies which were dealing in adequately secured credit. Two of these agencies, the Federal land banks and the Federal intermediate-credit banks had been in existence for sixteen and ten years, respectively. The banks for cooperatives and the production-credit system were created at the time when the FCA was established. In furnishing credit these four principal subdivisions of the FCA operate as follows:

1. *Federal Land Banks.* These are twelve in number, each serving a particular district, or part, of the United States. They make long-time loans secured by mortgages on farm real estate. In making such loans they operate almost entirely through *national farm-loan associations*.

2. *Federal Intermediate-credit Banks.* These are the same in location and number as the Federal land banks. They supply short-term and intermediate credit to other types of credit agencies, which in turn furnish it to farmers, but they do not make loans directly to individual farmers.

3. *Banks for Cooperatives.* There is a Central Bank for Cooperatives at Washington, D.C., and a regional bank in each of the twelve farm-credit districts. These make loans only to cooperative agricultural marketing, purchasing, and business-service associations.

4. *Production-credit Corporations and Production-credit Associations.* There are also twelve production credit corporations, one in each of the twelve districts and in the same locations as the other divisions of the FCA. These do not make loans in the ordinary usage of that expression. Instead, they assist in organizing production credit associations, subscribe to part of the stock of such associations, and supervise their operations. Of the production credit associations, there were 504 in active operation in 1947. The territory served by one association usually includes a number of counties. These associations make short-term loans of funds to individual farmers to be used for production purposes. The funds lent by the production credit associations are secured through the Federal intermediate-credit banks.

In each of the twelve farm-credit districts the four types of credit agencies just named have separate officers and operating staffs. All those in each district are, however, under one board of directors for that district and are under the supervision of a *general agent*, who serves as a personal representative of the governor of the FCA for the purpose of coordinating the operations of the four component units.

Over all these regional Federal credit agencies is the FCA at Washington, D.C., created in 1933. This has a single administrative head, known as its *Governor*, appointed by the President of the United States and until late 1939 directly responsible to him, but now responsible to the Secretary of Agriculture. The Governor is assisted by four commissioners, as follows: (1) the Land Bank Commissioner, (2) the Intermediate Credit Commissioner, (3) the Cooperative Bank Commissioner, and (4) the Production Credit Commissioner. The Farm Credit Act provides that these commissioners shall perform "such duties as may be assigned to them by law or by the Governor of the Farm Credit Administration."

The origin, services, and operating methods of the several divisions of the FCA will be more fully described next.

THE FEDERAL LAND BANKS

The twelve Federal land banks were established in 1917, in accordance with the Federal Farm Loan Act, enacted the previous year. They were under the administrative control of a Federal Farm Loan Board until 1933, when that was abolished. The establishment of these banks resulted from the belief that the long-term credit needs of agriculture were not adequately served by existing financial institutions. It was believed

(1) that rates of interest plus additional commissions and fees required to be paid on agricultural mortgage loans were often much higher than basic interest rates justified; (2) that loans, which were generally made only for from three to five years (though generally renewed), were not definitely available for periods of time as long as the needs of farmers required and the character of the security justified and that renewal costs involved unnecessary expenses; (3) that the method of repayment in one lump sum which was commonly required (though partial payments were commonly received) did not make adequate and desirable provision for the gradual reduction of the debt; (4) that, because commercial banks must keep their funds liquid and could not properly lend to any great extent on long-term mortgages, adequate mortgage credit was not available in many sections of the country; (5) that farming was such a basic essential industry of the country that the government should do something to promote its welfare; (6) that the inaugurated system would promote general cooperation among farmers and would overcome the difficulty which farmers as small operators had in securing credit from large-credit resources.

Sources of Capital and Loan Funds. Each of the twelve Federal land banks was originally capitalized at \$750,000, a total of 9 million dollars for the entire system, practically all of which originally was paid in by the Federal government. It was provided, however, that the funds to be lent were to be obtained primarily from the sale of bonds, and that remains the method used. Mortgages are secured against the farms on which loans are made. These mortgages are deposited with a farm-loan registrar, an officer of the Federal government, as security for bonds which are then sold to investors in the financial centers. From the funds obtained from the sale of bonds, additional loans may then be made, resulting in more mortgages, to furnish security for more bonds, to be sold to obtain more loan funds, and so on. A limit is placed on this process by the provision that the capital and surplus of each bank must not be less than 5 per cent of the bonds outstanding, or, in other words, a bank may not have bonds outstanding for more than twenty times the capital and surplus of the bank. All Federal farm-loans bonds and all interest therefrom are exempt from all Federal, state, and local taxes. Originally each of the twelve Federal land banks issued its own bonds. Now all the bonds have been consolidated into one issue.

To obtain loans under the law, farmers originally were always required to become members of local farm-loan associations, and except under special circumstances, which will be later mentioned, they still must do this. Each such association must consist of not less than ten or more farmers applying for an aggregate of \$20,000 or more in loans. In 1947 there were about 1,300 such associations.

The borrower must give a first mortgage to the local association for his loan. The local association must endorse this loan and send it to the district land bank. The borrower must subscribe for stock in the local association to an amount equal to 5 per cent of his loan, and the local association in turn must subscribe for stock in the district land bank to an amount equal to 5 per cent of loans granted. The farmer who is granted a \$1,000 loan, therefore, subscribes to \$50 of stock in the association. If he decides to buy this stock out of the proceeds of the loan he, therefore, receives \$950 in cash and a claim to stock in his local association for the other \$50. This stock, however, is held by the association as partial security for his loan, and the district land bank in turn holds the stock of each of the local associations in it as partial security for all the loans made to farmers of that association. This procedure causes each farmer to be responsible for the loans made to other members of his local association to the extent of 5 per cent of his own loan. When the loan is fully paid, the stock is redeemed, though in associations whose capital has become impaired the redemption is delayed until the extent of the impairment is determined and then is in proportion to losses, if any.

By 1931, farmer borrowers through their associations had acquired 98 per cent of the stock of the land banks, redeemed from the Federal Treasury. The bad credit conditions of the depression, the consequent inability of the banks to sell their bonds, and the provision of the Emergency Farm Mortgage Act of 1933 that permitted the waiving of payments on principal for five years, made it necessary for the government to invest, beginning in 1932, 314 million dollars in the land-bank system. As prosperity returned, the banks were able to retire the government capital investment, and now the banks are wholly owned by the farmers' cooperative loan associations, though they are still supervised by the FCA.

National Farm-loan Associations. There were as many as 4,000 of these local associations in existence in the early 1930's. As a result of the collapse of land values during the depression, the capital of many of them became impaired. In order to strengthen the system, the FCA in 1943 undertook a policy of getting the associations to consolidate, so that the number was reduced to 1,280. The FCA is also turning the management of loans and records over to the associations as part of its general policy of building up the cooperative features of these farmers' associations. They are now all solvent, building up reserves, and in the year July 1, 1946, to June 30, 1947, paid out \$2,841,891 in dividends to their members.

Interest Rates, Amortization, and Dividends. The law provides that the maximum interest rates charged farmers on Federal land-bank loans

may not exceed 6 per cent. It also provides that the farmer may not be charged at a rate more than 1 per cent higher than the rate at which the last land-bank bond issue was sold, except with the approval of the Governor of the FCA. At the end of 1947 the rate on land-bank mortgages was 4 per cent.

The basic Farm Loan Act provides that loans be made on an amortization plan of repayment and run not less than five nor more than forty years. By the amortization plan of repayment is meant that the borrower pays off the debt in installments throughout a period of years, each payment representing interest since the last payment and something on the principal. As the principal is constantly reduced, each payment represents less paid as interest and more on the principal. Under this plan, with an interest rate of 4 per cent and with equal annual payments at 5.4 per cent of the amount borrowed, the entire loan is extinguished in about thirty-five years. More rapid payment is permitted.

From their earnings the land banks are required to accumulate certain reserve, after which they may pay dividends. Between 1931 and 1944 no dividends were paid, first because of the losses suffered and later in a desire to rebuild the banks' capital. By 1947, all the banks were on a dividend-paying basis and paid out a total of \$9,662,573 to their member associations, which formed the basis for the dividends paid by local associations just mentioned. These dividend payments were the source of a good deal of controversy in the spring of 1948. The dividends to the associations were used in large part to pay off the government's capital investment in the banks. The government received no interest on what it borrowed to obtain the funds it invested. Then the profits made by using the government's money were used to pay the government back. Many Congressmen thought that the government by this process made an unjustified subsidy to the farmers who own stock in the loan associations. They got ownership free and clear without paying interest, because they were enabled to make profits by using government money without cost to themselves.

Loan Limits. Loans may not be made by the Federal land banks for an amount in excess of 50 per cent of the appraised value of the farm land plus 20 per cent of the value of the insurable improvements thereon. Under the original act (1916) no loan could be for more than \$10,000, but the maximum was increased by Congress in 1923 to \$25,000, and in 1933 to \$50,000, with the provision that each loan in excess of \$25,000 must have the specific approval of the Lank Bank Commissioner.

The FCA appraisers try to set a "normal" value on the farms which are up for mortgage. It may be of interest to know in some detail how this is done, so we shall quote from the *Annual Report of the Farm Credit Administration 1946-1947* (pages 33 and 34).

This value, which is called the "normal agricultural value," is defined as the amount a typical purchaser would, under usual conditions, be willing to pay and be justified in paying for the property for customary agricultural uses, including farm-home advantages, with the expectation of obtaining average production and of receiving normal prices for farm commodities. Normal farm-commodity prices are those which may be expected to prevail on the average over a long period of years in the future. As a starting point in developing those prices, the period 1909-14 has been taken as representing normalcy, insofar as a general level of farm-commodity prices is concerned. Adjustments from this general level then are made in the prices of individual commodities, increasing those which have assumed a more favorable price position than they occupied during the 1909-14 period and reducing those which have attained a less favorable position. Adjustments for outlook also are made in the case of particular commodities for which the supply, demand, or foreign trade situation appears to justify prices different from those prevailing in the past. In using normal farm commodity prices, differences between actual prices received by States, regions, or areas are calculated, taking into account various market factors such as quality, and surplus and deficit situations. The prices thus arrived at are applied to individual farms, with adjustments for any local variations in such factors as quality and freight differentials. In general, the prices actually received for farm commodities in the period just prior to World War II were approximately the same as those used in appraisals.

It will be noted that the quotation implies that after the Second World War began, this method of estimating prices and value ceased to work, which is not surprising, considering the violent price changes which followed.

This method has resulted in lower appraisals than the current market might seem able to support, and this is one of the reasons borrowers have recently turned to other lenders than the land banks. Whether the land banks are justified in this conservative course of valuation time alone will tell.

This matter has been gone into at this length because it illustrates how difficult it is to project past economic trends into the war and postwar periods and because it should be noted that the attempt to associate normality with any particular past period is probably mistaken.

Federal Farm Mortgage Corporation and Land Bank Commissioner Loans. Because of the inability of the Federal land banks to sell their bonds advantageously at the time, there was set up in 1934, by act of Congress, the Federal Farm Mortgage Corporation. It was capitalized at 200 million dollars, the funds being supplied by the Reconstruction Finance Corporation, and it was authorized to issue bonds up to a maximum of 2 billion dollars. These bonds were guaranteed absolutely as to principal and interest by the Federal government, whereas the

regular Federal land-bank bonds are not. During several years it furnished funds to the Federal land banks by selling its own bonds and buying those of the Federal land banks or by exchanging its bonds directly for those of the Federal land banks.

The Federal Farm Mortgage Corporation also supplies funds to the Land Bank Commissioner for making Commissioner loans. Such loans differ from regular Federal land-bank loans in a number of respects, including the following: (1) they may be made on second mortgages instead of only on first mortgages; (2) they may be made up to 75 per cent of the appraised value of the farm property offered as security; (3) such a loan to any one farmer may not exceed \$7,500; (4) interest rates on Land Bank Commissioner loans are 1 per cent higher than those on regular Federal land-bank loans; (5) such loans may be partly secured by chattel mortgages and are usually for shorter periods of time than regular land-bank loans. Loans which are partly secured by chattel mortgages have a maximum limit of ten years.

With the return of normal, or better than normal, conditions, the need for Land Bank Commissioner loans, which were of an emergency nature, declined, and the FCA's power to make such loans expired on June 30, 1947. At the peak date, Dec. 31, 1936, there were 455,000 Commissioner loans to the value of 837 million dollars outstanding, the greater part of which, it will be seen by referring to page 560, had been made in 1934. By June 30, 1947, there were 123,000 loans outstanding, with a face value of 123 million dollars. On the same date there were 332,000 land-bank loans outstanding, with a face value of 910 million dollars, as contrasted with 640,000 loans with a book value of 2.1 billion dollars on Dec. 31, 1936.

In addition to the Commissioner loans and the remission of principal payments authorized in 1933, Congress also during the emergency lowered the interest rate on land-bank loans below the contract rate and permitted the banks to make loans direct to farmers in areas where local associations were unable to.¹

FEDERAL INTERMEDIATE-CREDIT BANKS

Origin, Capitalization, and Sources of Loan Funds. Seven years after the passage of the Federal Farm Loan Act, Congress enacted the Agricultural Credits Act of 1923, the most important provisions of which were those establishing the Federal intermediate-credit banks. These banks, twelve in number, were established in connection with the

¹ The Federal Farm Loan Act of 1916 also authorized the establishment of joint-stock land banks, which were private banking institutions. Following 1929 many of them failed, and since that date, therefore, they have gradually been liquidating, or going out of business; by June, 1947, the liquidation was almost complete.

Federal land banks and in the same locations. They were placed under separate managers, but under the same boards of directors. They resemble the land banks in some ways, but in others are entirely different.

The capital of the intermediate-credit banks is and always has been entirely supplied by the Federal government. The authorized capital of each of the banks originally was put at 5 million dollars, only part of which was paid in, but during the reorganization of the Federal agricultural-credit agencies in 1933 and 1934 this was increased. In 1947 the twelve banks together had a paid-in capital of \$60,000,000 and earned a surplus of \$23,952,676. Considerably over half of this net worth was invested in government bonds.

Funds to be lent consist in part of the paid-in capital and in addition are provided by the sale of debentures. Such debentures are in fact short-term notes, which are secured by chattel mortgages, warehouse receipts, shipping documents, and the like. This collateral is furnished originally by the borrowers from the financing institutions which rediscount with the Federal intermediate-credit banks. The debentures usually run for from three months to one year. Like the bonds of the Federal land banks, these debentures and the income from them are tax exempt. Debentures outstanding June 30, 1947, amounted to \$355,750,000.

Interest and Discount Rates. Interest and discount rates of the Federal intermediate-credit banks may not—except with the approval of the Governor of the FCA—exceed by more than 1 per cent per year the rate borne by the last preceding issue of debentures issued by them. In 1947 their debentures were being sold at a yield or interest rate of about 1 per cent, and loans and discounts to borrowers were being made at a rate of $1\frac{1}{2}$ per cent.

Kinds of Credit Furnished. The Federal intermediate-credit banks at no time have made loans to individual farmers. Originally they made loans to, and discounted paper offered by, cooperative marketing associations, for the most part secured by warehouse receipts, shipping documents, and chattel mortgages. They also discounted, as they still do, the notes, drafts, etc., offered by a variety of other financing agencies if the proceeds of such paper were used in the first instance for agricultural production or marketing purposes, or for the raising, breeding, fattening, or marketing of livestock. Since the establishment of the banks for cooperatives, the intermediate-credit banks have practically discontinued supplying loans or discounts directly to cooperative marketing associations. Instead they serve these indirectly through the banks for cooperatives.

On June 30, 1947, the outstanding loans and discounts of the twelve Federal intermediate-credit banks totaled \$403,670,091. Of this total

\$10,329,895 consisted of discounts extended to the banks for cooperatives; \$352,557,735 of loans and discounts extended to production-credit associations; and \$40,782,461 of credit extended to other financing agencies such as agricultural-credit corporations, livestock loan companies, and commercial banks. No loans or discounts may be for a longer period than three years. Most of them are for much shorter periods.

Banks for Cooperatives. The banks for cooperatives were established by the Farm Credit Act of 1933. They are thirteen in number, one in each of the twelve farm-credit districts, and a central bank at Washington, D.C., the latter being established to make loans to large cooperative associations operating over wide areas. In 1947 the total paid-in capital supplied by the government to these banks was 178.5 million dollars. In addition, borrowers must subscribe to the capital of the banks to the extent of 5 per cent of operating capital and facility loans granted to them and 1 per cent of the amount of commodity loans. This furnishes but a very small part of the total capital of the banks.

The Farm Credit Act of 1933, as later amended, specifies that to be eligible to borrow from a bank for cooperatives an association must be a cooperative operated for the mutual benefit of its members, in which farmers act together in doing one or more of the following:

1. Processing, preparing for market, handling, or marketing farm products.
2. Purchasing, testing, grading, processing, distributing, or furnishing farm supplies.
3. Furnishing farm business services.

The law further provides that to be eligible an association may not do more business with nonmembers than with members; and it must provide either that no member may have more than one vote in the affairs of the association because of the amount of stock or membership capital he may own therein, or it must limit its dividends on stock or membership capital to 8 per cent a year. The banks for cooperatives require that at least 90 per cent of the voting mediums of a borrowing cooperative be held by the producer members.

Loans by the banks for cooperatives are of three general types.

1. Commodity loans, which are short term and are secured by first liens on farm products or supplies, approved as collateral by the Cooperative Bank Commissioner.

2. Operating-capital loans, which typically are for the purpose of supplementing the borrower's working capital. Though the law does not require specific collateral for such loans, liens on real estate, equipment, and inventories generally are taken.

3. Facility loans, which are made to finance or refinance the acquisition—by purchase or lease—of land, buildings, or other physical facilities. According to

law, such loans must be repaid in twenty years, but usually the schedule of repayments covers a period of less than ten years. All such loans are secured by liens on physical properties and may not be made for more than 60 per cent of the value of the collateral offered.

4. Loans based on the purchase programs of the Commodity Credit Corporation (CCC), of which more below. These are chiefly on wool and tobacco, and might be classed with the commodity loans under 1.

In June, 1947, the rates for loans of different types were: commodity, 1½ per cent; operating capital, 2½ per cent; facility, 3½ per cent; on loans supported by CCC documents, 1 to 1½ per cent.

Total loans outstanding by all the banks for cooperatives on June 30, 1947, were as follows:

Commodity.....	\$ 12,061,167
Secured by CCC documents.....	354,537
Operating capital.....	101,822,510
Facility.....	<u>40,820,466</u>
Total.....	\$153,058,680

The banks for cooperatives may rediscount their commodity loans with the Federal intermediate-credit banks, and a large part of these loans in the past have been rediscounted.

In addition to its lending facilities, the FCA maintains a Cooperative Research and Service Division, whose functions are well described by its name.

PRODUCTION CREDIT

Production-credit Corporations and Associations. Two days after the Farm Credit Act of 1933 became a law, Governor Morgenthau of the FCA in discussing it said:

In the belief that the direct loan is a hazardous and demoralizing form of credit and that the control of credit conditions ought to be, so far as possible, in the farmers' own hands, special provision has been made in the Farm Credit Act for giving encouragement to the farm co-operative method of borrowing.

The new institutions created to care for such cooperative credit for production purposes are the production-credit corporations and production-credit associations.

In each Federal farm-credit district, the act established a production-credit corporation, all the capital stock of which was subscribed by the United States. The total paid-in stock in the twelve corporations in 1947 was 93 million dollars. These corporations are authorized to subscribe for nonvoting preferred (Class A) stock in local production-credit associations to an amount equal to approximately 20 per cent of the loans made or to be made by each such association, as estimated by the

corporation. Each production-credit association must consist of ten or more farmers desiring to borrow from the association, and the borrowers must each subscribe to common (Class B) stock in the association in an amount equal to 5 per cent of their borrowings. Loans are made to borrowers by each association for purposes such as the purchasing of livestock, feed, seed, machinery, and fertilizer, and the hiring of labor, and are usually secured by chattel mortgages. Loans must mature within one year and may not be extended beyond two additional years. Production-credit associations may borrow from and discount with the Federal intermediate-credit banks. The associations are operated under the direction of their boards, but are subject to the provisions of the act and such rules and regulations as the Governor of the FCA may prescribe under authority vested in him by the act.

The policy of the FCA has been to leave more and more responsibility in the hands of the associations and to encourage their members to buy up the stock in the local associations originally held by the production-credit corporations, so that farmers will ultimately be sole owners of their local credit cooperatives. On June 30, 1947, of \$82,941,019 of capital stock in the 504 active local production-credit associations, \$40,513,000 worth of the Class A stock was owned by the production-credit corporations, \$8,290,269 Class A stock by others, and \$34,137,750 Class B stock by the individual members. Loans outstanding amounted to 362 million dollars, at a rate of 4½ per cent.

Loans are carefully budgeted, and disbursed "in installments as needed by the member and repaid when farm products are sold. Below is a typical example showing how a farmer uses a budgeted loan and how

Date	Purpose of advance or source of repayment	Advanced	Amount repaid	Balance out- standing	Days out- standing	Interest at 4½%
Mar. 12.....	3 cows.....\$540					
	Labor..... 60					
	Interest..... 100	\$ 700	....	\$700	64	\$ 5.52
May 15.....	Labor..... 50					
	Fuel..... 50	100	....	800	31	3.06
June 15.....	Feed..... 75					
	Fencing..... 25	100	....	900	11	1.22
June 26.....	8 hogs.....	....	\$ 400	500	36	2.22
Aug. 1.....	Taxes.....	100	....	600	45	3.33
Sept. 15.....	Interest..... 100					
	Labor..... 100	200	....	800	86	8.48
Dec. 10.....	5 calves.....	....	250	550	35	2.37
Jan. 14.....	11 hogs.....	....	550			
Total.....	.....	\$1,200	\$1,200	....	..	\$26.20

it influences the amount of interest he pays, which is computed on the basis of the actual number of days each dollar is outstanding.”²

OTHER GOVERNMENT AGENCIES FURNISHING CREDIT TO AGRICULTURE

The Farmers Home Administration. The Farmers Home Administration was created in 1946 by the merger of the Farm Security Administration (itself originally the Resettlement Administration) and the Emergency Crop and Feed Loan Division of the FCA.

The FHA “provides a system of agricultural credit to farmers who are not able to get the credit they need anywhere else. It offers the family-type operator of limited resources, whose assets and experience do not qualify him for the ordinary types of credit, an opportunity to get on his feet. Loans are supplemented by supervision where needed to assure successful farming and thus protect the Government’s interest.”³

This indicates the division of function between the FCA and the FHA. The farmer who is already established or who has sufficient assets to obtain commercial credit can go to the FCA or to a private lending agency. The farmer who is not in this class but wants to get into it, goes to the FHA.

Before discussing the current loan program of the FHA, a word should be said about the history of its predecessor agencies. The Resettlement and Farm Security Administrations were the relief agencies for poor farmers and farm workers, displaced and made destitute by the Great Depression. They made rehabilitation loans, of which a surprisingly large number were repaid, as well as outright grants. They set up labor camps (now sold to private owners) and health services for those who had no place to live and no medical care. The Resettlement Administration in particular indulged in a number of experiments by way of subsistence and cooperative farming that some people thought wild and woolly and others thought radical. It is not surprising, considering the atmosphere of desperation and the feeling that anything was worth trying that pervaded the country from 1932 to 1935, that unorthodox programs were occasionally instituted. The main point to keep in mind, as the memory of that unhappy time recedes, is that the Resettlement and Farm Security Administrations made living tolerable—and possible—for great numbers of our citizens who otherwise would have had no other recourse.

At present the FHA makes loans under three separate programs and administers those provisions of the GI Bill of Rights under which money is loaned to veterans to purchase farms. These programs are listed as follows:

² *FCA Annual Report, 1946-1947*, p. 5.

³ *Report of the Secretary of Agriculture, 1947*, p. 111.

1. The farm-ownership program of the Bankhead-Jones Farm Act under which tenants, sharecroppers, farm laborers, and eligible veterans are given loans to establish themselves as owners. This act, intended as a contribution—and a very minor one at that, since in its ten years only 47,000 loans were made—to the solution of the tenancy problem has been almost dormant in recent years because the price of land was higher than the loan limits set by Congress. These limits were liberalized by the FHA Act of 1946 and in consequence activities were stepped up and 5,807 loans were granted in 1946–1947. Borrowers under the Bankhead-Jones Act work their farms under fairly close supervision by the FHA.

2. The FHA made 270,000 operating loans in 1946–1947, at 5 per cent interest, for the purchase of livestock, equipment, feed, seed, and other essential items. Borrowers under this program also are visited by FHA supervisors, who advise them in carrying out the practices or purchases for which the loan was made.

3. Under the Pope-Jones Act authorizing the water-facilities program, the FHA made 911 individual loans and 14 group loans in 1946–1947 in the 17 Western states and gave borrowers engineering aid in putting in or reconditioning wells, ponds, windmills, tanks and other facilities for farmstead and irrigation water.

Since 1918, Congress has authorized emergency crop, feed, and seed loans to farmers afflicted by plant diseases or natural disaster like the great droughts of 1934 and 1936. Presumably hereafter such loans will be made in a fashion similar to the regular operating loans of the FHA.

The reader will have noticed frequent reference in the discussion of the FHA to supervision of borrowers. This is largely due to the fact that FHA borrowers have often had little experience in operating farms and are thus especially needful of help. The success of this program in assisting people to stand on their own feet is, in part at least, indicated by the fact that 56 per cent of the active borrowers have been repaying their loans at a faster rate than due.

Rural Electrification. The Rural Electrification Administration lends money to farm cooperatives for the construction of power lines. The fiscal year ending June 30, 1947, was the most active in its history. Power systems financed by the REA brought service to about 270,000 new customers, bringing the total number of farms electrified up to over 3 million, or 61 per cent of all.

The Commodity Credit Corporation. The Commodity Credit Corporation, among other things, is the price-support agency of the Department of Agriculture. The CCC extends the loans on basic crops which are mandatory under the AAA Act, and on "proclaimed" crops whose price support is mandatory under the Steagall Act. Lending is not the only means of price support open to the CCC, but it is the only one which we shall discuss here. The CCC loans money directly, or it guarantees loans made by banks. Its loans are nonrecourse, which means that if the borrower cannot sell the commodity at a high enough price to repay the loan, the collateral becomes the property of the lender,

but the lender cannot claim the repayment of the full loan from the borrower. A CCC loan, in effect, is an offer from the government to buy a commodity at a stated price, regardless of what the market price may be. Therefore the producer always gets the support price at least.

In the mid-thirties and early forties, the CCC made or guaranteed immense loans on cotton, corn, and wheat. Thus, on Jan. 1, 1943, it had about 772 million dollars loaned and owned great stocks of commodities in addition. From 1944 to 1946, however, loan activities of the CCC were relatively minor because prices were high enough without any assistance from that agency. In the fiscal year 1947 its price support loans totaled 278 million dollars, including 85 millions lent on tobacco, 64 millions on potatoes, and 34 millions on peanuts. Loan on corn, wheat, and cotton, which used to make up 70 per cent of all loans, totaled only 78 millions.

While the CCC has lost money, which is probably inevitable in carrying out price-support programs, it suffered no such disastrous losses as did the Farm Board in 1930 and 1931, although its type of loan operation was essentially similar. The reasons for the difference are: First, the CCC had more money than the Farm Board. In fact, for the purposes at hand, its financial resources were unlimited, so that it could handle whatever supplies were put on the market which the Farm Board could not. Second, with so many other government agencies operating in various segments of the economy, public attention was not concentrated on the CCC, and was not so impatient for results, so the CCC could wait longer. Third, the CCC was assisted by the control over supply exercised by the AAA program. Fourth, the CCC operated mostly in a time of irregularly rising rather than violently falling prices. All this might not have been able to save it from being buried under the weight of the great stocks of wheat, cotton, and corn it acquired between 1937 and 1942, if it had not been able to hold them till the end of the war, when the tremendous demand for staples finally took effect and the CCC disposed of its stocks at substantial gains.

General Purposes of Agricultural-credit Legislation. The numerous provisions of the legislation relating to agricultural credit enacted in 1933 and thereafter, as summarized above, were for two major purposes, the one temporary and the other permanent. The temporary purpose was to carry agriculture through the severe financial crisis in which it was involved, to enable it to avoid wholesale bankruptcy until a time when prices of agricultural products might again reach such levels that debt charges could be met and widespread bankruptcy avoided. To the Federal land-bank borrowers, temporary aid was given in the form of reduced interest rates. In addition interest-free additions were made

to the capital and surplus of the land banks to strengthen their capital structures and to offset the losses in immediate revenue which resulted in part from Congress granting to borrowers the privilege of deferring principal payments on their loans. When this was done it was not intended as a permanent policy but merely as temporary relief to avoid widespread financial collapse and disorganization, and the subscriptions to the capital and surplus of the banks are regarded as recoverable investments. Other types of credit to farmers also were subsidized, largely by the government furnishing interest-free capital, to the extent of hundreds of millions of dollars, to the various lending institutions. Beyond question the emergency aid helped a great many hard-pressed farmers. Because much of this aid was granted at a time of grave financial emergency, the effects on competing financial institutions in large measure also were helpful rather than the reverse, and there was gain to the public in the avoidance of financial disorganization.

The second purpose of the government's program was to set up permanent agencies through which farmers could advantageously secure credit by cooperative action, but without appreciable government subsidy. It is far too soon to say that this object has been attained, yet the signs are encouraging. We have noted that the local loan associations now own the land banks and that the production-credit associations are in large part owned by their members. Further, private lending institutions have shown themselves able to take back a larger and larger share of the mortgage field, which would seem to show that the Federal subsidy is not so great as to be unfairly competitive.

The non-FCA agencies discussed stand on a different footing. The CCC is primarily a price-supporting agency, and the granting of credit on commodities is incidental to this object. Since that is its purpose, it would hardly be proper, even if it were administratively feasible, which it is not, to turn control of the CCC over to the farmers who are to benefit from its support program. Control of such an activity is clearly a function of government, not of an interested group. The REA cooperatives are largely self-controlled, have made good progress in paying off loans received from the government, and will probably continue to do so. The type of farmer to whom the FHA makes loans, because of his lack of training and experience, is one who needs supervision and assistance. It is the hope and aim of the FHA to raise him to the point where he will no longer need this and where he will be eligible for credit from one of the "regular" loan agencies, public or private.

DESIRABLE CREDIT PRACTICES

Advantage of Credit Dependent on Circumstances. From the point of view of both society and the individual, credit may be a great advan-

tage or an evil, depending on the circumstances and manner in which it is granted and used. Sound credit practices place the means of production into the hands of those best equipped to use them and give lenders a greater reward than if they had kept those means in their own immediate possession. Credit unwisely granted generally results in losses to lenders and does not benefit borrowers sufficiently to compensate for the losses suffered. A good credit organization minimizes the risk of lending. It reduces or holds to a minimum the cost of spanning the gap between the person who has saved funds which he himself cannot advantageously use and the person who has the opportunity and ability to use those funds in a more effective manner. A good credit system prevents overexpansion of credit, and the resulting inflation of prices, which later terminate in painful liquidation and hardship. It also prevents sudden or severe contraction of credit, which invariably brings with it great hardship. Borrowing, wisely done under favorable circumstances, makes possible a greater contribution to social welfare and greater business profits than could otherwise be realized. Unwise borrowing or that done under unfavorable circumstances makes inevitable greater losses than would otherwise be suffered. Accordingly, the use of credit may magnify either profits or losses. The incompetent and those unfortunately situated cannot make profits by borrowing. For the means of production, they are outbid by the more capable or the more fortunate to such an extent that they cannot cover their costs. To use credit successfully borrowers must neither overestimate the future nor be too timid.

Individual Credit Essentials. It is an old maxim that the ability to secure credit and proper extension of credit are based on three C's, *capital, capacity, and character*. For a limited class of purely business loans, in case capital or tangible security is definitely pledged in adequate amounts, the lender does not closely scrutinize character and business capacity. Usually, however, where credit is desired such complete security based on capital cannot be given as to eliminate the need for inquiry into character and capacity. The lender is and should be interested in knowing with the greatest certainty possible that he will get back what he lends, and of this he cannot be certain unless the borrower has business ability and capacity. Borrowers who expect proper credit consideration must take lenders into their confidence. This includes furnishing financial statements of assets and liabilities and profits and losses. Borrowers who are worthy of credit will find it distinctly to their advantage to furnish fully such information. Incidentally, for a borrower to be able to furnish such information is an indication that he follows good business methods.

Some Forms of Credit Costly. Risk and the cost of making and collecting the loan are far more important elements in the cost of credit than most people realize. These two elements account for most of the very high cost of pawnbroker's loans and other types of small loans to consumers. It is because of them that open-account credit of retail stores is expensive. Through a study by Cornell University covering a large number of merchants and dealers furnishing credit to farmers in New York, it was concluded that the average cost to the merchant of furnishing such credit was at the rate of 13.8 per cent. For general stores it was at the rate of 19.6 per cent per year. Accounting costs of keeping records of credit alone amounted for general stores to 6.5 per cent per annum on the credit extended. Additional cost elements for the stores were pure interest, or the cost of borrowing, cost of supplies, collection, and bad debts. All such costs tend ultimately to be paid by those to whom credit is extended. Installment-plan buying usually means that interest at the rate of from 15 to 40 per cent is paid on unpaid balances.⁴ Stores selling for cash can, and if wisely selected, do sell distinctly cheaper than those extending credit.

Not only short-time but also long-time credit may cost far more than nominal interest rates indicate. A report issued by the Division of Agricultural Finance of the U. S. Department of Agriculture in 1933 contains the following information:

The financing costs involved in purchasing a farm on credit may be considerably more than that represented by interest and other incidental fees. . . . Reports from 250 counties in 43 states indicate that an average of 14 per cent of the cash purchase price is added when the consideration includes deferred payments. The margin added for credit increases with the proportion of credit to the total consideration. Purchases with 50 per cent of the price paid in cash have an average increase of 10 per cent added to the price; farms purchased with 10 per cent or less paid down usually sell at prices 20 per cent or more above the cash price, and average 22 per cent. These results are based on estimates made by county officials and representative bankers on the basis of usual farm sales in their respective counties. Sheriff sales were not included.⁵

Credit Guides. In bringing this chapter to a close, we shall quote five recommendations about short-term agricultural credit made to farmers by the Extension Service of Cornell University:

1. Take an annual inventory and file a credit statement at a bank.
2. Talk plans over with your local banker or representative of the local production-credit association.

⁴ Based on a detailed report of the costs of different kinds of installment-buying credit, published in the magazine *Fortune*, January, 1933.

⁵ *The Agricultural Situation*, September, 1933.

3. Get in shape to pay cash and demand a discount.
4. When necessary to get short-term credit consult your banker.
5. Be more prompt in caring for obligations.

To these we shall add as applicable to both short-term and long-term credit the following:

1. Be honest with yourself and do not overestimate what you will be able to do with borrowed funds.
2. In contracting debts, do not overlook incidental charges other than the nominal interest rates.
3. Remember that a *thin equity* in property involves risk.
4. Credit is not universally either good or bad. It depends entirely on the circumstances. In some cases it is the most profitable of investments. In other cases it is the most flagrant of extravagances.

Questions and Problems

1. Summarize the changes which occurred between 1910 and 1947 in farm-mortgage debt, and account for these changes. Also explain the changes in sources of such credit during a recent ten-year period.
2. Distinguish five different sources of short- and intermediate-term agricultural credit, and compare them as to relative importance as of about the same date.
3. Explain the general organization of the Federal land banks and the method by which loans are made by them.
4. Compare the Federal intermediate-credit banks, the banks for cooperatives, and the production-credit associations as to (a) the organizations or persons to whom loans are made, and (b) the purposes for which loans are made.
5. Compare the lending rates of the Federal land banks, the Federal intermediate-credit banks, and the production-credit associations, and account for the differences.
6. To what extent are the Federal farm-loan associations and the production-credit associations cooperative associations?
7. What are the differences between FCA and FHA loans?
8. What do you consider the most important features of a good credit system? Why?
9. What are the purposes of CCC loans?

Suggested Readings

1. Earl S. Sparks, *Agricultural Credit in the United States* (1932), contains a well-balanced history of agricultural credit in the United States, as well as an excellent analysis of the theory of agricultural credit.
2. The FCA in Washington, D.C., and in each of the farm-credit districts will furnish (free of charge) circulars, annual reports, and other material describing the various government credit institutions. The locations of the district offices are: (1) Springfield, Mass.; (2) Baltimore, Md.; (3) Columbia, S.C.; (4) Louisville, Ky.; (5) New Orleans, La.; (6) St. Louis, Mo.; (7) St. Paul, Minn.; (8) Omaha, Neb.; (9) Wichita, Kan.; (10) Houston, Tex.; (11) Berkeley, Calif.; (12) Spokane, Wash.
3. *The Balance-Sheet of Agriculture*, an annual review published by the U.S. Department of Agriculture, shows changes in farm credit from year to year.
4. E. L. Butz, *The Production Credit System for Farmers* (1944), covers one important aspect of farm credit.
5. *The Agricultural Finance Review*, cited in Suggested Readings, Chap. 21.

CHAPTER 25

LAND UTILIZATION

For just about its first century no one was concerned about the land resources of this republic. Anyone who wanted land could have it. If an Eastern farm was worn out there was another one for the taking—in the West. By 1890, however, the time the frontier was closed, realization began to dawn that even for the United States nature's bounty was not unlimited. It began to be understood that the rapid bringing of land into use was uncontrolled and shortsighted exploitation. It was exploitation in that it encouraged "soil mining," the removal of timber and the turning of forest land into farms, the excessive grazing of semi-arid lands, and other unwise use of natural resources. Out of these facts came the *conservation movement*, started in the latter part of the last century. Second, the rush to put land into use was uncontrolled, not only in that it led to exploitation, but also in that lands were put to improper uses—uses for which they were fitted neither by physical characteristics nor by environment. The putting of land to uses for which it was physically unfit came forcibly to attention during the drought years, when a lot of what was good grazing land, mistakenly put into crops, blew away as dust storms. The Great Depression revealed how much land was put to uses for which its location was not suitable, as when good farm land was turned into vacant city lots. Third, a genuine land-utilization movement, such as has developed over the last two decades, which includes private land, would have been impossible were it not for the breakdown of the extreme individualism of earlier decades and the present willingness to increase social control over private economic activities.

The importance and necessity of a national land-utilization program was dramatically demonstrated during the great droughts of 1934 and 1936, when millions of tons of topsoil were lost in dust storms, highlighting the ravages of wind and water erosion which had seriously affected as much as 100 million acres. Since that time the conservation of our soil resources has been one of the major goals of our national agricultural policy.

In this chapter on land utilization, we shall be concerned primarily with rural uses of land, and particularly with agricultural uses, touch-

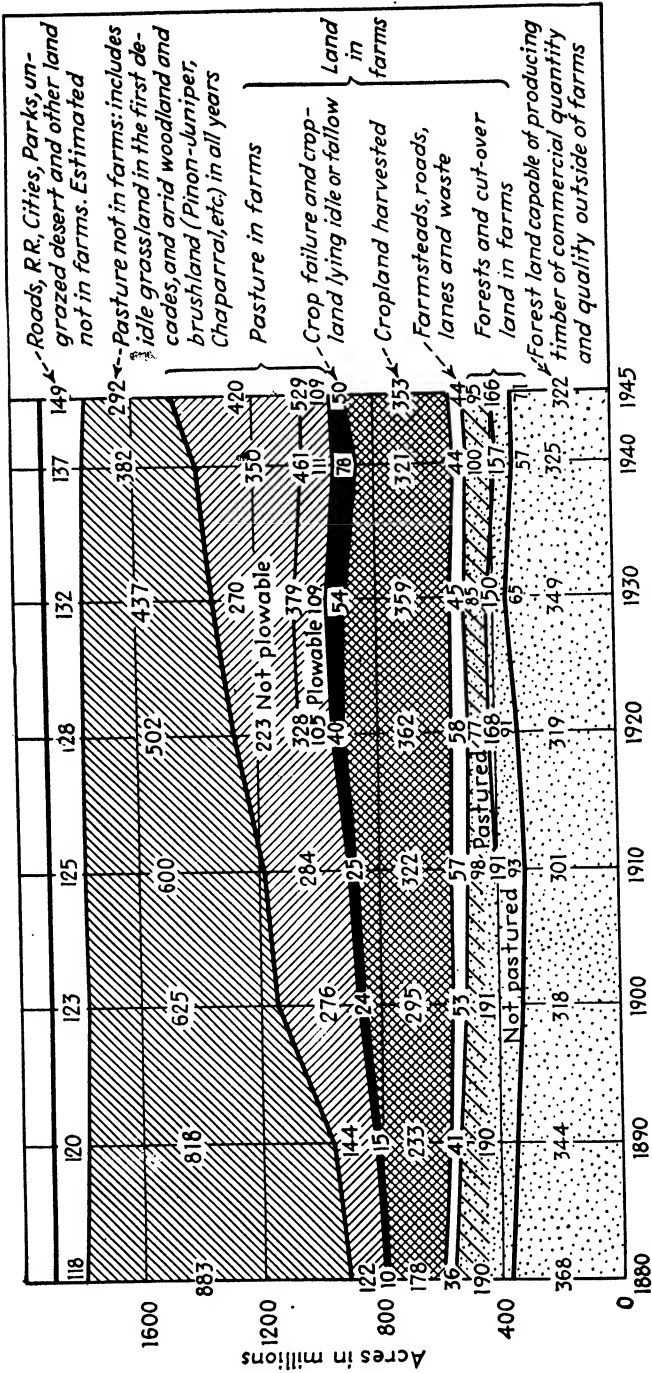


Fig. 42. The trend in land utilization, United States, 1880-1945. Source: Neg. 19123, BAE, USDA.

ing upon forestry as it affects farming. Other types of land use will be referred to only as necessary to present the whole picture of land use.

THE PRESENT AND POTENTIAL USES OF THE NATION'S LAND

Major Uses. The further study of land utilization must rest in part on a knowledge of the present uses of the nation's land resources, both public and private. The history and the present broad outlines of this picture, as of 1945, are portrayed in Fig. 42. Crop land, including fallow land and that on which the crop failed, occupies only 403 million acres, or slightly more than one-fifth of the land area of the country.

Over one-half of the land is pasture, which includes much land "outside of farms"; 109 million acres are "plowable pasture." Forest, cut-over, and burnt-over land comprises one-fourth of the total area, of which a portion is used for pasture. The remaining tenth of the total land is used for nonagricultural purposes or for farmsteads and lanes. In summary: crop land comprises one-fifth; forests include one-fourth; and pasture, in part overlapping with forests, uses about one-half of the land area of this country.

Although the total crop land of the nation tended to remain approximately constant from 1920 to 1945, the areas in crops in various regions of the country are in continual flux. Between 1919 and 1928 the crop acreage declined in the Northeastern and Eastern section of the country. The notable increases occurred in the Great Plains area and on the Pacific coast. In contrast, from 1929 to 1934 sharp reductions in acreages occurred in the Great Plains region, whereas increases occurred east of the Mississippi River, in Texas, Oklahoma, Minnesota, and along the Pacific coast.

Since that time the cropped area in the Great Plains has again increased as wheat acreage expanded under the stimulus of war and post-war demand.

Uses of Crop Land. Crop land, excluding fallow, in 1945 totaled approximately 350 million acres. Of this total, about 289 million acres, or more than four-fifths, was used by five major crops, roughly as follows: corn, 88 million; cotton, 17 million; wheat, 65 million; all hay, 77 million; and oats, 42 million acres. These acreage data do not, however, indicate the relative importance of these crops, for some of them tend to be grown on the poorer land and some—notably wheat, oats, and hay—are extensive crops. The value of these crops in 1945 was only three-fifths of the value of all crops. Nevertheless, the preponderance in terms of acreage of these five crops indicates they occupy a high position in American agriculture.

The broad outlines of the agricultural uses of land in 1945 are pre-

sented in Fig. 43 according to the dominant use of land in each area. Thus there are the cotton belt, the corn belt, the dairy region, and so on.

Potential Crop Land. Estimates of the amount of *potential crop land* must necessarily be rough, since not sufficient is known in detail about the physical and economic characteristics of this land. In general, however, we may say that, though only about one-fifth (or 350 million acres) of the total land area is now used for crops, an additional 600 million acres can be used if farm products' prices warrant and if certain improvements are made (see Fig. 44). Of this potential area, about half

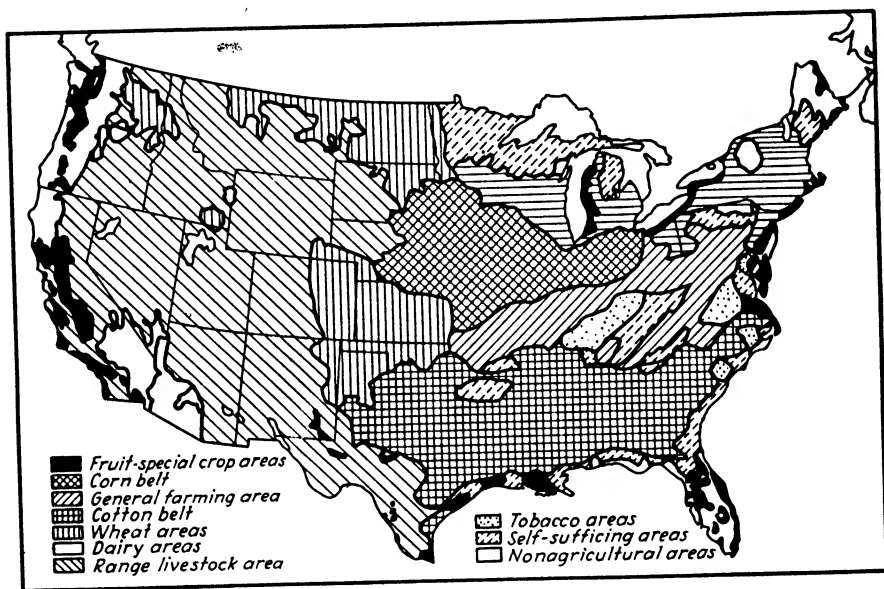


FIG. 43. Major types of farming in the United States. Source: Neg. 35408, BAE, USDA.

(or 300 million acres) is ready for the plow without irrigation, drainage, or clearing. Of this readily available land, over 100 million acres are in *plowable pastures in farms*. The use of much of this land for crops might mean a serious shortage of pasture lands. An additional 146 million acres of arid and semiarid land could be used for crops, much of which has been used at times in the past but is now used for pasture. There remains a potentially irrigable area of 30 million acres aside from any land which is now in crops but which could be made more productive by irrigation. Drainage would increase the arable land by about 50 to 75 million acres, which again do not include land which is now in crops but which would be benefited by drainage. The remainder of the potential crop land consists of almost 200 million acres of forest and cut-over land.

Altogether the crop-land area could be tripled—with, however, a much less proportional increase of output due to the relatively poor quality of most of this land. It does not seem likely that this land will be used for crops except in small part, unless the present outlook for demand and supply of farm products alters materially.

There will be, as there are already under way, some shifts from the use for crops of some land now tilled to other, better land made available by drainage, irrigation, or clearing.

Objectives of a Land-use Program. A land-use program has two broad objectives: (1) conservation and (2) the development of the

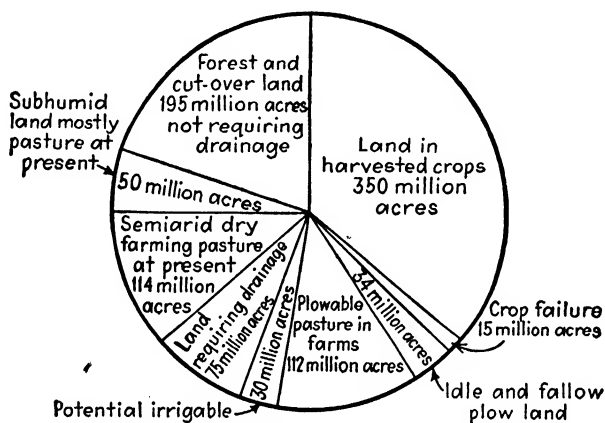


FIG. 44. Land capable of use for crops. Extreme physical possibility, 973 million acres. Source: BAE, USDA.

proper use of resources. Such a program must cover both publicly and privately owned land, the program for each having some distinct characteristics and both having some characteristics in common.

The objectives of a land-use program may also be classified as (1) private or (2) public.

1. The program may have as its aim the working out of a better use of the land so as to increase the returns to those owning and using the land. It may propose to introduce those uses of the land and cultural practices which will preserve or restore the productivity of the land and thus over a period of years insure larger and more stable returns to the owner. These private aims, however, are rarely inconsistent with broad social purposes.

2. Although land utilization analysis is sometimes projected with the success of the individual entrepreneur in mind, the public or social point of view is more likely to be in the foreground. Some of the public, or

collective, considerations or objectives involved in studies of rural land utilization are as follows:

- a. Provisions for future timber supply of a nation or area.
- b. Protection of watershed, and prevention of destructive floods or serious erosion.
- c. Provision of parks, game preserves, and other recreational areas.
- d. Preventing unwise agricultural settlement.
- e. Facilitating the removal of an agricultural population from a seriously unfavorable environment to one likely to permit a higher income and a better standard of living.
- f. Determining what public action is called for in dealing with seriously prevalent tax delinquency.¹
- g. Grouping or regrouping population with a view to economizing public expenditures for roads, schools, police protection, churches, and other social institutions.
- h. Coordinating interdependent industries, as, for instance, providing a permanent supply of timber for local wood-using industries, providing winter work for farm population in forests or seasonal employment in nearby cities, and creating or enlarging a local market for farm, factory, or forest products.
- i. Preventing the serious wastage of natural resources.
- j. Avoiding the development of a long-time production which is excessive in relation to demand.¹

THE PROBLEM OF SUBMARGINAL USE

Submarginal Land. What to do with land on which the operator cannot make an adequate income (sometimes called "submarginal land") is a major problem of land use. One of the difficult aspects of this problem is to determine just what is meant by the term *submarginal land*. One of the most eminent students of the subject, Dr. L. C. Gray, has the following to say:

In classical economic theory submarginal land is land that, under proper conditions of utilization, it will not pay to cultivate according to the normal standards of return to labor and capital that tend to prevail throughout the competitive field. . . . I could cite you a score of difficulties that would be encountered in applying that definition to actual situations.

For instance, there is the assumption of proper conditions of utilization. Undoubtedly thousands of farms that now appear to be submarginal could continue to hold their own if the tax burden were better adjusted to the earning power of the land. Doubtless much forest land could be effectively utilized by private enterprise if the tax burden could be made more equitable. It is for this reason that the subject of local finance plays so important a part. Moreover,

¹ The Advisory Committee on Social and Economic Research in Agriculture, J. D. Black, editor, "Research in Agricultural Land Utilization: Scope and Method." This report constitutes an excellent summary of methods of research in land use.

on thousands of farms normal conditions of use do not prevail. The size and equipment of the farm and the system of farming developed under the conditions of an earlier day are wholly out of line with radically changed requirements of the present.²

Dr. Gray's statement points to the crucial factor in defining submarginal land: that is, the assumption of proper use. As emphasized in Black, *et al.*, *Farm Management*,³ any land is productive. It may not, however, yield a net product unless it is properly used. Thus, good grazing land may appear to be submarginal if an attempt is made to grow crops on it. Because land's profitability (the ultimate test of whether it is or is not above the margin) depends so much on use, and because there is some proper use for all land, it is now customary not to speak of submarginal land, but rather of "problem areas" or "submarginal uses." Black, *et al.*, point to the striking example of two counties

. . . close together in Illinois—Douglas and Jasper. In 1940, the gross production on the average farm in Douglas County was \$3,530, in Jasper County, \$965. Douglas County lands are commonly described as having high productivity and Jasper County lands as having low productivity. The average farm in Jasper County, however, contains only 120 acres as compared with 184 in Douglas County. To include within a farm boundary as much productivity, measured in terms of chemical nutrients, in a Jasper County farm as in a Douglas County farm would require 380 acres. A farm of 380 acres in this kind of land is most advantageously used in growing grass and hay to support a livestock system of farming. So used, it might very well yield as large an income as the Douglas County farm of 184 acres. Most of the so-called submarginal land in this county is merely land which is being farmed in units too small.⁴

Besides farming units too small, another improper method of use that makes land appear to be submarginal is growing unsuitable crops. These may be crops for which the land is physically unsuited or which are wrong for an economic reason. For example, high transportation costs, due either to distance from markets or to an unfavorable freight-rate structure, may cause a crop to be unprofitable though it may be well fitted to the land on which it is grown.

In sum, the reasons why much land is in submarginal uses are poor judgment in the choice of use, the deterioration of land through bad management so that costs on it have increased enough to eat up profits, the competition of new lands which forced prices below costs on the land

² *Proceedings of the National Conference on Land Utilization*, 1931, pp. 58-59.

³ This discussion draws on pp. 592, 593.

⁴ From p. 593 of Black, Clawson, Sayre and Wilcox, *Farm Management*. Copyright, 1947, by the Macmillan Company and used with their permission.

originally used for the crop,⁵ farming on units that are too small, or cultivation by obsolete technical methods. Much of this land continues to be kept in submarginal uses because a farmer, having started with a use that was supermarginal when he began but which has become submarginal through soil deterioration or the competition of new land, does not have the means to enlarge his holdings to economic size or buy the equipment that will make profitable operation possible.

A farmer lacking the capital to make possible a shift to a proper use can continue submarginal uses for considerable periods for various reasons. The operator may voluntarily accept a lower standard of living than the average generally accepted in the community or he may be liquidating his capital (in lieu of income as such) through exhausting the fertility of his farm or failing to maintain fences and buildings. Another reason is found in such agricultural subsidies as tax moratoriums, benefit payments, and artificially cheap credit.

Location of Problem Areas. There are whole areas in this country which because of the loss of fertility or the competition of new lands are in what now are submarginal uses. There are problem areas because the farmers living on them do not have job alternatives elsewhere and lack the means to enlarge and modernize their holding and equipment.

The chief sections on which such conditions obtain are in the southern Appalachians, where in part the problem is due to erosion, and the cut-over areas around the Great Lakes and in parts of the South and Pacific Northwest. Each state, however, has its share of submarginal farms.

The problem of these problem areas was intensified during the depression as people unable to find jobs in the city went back to the farm. Because they had no capital, they could obtain only poor land but not even enough of that to cultivate economically, or they attempted to grow crops on land that was cheap because it was not fit for farming. By the same token war and postwar prosperity eased the problem because so many alternative employment opportunities were made available, and prices went up to make profitable many crops previously unprofitable. If prices should fall and depression return, the question of how to help people in problem areas would challenge us forcibly again.

We have not yet discussed one important economic factor bearing on the problem of submarginal use. This is taxation, the relation of which to land use will be discussed below.

Taxation and Submarginal Use. Turning our attention to land that has been or is in private hands, we find that taxation is related to the submarginal-use problem in at least three ways.

⁵ Once upon a time wheat was grown in Vermont. The competition of the new Western lands made the land in Vermont submarginal for wheat. But as dairy land it is definitely above the margin.

First, taxation has been a means of transferring poor land to the states and counties. The large volume of land which has returned to state and county ownership through tax delinquency is almost wholly land which is marginal or submarginal for other reasons than taxation. This land being now public property may be more easily put to that use which a scientific program would specify.

Second, taxation has been one of several factors preventing reforestation of privately owned cut-over land, with the consequence that the owners of such lands try to use or sell it for crop uses when that is at all possible. If governments tax growing timber according to its value, they encourage the wasteful cutting of immature timber and discourage owners from allowing a new stand of timber to grow. From fifty to one hundred and fifty years are required to grow marketable timber, and the accumulation of property taxes over this long period of no income from timber sales is a greater burden than individuals are willing to assume. It is probably true, however, that interest on the investment and the uncertainty of the future return (due largely to possible loss from fires) are greater barriers to private reforestation than is the taxation of standing timber.

Third, the tax burden has been a contributing factor in many cases in so weakening the competitive position of certain farmers, or of whole counties or districts, as to raise costs above returns and make the land appear submarginal. Another way of putting this point is that taxation has confiscated the capitalized value of such farms—the income after taxation being so small as to leave little, if any, income to capitalize and give value to the farm for the owner. Three factors have contributed to this situation: (1) The continued application of the property tax as almost the sole source of state and local revenue in many states has placed a disproportionate burden on farmers. (2) The administration of the tax wherein the assessed value has not been properly adjusted to the market value of the property has done even more to injure particular farmers. Tax delinquency to the extent that the property is taken by the county is in many cases evidence of incorrect assessment. If a property owner's taxes are so high that the property cannot sell for more than three to five years' taxes, this property has usually been greatly over-assessed. (3) In addition there have been at work certain forces in local finance, particularly in some rural regions, which tend to make the cost of government excessive. The large tax delinquency on lands which are in submarginal uses, places a heavier tax burden on the remaining land, some of which may become unprofitable thereby. Isolated and sparsely settled communities make the cost of local government excessive. There are numerous cases of arrested development, particularly in the newer sections in which communities or even individual farms spring up in

anticipation of a general real-estate development which does not materialize. Then the large cost of local government, particularly of schools and roads, is logically excessive on those in the "arrested development areas" and perhaps on the whole county. Such areas should be bought up and the land put to other than crop uses. An additional local factor is the existence of unnecessary local agencies of government, especially the practice of continuing the government agencies formed in horse-and-buggy days. School consolidations, county consolidations, and so forth, are needed but are fought because of local pride. Another cause of heavy local taxation is the practice of continuing as local-government functions activities which involve statewide interests and should therefore be undertaken largely or entirely by the state. Examples are the major and secondary highways, a larger portion of education costs, and relief of the indigent. A thorough reorganization of local government agencies and functions is seriously needed. And overshadowing all of this as a cause of heavy taxation are the unnecessary expenditures arising from inefficiency, unnecessary activities, and the desire to keep up with "Jones County." Budget review boards have helped solve this problem in some places, but the fundamental difficulty lies in the lethargy of the citizens and can be solved only by a reversal of their attitude.

The Proper Land Use. The existence of large areas where lands are in submarginal uses leads naturally to a consideration of what should be done to correct this condition. One major step in a corrective program is to determine what land should not be used for crops and then to decide what should be done with such nonagricultural land—whether it should be used for forestation or for recreational purposes, or whether it should be left idle with perhaps some grazing use. Once that is done, a more difficult problem arises: how to put land into its proper use.

CONTENTS AND OPERATION OF A LAND-USE PROGRAM

Policy for Unappropriated Public Lands. The proper policy for the land which has never been transferred to private hands is relatively easy to outline. These lands include the public domain of the Federal government and state lands, with primary reference to lands which have never been sold. The program for lands which have been returned to public ownership through tax delinquency will be taken up later. Sufficient is known concerning the quality of the lands within the public domain to conclude that, almost without exception, they are inferior and should not become part of the tilled area under present technical methods and the present outlook for farm-product prices. They are already public property, and therefore the effecting of a program is more simple. And it is clear that such lands should be used in such a manner as to accom-

plish broad social purposes, not for revenue primarily, nor to aid one particular group against another.

The continuation of the homestead privilege in modern times, considering the poor quality of the remaining unappropriated lands, has been subject to much ridicule. Referring to "stock-raising homesteads," Arthur Hyde, Secretary of Agriculture, 1929 to 1933, said, "I hope sometime Uncle Sam will refuse to deed 640 acres of sand and cactus to a man, no matter how courageous and industrious he may be; will refuse to be party to the certain tragedy which waits for those pioneer souls, who, dauntless but misguided, would carve a farm from barren wastes." A wit once remarked to the effect that the Homestead Act at present was a scheme whereby the Federal government wagered 160 acres of worthless land against all of the settler's savings and five years of his life that the homesteader could not live on the land. This fun-poking was based on sound facts and reasoning and hence the Department of the Interior has withdrawn the remaining public domain from homesteading entry until the land has been classified.

Other features of the public-land policy refer to forest, grazing, and mineral lands and to power rights. The principle underlying the use of these resources should be conservation, and this object in most cases can be best obtained under public control. For economical and efficient administration, school lands, whether adapted for forest or for grazing uses, in many cases should be combined into larger units than sections. The remaining public timber lands and grazing lands should remain under public control, if for no other reason than to protect watersheds of streams used for irrigation, power, or navigation. Whether mineral and coal lands should be sold or merely leased at the time when their utilization is warranted is a matter of dispute.

The Taylor Act of 1934 authorizes the Secretary of the Interior to organize the "vacant, unappropriated, and unreserved lands" which are not in the national forests or other reserved areas into "grazing districts" in which grazing would be by permits. The purpose is to improve grazing conditions, particularly through erosion prevention by controlled grazing and through improving water supply for livestock. No lands in these districts may be open for homesteading until such lands have been classified as more "valuable and suitable" for tilled-crop purposes.

Control of the Public Domain. An acrimonious discussion among the Western states has been conducted for years over the question of whether the Federal or the state governments should have control of the remaining public domain. At present each exercises control over that land to which it has title. One group wishes that the remaining Federal domain be turned over to the states. On the other hand, some desire not

only that the Federal government keep control of its lands but that it extend its control to state lands, particularly where the latter are part of watersheds or are used for grazing. Concerning watershed protection, the Conference on Land Utilization said:

It is recognized that throughout the Rocky Mountain regions and the Pacific coastal regions hundreds of communities are directly dependent on near-by watersheds for their supply of water for irrigation and other purposes and in many cases this dependence is interstate in scope due to the watersheds being in one State and the irrigation use in another State, and also due to the fact that the irrigation water of one State must often be stored in another State. Inasmuch as these facts can not be changed, due to the geography of the region, it is recommended that lands valuable for watershed protection should be administered under the supervision of the Federal Government.

The group demanding even further Federal control contend that the states have not followed farsighted policies of conservation of forest or grazing land and protection of watersheds and that the fact that land is under different control agencies prevents the working out and execution of a uniform program. Furthermore, the states' income from these lands, unless temporarily augmented by shameful alienation of them to private owners, could hardly offset the increased costs of local government, costs now borne partially by the Federal government. On the other hand, those who demand the turning over of the Federal domain to the states are very critical of the effectiveness of the Federal control in the past. But their strongest point is that the Federal policy, because of being worked out at Washington and in particular because of being uniform, is not properly adapted to the various local conditions. A commission appointed by President Hoover to study this matter recommended in general that the Federal lands adapted for grazing be gradually turned over to the states. However, this does not close the issue and the conclusions of the commission are open to serious question. Thus far (1949) nothing has been done either to turn land over to the states or to extend Federal control over state lands.

The Reclamation Issue. Probably no Congressional act relating to agricultural land passed prior to the Adjustment Act of 1933 caused more bitter discussion than the Reclamation Act of 1902 and the accompanying Federal aid in the irrigation of arid lands. Reclamation as a public activity in this country has had relatively little to do with drainage. Its opponents view irrigation as a stimulus to overproduction. The people of the West, on the other hand, emphasize the degree to which the products of irrigated farms are important for the local market or for export. They point to homes created and to development which takes place with irrigation as a justification for the reclamation program. As is frequently true in such sharp disagreements, the clash of opinion rests on points of view, on personal interest, or on differences in objectives.

First, a distinction must be made between successful irrigation projects and those which are failures. Private and Federal projects at times have been undertaken without due consideration of economic feasibility. Sometimes the costs of projects have been materially in excess of estimates, turning apparently sound projects into failures. The consequent train of woes, of bankruptcies, and of poverty and hardship is well known. Again, such unsound projects contribute to the supply of farm products and react on the profits of the more permanent producers. In contrast to these unsound projects are the well-established ones, as may be found, for example, in the Central Valley of California, the upper Yakima Valley in Washington, and in the Twin Falls section of Idaho. Of course, during the depression of the 1930's farmers on these projects suffered losses, as did farmers in all sections. But when farm prices are relatively good, the rural life developed on these projects compares favorably with the best in the nation.

Second, in the case of the successful projects, the question as to whether such projects should have been established, or similar ones in the future be undertaken, depends in part upon whether the concern is with such short-run considerations as the effect of new acreage during a period of agricultural readjustment, or whether it is the long-run problem of competition between old and new areas. It is difficult to give strong statistical evidence to support the argument that irrigation projects, in particular publicly constructed ones, contributed to any marked extent to rural depression in the 1920's and 1930's. Of the 21 million acres irrigated in 1940, only 12 per cent were listed as Federal, state, and city projects, although some projects listed as private were constructed by the public. All irrigated lands equaled only 5 per cent of the nation's crop land in farms, though they produced a much higher percentage of the crop value.

Considered in the long run, the entrance of new lands under irrigation which can produce more cheaply and often put out goods of better or more uniform quality is simply a form of the old problem of the new area competing with the old and forcing readjustments in the latter. In Chap. 2 we reviewed the effect of the New World on European agriculture, and in Chap. 3 we noted how the westward movement forced readjustments in land use in the states farther east. From a social point of view, the long-run interest is primarily in efficiency; let the principle of comparative advantage operate to determine land use. If this be the attitude, the long-run policy should be to irrigate more land if this land can produce more at a lower cost than some land already in use, the latter to be put to a different agricultural use or to be withdrawn from agricultural uses entirely.

Another aspect of irrigation was brought to the public attention by the severe droughts of 1934 and 1936 in the Great Plains area. Irregular

moisture leads to both misuse of land and great suffering. This experience probably explains in large part renewed Federal support for irrigation, both in such projects as the giant Columbia Basin Project in central Washington, the great Central Valley development in California, and the smaller scattered projects under the Water Facilities Program of the U.S. Department of Agriculture.

Even though this latter principle be acknowledged, this need not justify some of the activities under the Reclamation Act. Not always have the projects to be developed been chosen on the basis of economic feasibility. Political pressure has at times influenced irrigation development more than the needs of the nation. A less valid criticism is the assertion that the Federal projects tend to be those which private capital would not undertake, thereby implying that Federal projects have been in general unwise ones. This need not be true, for the government is in a position to undertake projects too gigantic for private enterprise. The aspect of reclamation by the Federal government which is most questionable is that of interest-free loans for construction. This has been viewed as a subsidy to irrigated farming as opposed to farming in the East, where the farmers had to pay interest on loans obtained for improvements. In addition, there are millions of acres east of the Great Plains in which erosion prevention, drainage, fertilization, or improved tillage and cropping practices would so raise the productivity of the soil as to offset the advantages of the rich desert but irrigated lands. Thus irrigation development would be unnecessary.

Policy for Tax-delinquent Lands. The general practice of governmental jurisdictions has been to dispose as rapidly as possible of lands seized for taxes and thus return this property to the tax rolls. The pressure of revenue needs, the prevailing policy of land exploitation, and the absence of a scientific land policy have all led to this practice. Now that public officers and part of the public itself are aroused to the need of a land policy, it is time that here, in one of the most obvious opportunities for the execution of a land-use program, the practice should be changed.

What should be done with these tax-delinquent lands? The first step should be an inventory of the physical and economic characteristics of these lands, to be followed by a careful classification of the lands according to their proper use. The land could then be zoned according to its proper uses, as is explained in the following section, and thus the use of public lands could be correlated with the zoning of private lands. Some land may be found to be adapted for farming, particularly if tax burdens are reduced and farming methods reorganized. On the whole, it is probable that most of these lands will be classified as forest, grazing, or recreational lands. Furthermore, since private initiative cannot usually

be expected to put such land to non-agricultural uses, particularly forest uses, it is necessary that this land remain in public hands and that it be put to proper use under public administration. In order to conduct a reforestation program properly, the government should have the power to exchange lands or buy up lands so as to organize reforestation areas of proper size for administration. Such laws have already been adopted in some states.

Policy for Private Lands. From the standpoint of the execution of a land-use program once the land is classified, the most difficult question is, How can the use of privately owned land be adjusted to fit the qualities of the land? With a system of private property, it is a question of how to take submarginal crop lands out of crop uses, and of how to prevent potential submarginal crop land from being put into crops. All of the suggested solutions involve problems of feasibility and of principle, the chief principle being that of private *vs.* social control of land use. Several methods have been discussed and partially applied.

First, when the land has been classified and the results of the classification released, reliance might be placed on private initiative, either to correct certain of the economic or physical characteristics of the land where possible, or to change the use of the land where the classification indicates that it is improperly used. Steps might be undertaken to relieve excessive tax burdens. Present owners might be sufficiently convinced by the classification that they would adjust the use of land when used improperly. Of more probable value, purchasers of land could use the land classification to guide them in selecting farm land, particularly to aid them in seeing through the land salesman's arguments. But experience demonstrates that the action of individuals in adjusting land uses to the proper uses, as indicated by the land classification, will be slow and imperfect.

A second proposal is that governments, particularly the national government, purchase large areas of the submarginal and potential submarginal land, which is or would be submarginal if used for crops, and group them for forest, grazing, or similar uses.

At various times comparatively small sums have been appropriated to buy land that is submarginal for farming and turn it to noncrop use. By 1940, 9 million acres had been purchased by the Federal government and "improved for use as forests, recreation areas, game refuges, ranges and other purposes."⁶ The amount of money required to buy all land in wrong uses would, however, require an enormous expenditure in the absence of other means of adjusting land use.

Another device which has been proposed for bringing about "rational

⁶"Farmers in a Changing World," U.S. Department of Agriculture, *Yearbook of Agriculture*, 1940, p. 411.

land use" is that of *land zoning*. Concerning the meaning and development of land zoning, George S. Wehrwein, who has made an extensive study of rural zoning in Wisconsin, says:

Zoning is more than classification of land and then trying to induce the occupants to use the land in accordance with what is deemed the best use. It is more than directing settlers to good land and away from the land unsuited to agriculture and preventing sales of land in the "forest" areas or the withholding of public services from the restricted area in so far as this is legally possible. It is a *positive* control over land use, listing in each zone what the private owner may or may not do with his land and fixing a penalty for the violation of the ordinance. This use of the police power has been successfully established in cities since 1885, but its extension to non-urban territory dates back to 1923 when California and Wisconsin granted to counties the right to zone. However, this legal authority was at first used only in the urbanized territory about cities. The amendment to the Wisconsin County Zoning Law in 1929 extending the power over farms, forest and recreational land opened the way for zoning in the marginal areas of the state.⁷

No other state has followed Wisconsin's example in enacting zoning laws, perhaps because it is a method for preventing future additional misuses of land rather than for rectifying current misuses.

Other means, like control by creditors over the land use of debtors, have been suggested, but the basic method of social influence on land use in the United States has been the various AAA and other U.S. Department of Agriculture programs, beginning in 1933 and given great impetus by the Soil Conservation and Domestic Allotment Act of 1936, which we shall discuss in Chap. 27, in the course of our general review of agricultural programs.

Federal Conservation Programs. These programs, in general, offer payments to farmers who take their land out of soil-depleting crops (this part of the program was largely discontinued by the end of the Second World War), or who perform certain soil-conserving practices such as applying fertilizer, growing green manure and cover crops, contour plowing, terracing, etc. For these purposes 150 million dollars was appropriated for the fiscal year 1947-1948 as compared to 300 million dollars for the year preceding.

There is no question but that the Federal program, through increasing the fertility of our farms, helped largely to make possible the great increase in agricultural output that marked the years after 1937. The following quotation from the *Report of the Secretary of Agriculture for 1947*⁸ touches on the history and indicates the extent of the soil-conservation program.

⁷ *Journal of Farm Economics*, January, 1934, p. 119.

⁸ Pp. 68, 69.

We have made remarkable progress in our national program of soil and water conservation since 1933. During the first few years of its operation, most of the efforts of the Soil Conservation Service were expended toward demonstrating the practicality of complete conservation planning and treatment for entire farms and groups of farms. These demonstrations of proper and complete conservation treatment—whereby each acre is used according to its capabilities and given conservation treatment according to its needs—proved so successful and popular that by 1937 the various States began to enact laws to permit the creation of legally constituted soil-conservation districts to help carry on such work under local leadership and responsibility.

The idea of having local conservation districts of nonpolitical nature and governed by local people administer the soil conservation program proved overwhelmingly popular. By 1946 all 48 States and Puerto Rico had passed laws to permit the creation of such districts wherever the local farmers and landowners desired to do so. As of June 30, 1947, there were, in all, 1,865 soil conservation districts and 24 other conservation districts of various types that were devoting their main efforts to soil conservation. These districts include a total area of slightly more than 1 billion acres. More than 4,450,000 farms are contained in these districts—this is more than three-fourths of the farms in the Nation. And soil conservation districts are still being created at the rate of about 20 each month.

Since the first soil conservation district was organized, technicians of the Soil Conservation Service, working with individual farmers in these districts, have developed complete conservation plans for more than half a million of the Nation's farms—approximately 135 million acres. These conservation farm plans were developed by the technicians and farmers working together on the land. They include specific recommendations as to how each acre of a farm should be used according to its capabilities and as to the kind and intensity of conservation treatment needed to each acre, and are the blueprints for permanent conservation farming that not only fit the needs and capabilities of the land but also fit the needs and desires of the farmers.

The complete conservation treatment recommended by the farm plans for these 135 million acres has already been applied to the land on more than 72 million acres. Practically all of the remaining 63 million acres are now receiving the treatment needed. Usually, the needed conservation measures can be installed on a tract of land within 1 to 2 years after a plan has been made. In some instances, however, it may take 5 or 6 years to make all the proper changes in land use and to build all needed conservation structures on a farm.

In addition to the 72 million acres in districts on which full conservation treatment has been applied, there were 38 million such acres outside, making 110 millions in all.

The next quotation⁹ indicates the nature of the conservation practices sponsored by the government, the number of operators participating, and how much has been done in the course of the last decade.

Agricultural producers who received assistance under the program in 1946

⁹ *Report of the Secretary of Agriculture for 1947*, p. 71.

operated around 2,850,000 farms and ranches embracing 308 million acres of cropland or about two-thirds of the Nation's total cropland. The volume of practices completed in 1946 was the largest ever carried out under the program. These practices had to meet one or more of the following standards. They had to (1) maintain or increase soil fertility, (2) to control or prevent erosion, (3) to conserve and make better farm use of water, and (4) to conserve and improve range and pastures. . . .

There is an expanding benefit from the program. For instance, during the 11 years 1936-46, cooperating farmers were helped to build 672,000 miles of terraces—about 27 times the circumference of the earth. They were assisted in developing green-manure and cover crops on 169 million acres, as well as about 56 million acres of interplanted summer legumes and natural cover; in applying 155 million tons of limestone and 13.1 million tons of 20 per cent phosphate to establish protective cover; in farming 79 million acres of intertilled crops and 24 million acres of close-seeded crops on the contour; in strip cropping 55 million acres; in establishing or improving pastures by seeding 33 million acres; and in building 679,000 dams and reservoirs for stock water, erosion control, and irrigation. . . .

Important practices completed under the 1946 program, when compared with those of 1938, indicate substantial progress:

Practice	Extent	
	1946 (preliminary)	Percentage of increase over 1938
Green manure and cover crops.	million acres 21	91
Application of limestone.	million tons. . . . 27	441
Application of phosphate.	million tons. . . . 2.6	566
Contour farming intertilled crops.	million acres. . . . 7	49
Contour farming close-seeded crops.	million acres. . . . 4	265
Strip-cropping.	million acres. . . . 7	839
Establishing or improving cover on pasture by seeding.	million acres. . . . 4	211

The Erosion Problem. The measures described in the quotations just given have gone a long way to check the inroads of soil erosion, which in 1940 was estimated to have "essentially destroyed" over 50 million acres of crop land and caused the loss of three-fourths of the original surface soil on 282 million acres of all types of land, with considerable losses on other large areas so that "75 per cent of the cropland areas of the U.S. reported by the 1935 census are in need of conservation practices."¹⁰

¹⁰ *Yearbook of Agriculture*, 1940, p. 143.

Soil erosion has two aspects: (1) the erosion at higher altitudes which tends to destroy watersheds, and (2) the erosion of crop lands. The former type of erosion, if the result of man's action, is the consequence of deforestation or excessive grazing. The policy of reforestation and limited grazing as a cure for such erosion has already been discussed. Erosion of crop lands occurs when one or more of the following conditions exist: (1) cropping practices have removed vegetable matter from the soil and the land is uncovered during heavy precipitation; (2) the soil is of a type which washes easily; (3) the topography of the farm land is markedly sloped.

This soil wastage caused by erosion, often of the best land, is not only a distinct loss to the farmers affected but represents an almost irrevocable loss of a natural resource. The attack on the problem is through such devices as terracing, changed cropping systems so as at least partially to cover the land during the precipitation period, the use of grass strips on hillsides, and the return of the steeper hills to permanent pasture.

All of these are among the many practices for which Soil Conservation payments are made.

Despite the widespread and successful use of erosion control measures in the years since 1935, the *Report of the Secretary of Agriculture for 1947* pointed out that half our crop land was still subject to it, that hundreds of thousands of acres more are lost each year, and that an intensification of control measures is required.¹¹ Eternal vigilance, apparently is the price of maintaining fertility, as well as liberty. One area in particular where erosion may again become a serious problem is that part of the Great Plains where the greater part of the expansion in wheat acreage took place after 1943. This was the same area that had felt the effects of the drought and where obviously great care should be exercised in putting in new crops.

Summary. The twentieth century has seen social control of the land in the United States make great strides. A great part of our land area (much of this, of course, of no economic value) is and always will be in the public domain, where its use can be strictly controlled. Of the land in farms, more than half has been subject to conservation measures, largely induced by Federal payments. While in general there is not compulsory control of land use, certain practices which tend to harm the land of other farmers can be, under certain conditions, forbidden by law. Very important, though not directly related to land conservation are the quota provisions of the AAA Act of 1938, which have the effect of directly governing land utilization. Under these provisions, which at times have affected tobacco, cotton, and wheat, a farmer can be severely penalized for marketing more than a specified quantity of a basic

¹¹ P. 67.

crop. Therefore the effect is to confine his planting to the quota limit and thus govern his use of his land.

Far reaching as these measures are, they do not come up to the English Town and Country Planning Act, which went into effect on July 1, 1948. This law makes all land development subject to the control of a Central Land Board. While land may be bought and sold freely, the rights to develop it are vested in the board, which may sell them for any use it selects. Thus, the right to use land considered suitable for low-cost housing would be sold only if the land were to be used for that purpose. Owners may with permission develop land, but the revenue from developments is paid to the board. The owner may, however, sell the development at its increased value. The purpose of this law is to prevent land speculation and make sure the community as a whole will benefit from the development of large, privately owned properties.

Government influence on the use of land is only part of a broader trend in social affairs, the trend toward a smaller degree of individual as opposed to group direction of economic activity.

Questions and Problems

1. Why has there come to be such a widespread interest in the land-use question?
2. Outline the present use of the nation's land.
3. What are the objectives of a land-use program?
4. Is it due to the qualities of the land itself that certain areas are called "submarginal"?
5. What should be the policy for the various types of land which are now public property?
6. How may the use of private land be influenced?
7. What developments have occurred in this country's land-use program since 1933?
8. Describe the organization and activities of a soil-conservation district in which or near which you live.
9. What soil-conservation practices are commonly carried out in your section of the country, or on some farm known to you?
10. Is land reclamation a proper sphere of governmental activity?

Suggested Readings

1. *Land Utilization in the U.S.* (1947), a cooperative report by the Departments of Commerce and Agriculture, is a graphic summary with maps and charts which presents a comprehensive picture of our use of land.
2. "Farmers in a Changing World," U.S. Department of Agriculture, *Yearbook of Agriculture*, 1940, pp. 398-441, contains articles on land utilization and conservation.
3. "Soils and Men," U.S. Department of Agriculture, *Yearbook of Agriculture*, 1938, contains good articles on a number of phases of land use.
4. J. D. Black, *et al.*, *Farm Management*, Chap. XXVII, "The Management of Land," is an excellent brief survey.
5. John D. Black, "Notes on 'Poor Land' and 'Submarginal Land,'" *Journal of Farm Economics*, May, 1945, previously cited, is an illuminating discussion of why some land is called "submarginal."

CHAPTER 26

RURAL AND URBAN PROSPERITY

How does the income of the farm population compare with that of different classes of workers in the city? Are rural and urban prosperity each necessary to the other, or may one of them be built upon lack of prosperity of the other? These questions will receive our attention in this chapter.

The campaign for national farm-relief legislation has been largely based on the claim that farmers have not shared fairly and equally with other classes of the population in the division of the national income. It has been asserted that farmers were entitled to "relief" as a matter of moral or ethical justice. It also has been maintained that farm prosperity is in fact absolutely necessary to prosperity in the cities, that neither farmers nor city people can for any extended time enjoy prosperity unless the other group also is prosperous. Typical, much repeated statements are: "We cannot have prosperous industry without a prosperous agriculture" and "The farmers are the backbone of the nation." City businessmen are advised to "watch farm purchasing power" and farmers are told that "the outlook for better prices for farm products depends upon the incomes of city consumers." Statements such as the above are quite generally accepted as axiomatic, scarcely calling for proof. In the days when wheat was 50 cents a bushel farm leaders asserted, as though it would scarcely require proof, that "if the government guaranteed to farmers \$1 per bushel for their wheat, the depression would be history in a few months." Unfortunately, the answers to these questions are not so simple as most of the public utterances on the subjects indicate.

FARM AND CITY INCOMES

Some Early Estimates. Apparently, the first serious efforts to ascertain and compare the incomes of the farming and the nonfarming populations were based on the Census of 1910. An agricultural economist of national distinction has said that "it would be little exaggeration to call this period (1909 to 1914) a 'Golden Age' for the farmer."¹ This should arouse our curiosity in regard to the size of the farmer's income at that time. Furthermore, the fact that current agricultural legislation defines

¹ E. G. Nourse, in *Economic Policy for American Agriculture*, ed. by E. A. Duddy (1931), p. 20.

"parity prices" or "parity incomes" for farmers as prices or incomes which bore the same relationship to nonagricultural prices or incomes as existed in the "base period" of 1910 to 1914 gives current interest to the study of farm incomes in this period.

In the Department of Agriculture Dr. W. J. Spillman, on analyzing the Census data of 1910, reached the following conclusions: "The average investment per farm was \$6,440.00—The average farm income, \$640. If interest on the investment is calculated at 5 per cent it is found to be \$322. Subtracting this amount from the average farm income leaves a labor income of \$318." In describing the method used in determining the farm income Spillman says: "The farm is thus credited with the butter, cheese, eggs, poultry, honey, meat, fruits, vegetables, consumed on the farm where it is produced and the value of these products thus consumed on the farm is included in the farm income." Rental value of homes however, was not included. The value of food produced and consumed on the farm was estimated in another study, made in 1913 (*Farmers' Bulletin* 635), to be \$261 per year. If that is subtracted from the above figure, there remains a labor income, or farm income in excess of 5 per cent on the investment, of \$57 per year. Spillman concluded that "a very large percentage of American farmers live on the interest of their investment and do not receive anything for their wages."²

A second estimate of farmers' income was published by the U.S. Department of Agriculture as *Farmers' Bulletin* 746 in 1916. This was after certain surveys had been made by the Extension and Farm-management divisions in regions "much above the average of the general country," which showed in those regions higher incomes than those calculated from the Census. Because the Census data included "the financial losses sustained by the estates of wealthy persons who farm for amusement," suburban and other farms which did not require the full time of the operator, and "small tenant farmers of the south," E. A. Goldenweiser, who prepared *Farmers' Bulletin* 746, concluded that the Census averages did not represent "the true average income of typical farmers."

The labor income of the typical farm family he judged to be halfway between the survey figures of farms above the average and the Census figures, and he placed it at \$600 per year, consisting of \$200 cash and \$400 in fuel, food, and house rent furnished by the farm.

These figures may be compared with incomes of industrial families, as shown by a study made by the Immigration Commission for the year 1909. For 16,000 industrial families the average income was found to be \$721 per year. These represented, in general, incomes of unskilled types

² W. J. Spillman, Bureau of Plant Industry, U.S. Department of Agriculture, *Circular* 132.

of city wage workers. The farm and industrial incomes above given both represent family rather than individual incomes. Individual wage workers on street railways and in iron and steel works are reported in *Bulletin 746* as averaging over \$600 per year. Factory and telephone workers are reported as receiving less than \$500. These averages included women and children as well as men. Incomes of salaried employees in various city occupations averaged about double those of wage workers in the same occupations and accordingly were much above farm incomes.

Much more detailed information about the income of those engaged in agriculture has been collected by the Department of Agriculture for 1919 and all years thereafter, as shown in Table 59.

Percentage of National Income Realized by Agriculture. Attention

TABLE 59. NET INCOME OF PERSONS ON FARMS FROM FARMING (INCLUDING GOVERNMENT PAYMENTS), COMPARED WITH INCOME OF PERSONS NOT ON FARMS, UNITED STATES, 1929 TO 1946

Year	Total national income* (million dollars)	Net income of persons on farms from farming (million dollars)	Income of persons not on farms (million dollars)	Population Jan. 1		Income per person		Index numbers of income per person (1910-1914=100)		Parity income ratio (per cent)
				Farm (thousands)	Non-farm (thousands)	On farms from farming (dollars)	Not on farms (dollars)	On farms from farming	Not on farms	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1929	85,954	6,741	79,213	30,220	90,916	223	871	166	179	93
1930	75,364	5,114	70,250	30,169	92,271	170	761	126	156	81
1931	59,853	3,482	56,371	30,485	93,158	114	605	85	124	68
1932	43,605	2,285	41,320	31,028	93,448	74	442	55	91	61
1933	42,006	2,993	39,013	32,033	93,190	93	419	69	86	81
1934	49,448	3,531	45,917	31,945	94,066	111	488	83	100	83
1935	56,398	5,052	51,346	31,801	95,064	159	540	118	111	107
1936	65,707	5,361	60,346	31,377	96,343	171	626	127	128	99
1937	71,556	6,093	65,463	30,906	97,569	197	671	147	138	107
1938	66,412	5,041	61,371	30,620	98,735	165	622	123	128	96
1939	71,515	5,262	66,253	30,480	99,926	173	663	129	136	95
1940	78,364	5,361	73,003	30,269	101,187	177	721	131	148	88
1941	95,266	7,723	87,543	29,988	102,650	258	853	190	175	109
1942	122,477	11,286	111,191	29,048	104,905	389	1,060	286	217	132
1943	151,358	14,138	137,220	26,659	108,987	530	1,259	391	258	151
1944	161,882	13,531	148,351	25,521	111,847	530	1,326	391	272	144
1945	163,170	13,711	149,459	25,190	113,733	544	1,314	401	269	149
1946	167,176	16,649	150,527	26,850	113,544	620	1,326	457	272	168

SOURCE: *Agricultural Statistics, 1947*, p. 538, Table 640.

* These national income figures are apparently based on figures formerly used by the Department of Commerce, but which have since been revised. Our figures in Chap. 1 and elsewhere are based on the revised series, and thus differ somewhat from those in this table.

can be given next to the income derived from farming as compared to income from other sources. The figures for the period before 1929 were computed on a somewhat different basis from those for the years after. Though they are, therefore, not strictly comparable, the trend they indicate is clear.

From 1909 to 1914 the agriculturally employed population represented about one-fourth of all the nation's gainfully employed, and individuals and property employed in agriculture received slightly less than one-sixth of the national income. In 1919 the agriculturally employed represented 22.2 per cent of the gainfully employed; and agriculture received 18.5 per cent of the national income. The years 1918 and 1919 were agriculture's best years up to that time. During the late 1920's the agriculturally employed represented roughly 20 per cent of all the gainfully employed persons of the nation, and agriculture received roughly 10 per cent of the national income. In 1932 the agriculturally employed received approximately 5 per cent of the national income, but in the late thirties, the percentage of national income received by farmers and farm workers averaged about 8 or 9 till 1946, when it rose to 10. In that year about 12 per cent of the number of persons engaged in production were in agriculture. In spite of the recent increase, the percentage of national income going to farmers has remained smaller than the proportion of the working force engaged in agriculture.

Another way of comparing the position of farmers with that of the rest of the population is to take the per capita income for individuals in each segment. Here again the comparison is unfavorable to the farmer. Table 59 shows that in most years the per capita income of the farm population was only about one-third or one-fourth that of nonfarmers. Not till the later years of the Second World War did per capita farm income amount to nearly half of the nonfarm, and in 1946 it rose to about half, \$620 for farmers as compared to \$1,326 for nonfarmers.

Before discussing these figures further, it may be noted that the parity income ratio³ for 1946 was 168, which means that farm incomes were more than 1½ times as high relative to nonfarm incomes as they had been in the so-called golden age of agriculture, 1910 to 1914.

Before concluding on the basis of these figures that farm people are disadvantaged in comparison with their nonfarm brethren, a number of points which tend to qualify this conclusion somewhat should be mentioned. We have throughout been using income from farming in our comparisons. But farmers receive appreciable amounts for work off their farms. For instance, in 1946 hired farm workers earned on the

³ The parity income ratio is obtained by dividing the index number of income per person on farms by the index of income per person not on farms.

average \$130 for nonfarm work.⁴ On Jan. 1, 1947, farmers owned 5.4 billion dollars' worth of savings bonds, as well as other securities, the interest on which should not be disregarded.

Another criticism often made of estimates of farm income is that the imputed values assigned to the goods and services provided by the farm—chiefly farm-produced food and the rental value of the farmhouse—are undervalued in comparison with the cost of these goods and services in the city.

Validity of Comparison. It is questionable if this sort of comparison, involving broad averages, is very meaningful. While variations in income among farmers are not so great as among nonfarmers, they are still wide. In 1944 the average net income of California farm operators was \$6,679, of Iowa operators \$4,001, as against \$845 in West Virginia and \$1,219 in Mississippi.⁵ When someone makes comparisons between farmers and others, is he thinking of what is usually conceived of as a typical American farmer—that is, a Midwest farm operator with 160 or more well-cared-for acres—or a subsistence farmer somewhere in the Appalachians, with plenty of acreage perhaps, but none of it good, raising a little corn on eroded land and with an annual cash income of a few hundred dollars; or a sharecropper working 40 acres of cotton and getting half the income from it, after he has paid the landlord or merchant for his "furnish"? Clearly it makes a difference which one of these types of farmer is considered typical. This points to one of the basic difficulties which arises in making any generalization about American agriculture. It is too often forgotten that there are two worlds in American agriculture and what is true of one may not be of the other.

These two worlds cannot be separated sharply, but it is possible to indicate a division line somewhere between the somewhat less than 50 per cent of the farmers who in 1944 produced 90 per cent of the value of farm produce, and the other 50 per cent who produced the remaining 10 per cent. In the first category are the farm operators, who with the aid of their families or a hired man, work full time operating a family-sized farm or ranch in the Northeast, Midwest, or West, who participate in the commercial life of the nation and the world, and who, in good times at least, make decent livings for themselves and their families. On the other side are the subsistence farmers, who do not have enough arable land to work full time and who live poorly on the produce of their farms, have only a little left over to sell for cash, and, in a sense, are outside the mainstream of economic life. Also in this second world are the cotton sharecroppers, who also have such small areas to handle that

⁴ L. J. Ducoff and M. J. Hagood, *Farm and Nonfarm Wage Income, 1946*, p. 1.

⁵ *Farm Income Situation*, U.S. Department of Agriculture, July, 1946, p. 17.

they do not work full time and do not, therefore, receive the return appropriate to full-time work. These last two classes are chiefly in the South, where it should be remembered half the farmers in the country are located. Perhaps the majority of hired farm workers, particularly migratory workers, should also be included in this "lower" world. Clearly the conclusions to be drawn from a comparison of per capita farm and nonfarm income will be quite different, depending on which class of farmers is used in the calculation.

Another factor which tends to vitiate comparisons is that farm living and city living each have advantages and disadvantages which cannot be measured in dollars and which have different values for different people. Some of the advantageous factors in farm living which cause agricultural land to be overcapitalized have already been discussed in Chap. 17. How can one measure the advantages of living near a school and having the close society of neighbors against the independence and sense of accomplishment derived from operating a farm? Another advantage which farming has over urban employment is that in times of depression it offers some sort of opportunity for making a living, while the city offers none at all to the great numbers of the unemployed. While farming is on the whole more secure, the bankruptcies and forced sales of the depression showed that it is far from being entirely so.

Conclusions. The preceding discussion may be summarized as follows:

1. On the whole, until recent years, farming was less remunerative than nonfarm occupations in general. Nevertheless, the commercial farm operator, who is the "typical" American farmer insofar as there is such a thing, did and does earn an income comparable to that of the average of nonfarmers.

2. During the twenties and still more during the depression, the position of farmers relative to the rest of the population worsened. On the other hand, through the forties it improved, and in the second half of the decade it was much better relatively than even before, better even than in 1910 to 1914.

There is no telling how much of the national income agriculture *should* get. The answer lies in the field of ethics rather than economics. It would be very difficult to prove that the farmer's reward is not proportional to his contribution, viewed in strictly economic terms, though, as noted in Chap. 12 and elsewhere, the unorganized, competitive farmer used to be at a disadvantage in dealing with organized, monopolistic transportation, processing, and manufacturing firms. With government aid, however, this disadvantage has been reduced in recent years.

Perhaps all that it is safe to say on this subject is that the economy of the United States should function so that all Americans can enjoy

an American standard of living, a term in itself very difficult of definition.⁶ If any large group, such as subsistence farmers or sharecroppers, has a lower standard, steps should be taken to bring them up to what we have called the American standard. An indication of the nature of these steps will be given in the next chapter.

ARE FARM AND CITY PROSPERITY NECESSARY TO EACH OTHER?

This question is complicated because of the interrelationship at all levels of the urban and rural economy. Farmers buy from city folk, city folk buy from farmers; farmers sell to city folk, city folk sell to farmers. If farmers have lots of money they will buy more industrial products, but the reasons that farmers are prosperous may be the strong demand for food from the city. In this situation, as in so many others in economics, it is very difficult to separate cause and effect, because any single factor, like a high rate of industrial production or high farm income interacts on and tends to perpetuate the other.

Place of Agriculture in the Economy. Despite the complexity of the subject, certain points seem to be quite clear. Agriculture is the source of only about one-tenth of the national income, though a greater share passes through farmers' hands because of their purchase of industrial goods. With per capita farm income below the general average, and with farmers constituting less than 20 per cent of the population, it appears that, economically speaking, agriculture is much less important than the nonagricultural segment and is, again speaking in the economic sense, dependent. If the urban market were cut off from United States farmers they would have left only the 10 per cent of their current demand represented by the export market, but if farmers suddenly ceased to buy industrial goods only 10 to 20 per cent of the market for such goods would be lost.

The history of 1922 to 1929, when urban industrial activity was at a high level while agriculture enjoyed a less favorable relationship to the rest of the economy than before the First World War, is significant in this connection. Despite the poor position of agriculture, this was a period of marked urban prosperity and would seem to prove that urban prosperity is not dependent on prosperity in agriculture.

On the other hand, throughout the Great Depression, when urban income was at a low level, so were agricultural income and prices. When industrial activity began to rise after 1940, so did agricultural income

⁶ A minimum American standard would probably include a diet of at least 3,000 calories of food a day for adults, with the minimum necessary amounts of vitamins and other protective foods, one room for each person in a family, a bath and indoor plumbing, a car, at least one suit (or dress) of decent clothes per person, and some small provision for recreation, education, travel, and saving.

and prices. Nor was this due to the export market and military demands, for in 1947 and 1948, when only about 10 per cent of United States agricultural production was exported and military requirements were comparatively low, farm prosperity was at its highest, as was nonfarm.

That this parallel between agricultural and urban income is not accidental is pretty well demonstrated by the relationship between disposable income (presumably nine-tenths nonagricultural) and expenditures on food (Table 60). Disposable income is that part of his income which an individual is free to dispose of as he pleases; in effect, income

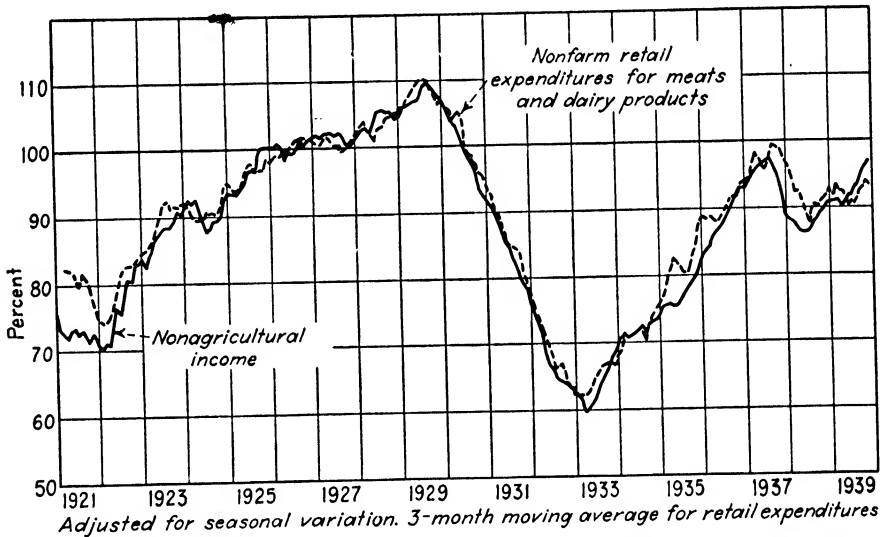


FIG. 45. Nonagricultural income and retail expenditures for meat and dairy products, 1924-1939. Source: *Yearbook of Agriculture*, 1940, p. 352.

after taxes. For the last twenty years, the proportion of disposable income spent on food has been approximately the same; it was a little lower during the war years, presumably because food prices were held down by price controls, and turned higher in the postwar years, as noted in Chap. 10, because of the lack of other outlets for consumers' expenditures. As relationships among economic magnitudes go, this one has been remarkably stable. No matter how much food is produced, no matter how great or small is the national income, the same proportion—about 23 to 24 per cent—of disposable income goes for food, or at least did in most years before the Second World War. There are shifts in the nature of this food expenditure as incomes shift. Generally, as people are better off, they buy more protein foods—meat, milk, eggs—and want more elaborate processing and packaging.

TABLE 60. PERCENTAGE OF DISPOSABLE INCOME EXPENDED FOR FOOD

Year	Percentage	Year	Percentage
1929	23.8	1939	23.9
1930	24.6	1940	23.6
1931	20.7	1941	22.2
1932	23.9	1942	21.7
1933	24.0	1943	22.6
1934	23.7	1944	21.7
1935	23.2	1945	23.9
1936	22.6	1946	27.1
1937	23.3	1947	28.1
1938	25.7		

SOURCE: *Survey of Current Business*, January, 1948, p. 14.

It has often been noted that there is a close correlation between the level of wage payments and the prices of important farm products like meat or eggs. This is readily understood in the light of the preceding. If national income is high, wage payments are almost inevitably high as well, making for a high level of disposable income in the hands of the most important consumers of farm products, the urban wage-earning population. Under such circumstances, because of the unitary relationship between disposable income and expenditures for food, the effective demand for farm commodities is strong and farm prices and income correspondingly enhanced.

It seems fairly well established, then, that farm income is a function of national income, and since national income so largely originates elsewhere than from agriculture, it can be said that farm prosperity depends on prosperity outside of agriculture.

Effect of Exports. If, in addition to domestic demand, there is a strong foreign demand, as was the case in the years after the war, agricultural income is very high. If demand from both sources is weak, agricultural income is correspondingly low.

If foreign demand is materially reduced because of very large crops abroad, because of the curtailment of United States assistance to other countries, or for both reasons, certain segments of American agriculture will be faced with serious problems. About a tenth of our overall production is exported, but whereas as much as one-third of the wheat crop may go out of the country, nothing may be exported of important commodities like butter or beef. The producers of export crops will be faced with difficulties if and when the foreign markets are curtailed. An "economic" surplus of wheat might leave repercussions on the prices of those grains, like corn, which are normally not exported in quantity.

The Farmer as Customer. While farm income is largely a function

of national income to which nonfarm industry makes the greatest contribution, it should not be forgotten that there are a lot of farmers and they are important customers for industry. It may be true that industry could stand the loss of the farm market much better than farmers could stand losing the city market. But the farm market is not one that most industrialists could give up with impunity. In large part the level of city business depends on how much farmers can buy of industrial products. This brings us back to the point where this discussion began, that our economy is interdependent and prosperity in one section makes for prosperity in others. When farmers are willing and able to buy household equipment, fertilizer, farm machinery, automobiles, and everything else, an important contribution is made to the prosperity of those who make these goods. In fact, as buyers, farmers occupy a very strategic position, because their purchases of durable goods vary widely with the up-and-down swings of their income.

Wages and Farm Income. The dependence of one sector of the economy on others, and in particular the dependence of farmers on urban buying power, calls attention to a point that some farmers are prone to forget. Many growers are inclined to grumble about high wages for their own help or high wages for labor engaged in processing or transporting food products. Truly the higher the wages a farmer pays his hired man, or the larger is the distribution margin on account of high wages, the less net profit there is for the farm operator. But before rushing off to vote to break up unions and repeal the Wage and Hours Act, farmers should remember that their prosperity depends on that of their customers, and their customers are chiefly workers. Though high wages in this particular case may be detrimental to a farmer, high wages, and even more important, a high employment rate, are to the general advantage of all farmers.

Questions and Problems

1. How did incomes of farmers compare with incomes of other parts of the population from 1909 to 1914 and in later periods, such as 1919, 1924 to 1928, 1930 to 1932, 1945 to 1947?
2. Which of the above-named periods in your opinion most nearly represents a division of the national income which is both *fair* to the agriculturally employed and attainable insofar as agriculture is concerned? Justify your answer.
3. What are the difficulties involved in comparing farm and nonfarm incomes?
4. Should farmers favor high wages for industrial workers, or not? Justify your answer.
5. What is the average income from farming in your state? What percentage of the total value product of farms is produced by farms with a value product above \$10,000, between \$6,000 and \$10,000, and so on, according to the classes shown by the Census of Agriculture?

Suggested Readings

1. Joseph S. Davis, in *On Agricultural Policy, 1926-1938* (1939), considers in a discriminating manner many aspects of rural and urban prosperity and the relationship between them.

2. W. W. Cochrane, "High-level Food Consumption in the U.S.," U.S. Department of Agriculture, *Miscellaneous Publication 581* (1945) shows how much food would be bought if all consumers enjoyed large incomes.

3. "What Peace Can Mean to American Farmers, Postwar Agriculture and Employment," U.S. Department of Agriculture, *Miscellaneous Publication 562* (1945) covers the same ground in a more general way.

4. L. H. Bean, "The Farmers' Stake in Greater Industrial Production," U.S. Department of Agriculture, *Yearbook of Agriculture, 1940*, emphasizes "the community of interest between farmers, city workers, and consumers."

CHAPTER 27

THE FARM PROBLEM AND THE GOVERNMENT

From the time of the postwar collapse of prices in 1920-1921, an almost continuous demand has come from the rural regions that the government enact legislation which would supply assistance, or relief, or equality, or justice, to those engaged in agriculture.

During the 1920's the demand for *farm relief* was largely based on four claims: (1) that agriculture had not prospered to the same degree as other economic groups during the period subsequent to the First World War; (2) that the government was to a large extent to blame for the unfavorable position of agriculture, because of the encouragement it had given to an expansion of agricultural production during the war period; (3) that prices of manufactured goods were artificially raised and maintained by the protective tariff, that transportation rates were maintained by the Interstate Commerce Commission, that other industries were assisted by similar favorable legislation, and that, therefore, equal treatment required that the government "make the tariff effective for agriculture," or in some other manner bring to agriculture a degree of prosperity equal to that enjoyed by other occupational groups; (4) that industry could not continue to prosper unless agriculture also prospered.

In the 1930's the demand for farm relief was part of the clamor from all segments of the economy for rescue from the effects of the Great Depression. In the latter 1940's, when there was little ground for claiming relief for agriculture, the pressure was for legislation that would help agriculture to maintain the high level of income it had attained by that time.

The fact that in the twenties it had required a bitter struggle, extending over ten years, for agriculture to obtain government assistance at a time when it was generally admitted to be suffering from adversity, while now there is wide agreement that it should be assisted by law in maintaining a high degree of prosperity, measures how far the country has moved in establishing the policy that it is the function of the government to take positive action to protect the welfare of each important economic group. We have left the *laissez-faire* ideas of but twenty years ago far behind.

THE BASIC ISSUES

Behind the agitation for farm relief in the twenties and the continued pressure for it in the thirties were certain basic factors, more important than the ones just listed, though they were the popular catchwords. These were largely responsible for the comparatively low per capita income from agriculture which we noted in the previous chapter and which in the last analysis must be the justification for special farm-relief measures. In considering agricultural legislation, it will be interesting to see to what extent it has met these basic issues.

The basic factors responsible for low farm income can perhaps be summarized as follows:

1. There are, or at least were, until the Second World War, too many people trying to make a living from agriculture. To put it somewhat crudely, the country is willing to spend a certain proportion of its income on food and fiber. If too many people attempt to live on what is paid for what is produced on our farms, the share of each is inadequate.

A striking proof of prewar overpopulation in agriculture is afforded by the reduction in agricultural population between 1940 and 1946, already noted, which was accompanied by a steady rise in production. There were in 1946 a little less than 27 million people on farms, and in 1945, when production had been just about as great, farm population had been 25 million as compared to 30 million in 1940. Many fewer than 27 million could produce as much as is now produced, and the number needed will be even less as techniques improve. Were government policies in the past, or are they now, directed to move people from farming to other occupations?

2. Not only are man-power resources allocated poorly in agriculture, but owing to the nature of the agricultural production process the allocation of other kinds of resources sometimes militates against a high level of income. This happens because so much agricultural capital is sunk capital, as in orchards, and cannot be shifted to other uses, and because resources have to be invested so long in advance of production, as in the case of a purchase of young heifers to build up a dairy herd. On these accounts there is little flexibility in resource allocation in agriculture, so that resources often have to be continued in uses where the returns on them are low. In other words, agricultural capital cannot be shifted easily so it often has to remain in unremunerative uses.

The failure to allocate man power and other resources properly in agriculture could be charged to the imperfections of the price system, in that low prices do not or cannot force these superfluous resources out of that use or, in some cases, induce sufficient resources into that use.

It is held by some¹ that agriculture in the South is undercapitalized. On another score, however, farmers have cause to complain that the price system works too well in that prices of farm products fluctuate more violently than those of other products. A farmer planting wheat in the spring when it was \$1.50 a bushel might find the price one-half as low when he comes to sell it in the fall and after he has sold it to see the price bounding up again.

In the body of this chapter we shall outline the legislation which has been passed to deal with the results of the resource and income situation outlined.

FARM RELIEF UNTIL 1933

At one time during the twenties there were before Congress as many as thirty bills² which aimed to correct the unfavorable farm situation. A number of such bills became laws. In 1921 the following were enacted: (1) the Emergency Tariff Act, considered primarily an agricultural relief measure; (2) the Packers and Stockyards Act; (3) the Grain Futures Act; (4) the Agricultural Credits Act, extending the powers of the War Finance Corporation. Other measures, some of which have been mentioned in previous chapters, were passed in the following years. Among these were the Capper-Volstead Act of 1922 and the Intermediate Credits Act of 1923. These acts, however, were considered by the leading champions of farm relief and equality for agriculture as dealing only with minor features of the agricultural problem. The proposals for farm relief which had the most vigorous support of agricultural leadership and organized agricultural groups, especially up to the time of the enactment of the Agricultural Marketing Act in 1929, were: (1) the equalization-fee plan, especially championed by the Farm Bureau Federation, and presented in the form of a series of McNary-Haugen bills; and (2) the export debenture plan, which has at times been called the Grange debenture plan, because it was so strongly supported by the National Grange. The equalization-fee plan, or McNary-Haugen Bill, twice passed Congress, though with somewhat different provisions. Each time it met the veto of President Coolidge, first in early 1927 and again in 1928.

The Equalization-fee and Export Debenture Plans. The equalization-fee plan, which had many variants and which was especially applicable to wheat, provided that a government board should buy up enough of a crop to raise the domestic price to a level equal to that of the world price plus tariff. Imports would be blocked by the tariff or

¹ Notably by Professor T. W. Schultz. See his *Agriculture in an Unstable Economy* (McGraw-Hill, New York, 1945), pp. 78-79.

² E. A. Stockdyk and E. West, *The Farm Board* (1930), p. 25.

specifically excluded. The board would then sell its accumulation abroad at whatever price it could get and the losses, roughly equivalent to the difference between the world price and the United States price, would be assessed against the growers in proportion to their production.

It was expected that the domestic price would be raised high enough not only to cover these losses on exports but to increase the income to a higher level than could be obtained from selling the whole crop at the world price.

The export debenture plan was aimed to accomplish the same end, but by a simpler method. Under this the exporter of an affected commodity, say cotton, would receive a certificate (called a "debenture"), giving him the right to draw on the Treasury for a specific sum for each pound exported. This would enable United States exporters to sell abroad at lower than domestic prices, and imports would be kept out as suggested above.

Both fee and debenture plans were schemes to "dump" part of a crop abroad, in order to reduce the domestic supply and raise the domestic price. Although neither was ever enacted, the ideas behind them were embodied in the AAA Act of 1933.

Since they could get neither the equalization-fee nor debenture plans passed against the opposition of the Administration, advocates of farm relief accepted, albeit reluctantly, the policy of raising farm prices by enlarging and improving selling cooperatives and by stabilization (purchase and holding) operations as embodied in the Agricultural Marketing Act of 1929.

The Federal Farm Board. The Federal Farm Board was created by the Agricultural Marketing Act of June, 1929. The board was expected to enlarge and improve the system of cooperative marketing of farm products. Before it could do anything in this direction, the disastrous price declines of the early part of the depression had begun and the board turned its efforts to holding up prices, especially those of wheat and cotton. It did this chiefly by lending money to what were called "stabilization corporations," to enable them to hold large stocks of these commodities off the market. The collapse of demand was so great that prices fell precipitously despite the large proportion of the crops withdrawn from the market by the board. The stocks of wheat and cotton acquired were finally given to the Red Cross or sold at very low prices, so that 329 million dollars of an original fund of 500 millions was lost.

The history of the Farm Board served to demonstrate one lesson that was of value when the time came to establish the Agricultural Adjustment Administration. This was the futility of attempting to influence prices by withholding stocks from the market, particularly if the funds avail-

able are distinctly limited, unless there is at the same time control of supply. Otherwise, any success at holding up prices kicks back, because it induces farmers to grow and send even more to market than they would otherwise.³

Although overshadowed by its effort to support prices, the board did attempt to establish a system of nationwide cooperatives for the major crops. Unfortunately because it was in a hurry, because it needed by terms of its basic law a cooperative structure as an instrument for its price-support activities, these national cooperatives were largely paper creations, imposed from the top down on state or local associations.

Most of the national cooperatives founded by the board went out of existence soon after the board's demise in 1933. Thus another lesson was taught, that cooperatives, even with considerable government assistance, cannot survive unless there is a real economic need for them, unless they grow from the ground up. The FCA, which through its banks for cooperatives took over the loans to cooperatives made by the Farm Board, has followed a cautious policy of waiting till the farmers want a cooperative and demonstrate its usefulness before making loans to assist the cooperative in establishing itself.

Though operations under it ended in failure, the Agricultural Marketing Act of 1929 can be regarded as having first established the national policy that it is part of the government's function to take positive steps to influence farm prices directly. When the new administration took office in 1933, the question was not whether it would try to raise farm prices and income, but how it would.

THE AGRICULTURAL ADJUSTMENT AND SOIL CONSERVATION ACTS

The Allotment Idea. In 1926 and 1927 a plan of farm relief which later became known as the Domestic Allotment Plan began to receive publicity in the press. By this plan it was also proposed to use the power of the government to raise prices for products on an export basis and on which, therefore, a tariff was ineffective. The basic principle of the plan was that each producer should be allotted an amount of product to be produced, in most cases equal to the same percentage of his total production during some previous period of years as the nation's total domestic consumption was of its total production. If 75 per cent of the nation's production of the product was domestically consumed, each producer was to be allotted 75 per cent of the amount he produced during the period of years used as a base. In general, it was contemplated that the plan would be so operated that for his allotted amount the producer should receive the price based on the world market and something addi-

³ T. Norman, *The Federal Farm Board*, doctoral dissertation, Harvard University, 1939.

tional. For all produced in excess of this amount he should receive only a price based on a free market, in most cases the world or export market. The allotment device was designed to prevent increased money receipts by producers from resulting in increased production. This plan became an important feature of the Agricultural Adjustment Act.

Contributing Events. A few of the events which led to the passage of the Agricultural Adjustment Act as well as to the agricultural-credit legislation enacted at the same time may well be mentioned. By early 1933 the prices of farm products had declined so much more than the prices of commodities bought by farmers that all farm products possessed a

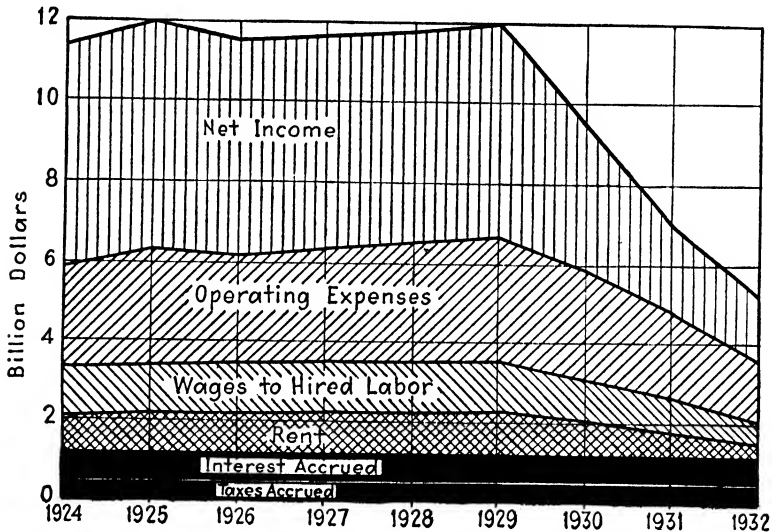


FIG. 46. Gross farm income and expenditures, 1924-1932. Source: BAE, USDA.

purchasing power over commodities bought amounting to little more than half of such purchasing power from 1925 to 1929. The purchasing power of grain had declined to one-third that of 1925 to 1929. After paying for operating expenses, farmers had available as the combined return for their labor and capital in 1932 less than one-fourth as much as from 1925 to 1929 (see Fig. 46). The money return from these sources and available for living expenses in 1932 averaged only about \$200 per farm. Huge carry-overs of wheat and cotton had accumulated, and foreign countries were putting increased restrictions on their imports of farm products (see Fig. 47).

In explaining the causes of this situation, H. R. Tolley, then assistant administrator of the AAA, in an address delivered in January, 1934, said:

During the [first] World War some 50 million acres in Europe, not counting Russia, went out of cultivation. The United States brought about 40 million

more acres into cultivation and geared up its whole farm plant into a higher production. After the war we kept it up. We kept on farming as if there were still great hungry foreign markets crying for our crops. In reality, such markets were rapidly dwindling. The world owed us money; we would not accept goods in return. With our tariff wall as it was, and still is, the only way we could keep up the appearance of a great foreign custom was to lend those other nations more and more money with which to keep on taking our food and fabrics. This is what we did until about 1928. Finally we got sense enough to quit it; the false front of our foreign farming at once collapsed; and we had at last to face the fact that we were farming at least 40 million acres too much land.

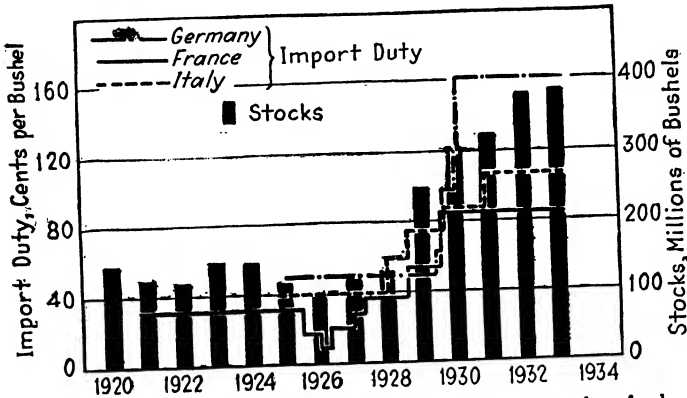


FIG. 47. Foreign import duties on wheat, and United States stocks of wheat, July 1, 1920-1933. Source: BAE, USDA.

The Agricultural Adjustment Act of 1933. This act stated the objective of Congress to be the reestablishment of prices for farm products which would give these products a purchasing power with respect to articles that farmers buy equivalent to that possessed in some previous period of favorable prices, commonly designated as a period of *parity prices*. That period for all commodities except tobacco originally was from August, 1909, through July, 1914. For commodities designated as "basic" this objective was to be accomplished primarily by the levying of processing taxes and the making of benefit payments. Rental or benefit payments were to be made by the Secretary of Agriculture to farmers for reductions in acreage or reductions in production for market. To provide the revenue to make these payments, the Secretary was authorized to levy processing taxes on the first domestic processing of any commodity on which rental or benefit payments were to be made. For any commodity, whether designated as basic or not, the Secretary also was authorized to enter into marketing agreements with processors, associations of producers, and other handlers, or to license all these, in

order to eliminate unfair practices and to promote the objective of the act.

To administer the act the Secretary organized the Agricultural Adjustment Administration, which became known as the AAA. In the first year, programs were undertaken for five of the seven commodities originally designated as basic. Farmers who wished to receive rental or benefit payments were required to organize production-control associations. Through these the farmers were given "allotments" of acres or products, and as individuals they were privileged to enter contracts with the Secretary to limit their production to these allotments. If they carried out their contracts, they received benefit payments. During the first year about 3 million farmers, nearly half of the total of the nation, became members of production-control associations, and received about 250 million dollars in benefit payments for practicing production control.

Loans also were made to farmers to withhold crops from markets. Thirty-five marketing agreements with processors and handlers had been placed in effect by Feb. 1, 1934, and, in connection with twenty-nine of these, dealers were licensed.

In the first half of 1934, the Jones-Connally Cattle Act, the Bankhead-Jones Cotton Act, the Kerr-Smith Tobacco Act, and the Jones-Costigan Sugar Act also became laws. The first of these provided by direct appropriation 250 million dollars for surplus reductions and disease elimination in the dairy- and beef-cattle industries. It also increased the list of commodities designated as *basic*. The next two acts revised the Agricultural Adjustment Act of 1933 for cotton and tobacco, especially in that they made production control or marketing control compulsory instead of voluntary. Provision was made for individual marketing quotas for all producers of cotton and tobacco, and taxes were imposed on quantities marketed in excess of these quotas. For sugar a processing tax was placed on imported as well as domestic sugar, and provision made for production control by means of benefit payments. In 1935 the Warren Potato Act, similar to the above-described cotton and tobacco acts, became a law.

During the year 1934, total government benefit payments to farmers on all commodities amounted to 447 million dollars, and during 1935 to 573 million dollars. On Jan. 6, 1936, the Supreme Court, in the *Hoosac Mills* case, declared unconstitutional and invalid the contract for the production-control and the processing-tax features of the Agricultural Adjustment Act of 1933. Thereafter the acts providing for compulsory production control were repealed.

The Soil Conservation and Domestic Allotment Act of 1936, the Sugar Act of 1937, and the Marketing Agreement Act of 1937. On

Feb. 28, 1936, within eight weeks after the Hoosac Mills decision, Congress enacted the Soil Conservation and Domestic Allotment Act of 1936. Under this act benefit payments are made to producers out of general treasury funds for shifting from such "soil-depleting" crops as cotton, corn, wheat, tobacco, and rice to such "soil-conserving" crops as grasses and legumes and for carrying out certain other soil-building practices. The administration of this act also was placed in the hands of the Secretary of Agriculture.

Under its provisions "goals" of desirable acreages of different soil-depleting crops, considered sufficient to provide adequate supplies but less than previous acreages, and also "goals" of soil-conserving crops, were worked out for the nation, and for states, and were allocated to different farms by county and local committees. Farmers who did not exceed the goals for soil-depleting crops and who attained the goals for soil-conserving crops and practices have received payments for their contribution to soil conservation.

A new sugar act became law in 1937. This established quotas of sugar to be produced in the United States and each of its sugar-producing territories and possessions and to be imported from the Philippines and Cuba. An excise tax of 50 cents per 100 pounds, raw value, was placed on all domestic and imported sugar. Restrictions were placed on child labor and minimum wages. Conditional payments to producers who observe its provisions were authorized at a basic rate of 60 cents per hundred pounds, raw value, equivalent to about \$1.90 per ton of sugar beets.

The marketing-agreement provisions of the Agricultural Adjustment Act of 1933 were not as a whole declared invalid in the Hoosac Mills decision of 1936. Nevertheless, in 1937, a new Marketing Agreement Act was enacted, designed to strengthen the marketing-agreement provisions of the original law. By it, marketing agreements are limited to designated commodities, including fruits and vegetables with designated exceptions, milk, and a few other products. For any of these commodities the Secretary may, after a public hearing, if he concludes that such procedure will promote the purposes of the act, enter into a marketing agreement with handlers or issue orders (of designated kinds, and no others) designed to promote an approach to "parity" prices. If orders are to be effective, however, the Secretary must determine by means of a referendum vote that their issuance is approved or favored by two-thirds of the producers of the commodity, or the producers of two-thirds of the total volume within the marketing area specified in the marketing agreement. For milk, but not for other products, the Secretary may, under the conditions stated, issue orders fixing minimum prices to producers. For other commodities, orders may be issued limiting (as a whole, or by grades or quality) the quantity which may be

shipped in interstate commerce, and establishing maximum quotas which may be handled by different dealers. Such orders, properly issued and approved, have the effect of law.

The Agricultural Adjustment Act of 1938. In February of 1938 Congress enacted the Agricultural Adjustment Act of 1938, which is broader in scope than any previous farm-relief legislation. Among its most significant provisions are the following:

1. The soil-conservation program was continued, though modified for the purpose of strengthening it.

2. National acreage allotments are provided for cotton, wheat, corn, and rice, and under certain conditions marketing quotas are provided for these products and also tobacco. Methods of calculating these allotments differ for the different commodities. With wheat the national acreage allotment for any year is such as will normally make available from production and carry-over from the previous year a supply equal to 130 per cent of a normal year's domestic consumption and exports. The allotments are apportioned to states and counties, and within the counties are apportioned among individual farmers through county and community committees. Farmers who do not exceed their allotments are designated *cooperators* and are granted certain privileges which are not available to noncooperators.

3. Storage loans through the Commodity Credit Corporation, which were instituted under the act of 1933, are continued. Under certain conditions such loans are made available to all producers of the products, but, under other conditions, only to cooperators.

4. Marketing quotas may be established in years when surpluses exceed certain specified amounts which are considered excessive. Such quotas may not be put into effect without a referendum vote of all the producers of the commodity for which they are proposed, and to be put into effect must receive the approval of two-thirds of those voting. Penalties are provided for farmers who market amounts in excess of their quotas in case such are declared in effect.

5. Additional parity or price-adjustment payments to producers of corn, cotton, wheat, tobacco, and rice are established for cooperators if money is later appropriated for that purpose.

Money was appropriated under this provision every year till 1948. The theory of these payments was that inasmuch as the producers of these crops were not receiving parity prices, additional compensation was due them to bring their receipts as close to parity as possible. Although prices of these products were in general above parity after 1942 or 1943, the payments were continued for several years thereafter.

Section 32. Another important piece of agricultural legislation which should be mentioned is Section 32, passed in 1935 as an amendment to the original AAA Act (it was not affected by the Hoosac Mills decision) and since greatly broadened.

Section 32 provides the authority for so-called surplus disposal programs. These include:

1. The payment of subsidies to enlarge exports. This is in effect the old export debenture plan. Before the United States entered the Second World War, there were in force subsidy programs on cotton and wheat, as well as some minor crops.
2. Programs to find new uses for agricultural commodities, for example, making insulation material out of cotton.
3. Disposal of "surplus" commodities into uses ordinarily uneconomic. Thus the government makes payments to enable potatoes to be used as livestock feed, in order to reduce the supply and raise the price of table stock.
4. Assisting low-income persons, particularly those on relief, to enlarge their food and fiber consumption. For example, Section 32 money was used to donate food to persons on relief and furnished the funds whereby the Food and Cotton Stamp Plans supplemented the regular purchases of relief clients. The funds for the School Lunch Plan, which now has been set up under specific legislation divorced from any relief implications, also are authorized by Section 32.

The word "surplus" which appeared frequently in the preceding discussion and which was perhaps the most frequently used of all words in prewar discussions of the agricultural situation, requires some explanation.

A "surplus" means a quantity in excess, but the important question here is "In excess of what?" Sometimes in discussions of agricultural policy surplus means exportable surplus, the amount of cotton or wheat available above domestic needs; sometimes it means a seasonal or regional surplus, the excess above the requirements of a particular time or area, sometimes it means an economic surplus, that part of the supply which so enlarges the total supply as to bring the market price below what is considered a "fair" price. In general, discussion and legislation concern themselves with this last kind of surplus. The difficulty is that no one knows what is the "fair" price which cannot be attained because of the existence of the surplus. Is it the cost of production, the producer's idea of a proper price, the consumer's notion of what he ought to pay? The official standard of a "fair" price for a commodity is presumably the parity price, explained on page 625.

Wartime Legislation. As the world's great need for food and fiber became apparent during the Second World War, the various production restrictions on the basic crops were dropped, so that by the spring of 1948 only tobacco and potato production were subject to control. The emphasis from 1941 to 1948 was on the expansion, not contraction, of supplies.

Just before Pearl Harbor, as an outgrowth of the government's attempts to expand production, two significant pieces of legislation were passed. The first was the Bankhead Bill, which provided that CCC loans on the basic commodities have to be at 90 per cent of parity,

except for cotton, where the minimum level is 92½ per cent. In effect this assured the growers of these crops 90 per cent of parity, because of the nonrecourse character of CCC loans.

More important is the Steagall amendment to the law establishing the CCC, which provided that during the war and for two years after the termination of hostilities the price of any crop, the production of which the Secretary of Agriculture officially proclaimed should be expanded in the interest of the war effort, had to be supported at least at 90 per cent of parity. This was to be in addition to the price support program for the "basic" crops. The means of support were left to the discretion of the U.S. Department of Agriculture, which could use loans, purchase, disposal, or export programs. The principal Steagall commodities are hogs, milk, butterfat, potatoes, eggs, poultry.

Because of the very high domestic and foreign demand that prevailed through 1948 the only major crops that had to be supported up to that year under the Steagall amendment were potatoes, on which there have been loans, purchase and disposal operations, and export subsidies; and eggs, which have been purchased, processed, and exported.

The Surplus Disposal Act of 1944 might also be mentioned, as it regulates the conditions under which the CCC can export commodities for the purpose of enhancing domestic prices.

Postwar Legislation. From the end of the war to 1948, in addition to the Hope-Flanagan Marketing Research Bill, discussed on page 552, three more important laws directly affecting agricultural policy were enacted. These are the Sugar and Wool Acts, both passed in 1947, and the general farm price-support bill, called the Agricultural Act of 1948, passed in June, 1948. The Sugar Act is basically a continuation of the original Sugar Act as it reinstates quotas on offshore and foreign sugar, which had been suspended during the war. It also directs the U.S. Department of Agriculture to set imports and domestic production at such levels as would maintain sugar prices at the same relationship to the wholesale price level as they had in 1947.

The Wool Bill provides that the CCC should buy the wool crop at a price at least 90 per cent of parity and sell it in the market at the best price possible, the losses to be paid by the CCC. It is in effect a subsidy to United States wool growers in addition to the assistance provided by the tariff.

Since the price support provisions of the Steagall amendment were to expire at the end of 1948, and since it was widely felt that the basic law, the Agricultural Adjustment Act of 1938, required overhauling, 1947 and 1948 were marked by extensive discussion of problems of agriculture, particularly before the Agricultural Committee of the House of Representatives, which held a long series of hearings on basic agricultural

policy. It had been intended to write a new basic law as an outcome of the hearings, but agreement could not be obtained and in order to maintain price supports beyond the end of 1948, a very hastily drawn up act was passed in the hectic last days of the Congressional session in June, 1948.

This law maintains the price-support level of 90 per cent at parity for basic commodities till June 30, 1950, and for the principal Steagall commodities—dairy and poultry products, hogs and white potatoes—till Jan. 1, 1950. Thereafter, on the Steagall and other nonbasic commodities, price supports can but need not be as high as 90 per cent of the parity price. For basic commodities after Jan. 1, 1950, the support price is related to production. If supply is 130 per cent of "normal," the government need only support prices at 60 per cent of parity; if, however, supply is only 70 per cent of normal, the support price will be 90 per cent.

The wool price-support policy is made more flexible. Prices must be supported between 60 to 90 per cent of parity, but the price between these levels must be such that at least 360 million pounds are produced in this country. After Dec. 31, 1949, white potatoes must also be supported at between 60 and 90 per cent of parity.

The other important provision of the bill modernizes the parity formula by adjusting the 1909 to 1914 base period to the price relationships in the ten-year period preceding the determination of a new parity price.

The introduction of a more flexible price support policy after 1950 and the modernization of the parity formula are to be commended, but the Agricultural Act of 1948 did not, as President Truman pointed out, "strengthen the soil conservation program, nor did it provide a program for improving the diet of low-income families, not to mention its failure to deal with rural housing, health and education."

As amended in October, 1949, this bill provides that prices of basic commodities be supported at 90 per cent of parity through 1950, at 80 to 90 per cent through 1951, and 75 to 90 per cent thereafter on condition these crops be placed under production or marketing controls. Most other commodities must be supported at 60 to 90 per cent of parity.

QUESTIONS OF AGRICULTURAL POLICY

Status of American Agriculture, 1948. In the twenties and thirties, those who were interested in improving the economic welfare of agriculture felt that the main problem to be faced was one of adjusting an overly large supply to a shrinking demand, foreign and domestic. Thus, they emphasized limitations in production, the exportation or domestic disposal of surpluses so as to raise the prices of that part of the supply

going into the regular channels of trade, the withholding of large crops, the subsidization of domestic demand through Section 32 programs, as well as the subsidization of exports.

The situation in 1948 was quite different. For seven or eight years previous farmers had been urged to expand their production, and they responded so that agricultural output increased about one-fourth to one-third above the prewar level. Yet, because of full employment and immense purchasing power at home and unfilled demand abroad (largely financed through American dollars), prices were very high and net income in dollar or real terms at the highest level in history.

Agricultural groups naturally are desirous of maintaining this agreeable state of affairs as far as possible. That it can be maintained fully at the 1947 to 1948 level is doubtful. As Western European wheat production returns to normal, and when (if ever) the Danubian countries again export large quantities of grain, demand for United States wheat will weaken. So will the demand for fats, as more grain for animal feeding becomes available in Europe, the whaling industry returns to normal, and Indonesia again exports large quantities of palm and coconut oil.

The lessened foreign demand for grains will affect not only grain prices but also those of milk, meat, and poultry products, for which grain is the raw material. Nevertheless, as noted in Chaps. 20 and 26, the domestic demand for food is so great that this fall should not be very serious, assuming employment and income stay up at the high 1947 to 1948 rate. This is, of course, the nub of the problem. If America is prosperous there probably will be no serious agricultural problem, though a great number of relatively minor adjustments will be necessary. If the country suffers a severe depression, then agriculture's problems will be major, as will be those of the other segments of the economy. In any case, all this adds up to saying that whether agriculture is well off or not depends on forces largely outside the agricultural sphere, those forces which determine the level of business activity.

Nevertheless, regardless of the state of business in general, there are many measures that can be taken to raise agricultural income. The intensity with which such measures should be used, and whether some should be used at all, depends upon the level of demand. Before, however, discussing such proposals, we shall first say a word about the parity goal for farm prices and income.

Parity. A *parity price* for a farm product is one that bears the same relationship to the present cost of things bought by farmers as did the price of that commodity in 1910 to 1914 to the cost of things farmers bought then. Parity income for agriculture would be an income that bears the same relation to nonagricultural income as it did in 1910 to 1914. Although parity prices and parity income are both specified as

the goals of national policy in the Triple A legislation, in actual practice parity prices only have been the subject of discussion and the guides of official action.

There has been a great deal of well-justified criticism about the use of the parity formula for this purpose. Most of it centers around the fact that relationships prevailing before two wars and a technological revolution have no meaning now. Because it required (say) 500 bushels of wheat to buy a wagon in 1910 to 1914 is no reason that a farmer should now pay some 500 bushels for a wagon, especially when it is not a wagon he wants but a motor truck. The cost-and-price relationships of the period before the First World War are totally inapplicable now that processes and products have so changed.

Because the parity formula tends to cause prices of agricultural products to bear the same relationship to each other as they did in the base period, desirable production adjustments are prevented. Thus, the 90 per cent of parity mandatory support price for potatoes induced farmers to grow more than consumers were willing to buy at that price.

The 1948 law modifying the old parity formula by relating it to a recent ten-year period went some length in meeting these objections, though any arbitrary standard will always be open to criticism. As long, however, as government policy is directed to influencing agricultural prices and income, presumably there has to be some standard for policy makers to go by. It is advisable that this standard be fixed by a formula, so that officials will not have the burden and responsibility of deciding on every individual price.

PROPOSALS UNDER CONSIDERATION

On one point everyone apparently is agreed; that it is a legitimate and necessary function of the government to assist farmers, to undertake measures to enhance or maintain their income, and to guide their production. It may be noted, incidentally, that there is no necessary relation between protecting farm income and guiding production, although it is easier to maintain income if production is controlled. Another point on which there is practically universal agreement is that policy should be directed to maintaining, if not increasing, the high levels of output attained from 1942 on. Abundance is the motto of everybody discussing the agricultural situation. But as we have so many times already noticed, if this abundance is produced, it will be sold at remunerative prices only if consumers have jobs and thereby the ability to buy. In that case our expanded agricultural plant will not be forced to contract materially even if export outlets are reduced. While our present "cropland with present yields will support about 190,000,000 people on a low-cost diet or an average diet, depending on the amounts of

imports assumed . . . it would support only about 140,000,000 to 150,000,000 people on a liberal diet."⁴ If Americans can afford a diet liberal in meat and milk products, which need more acreage per calorie than grain, all our present crop land can be used and more, even without exports. But it all depends on the demand. "It takes no imagination to see the possibility of eliminating the old problem of surpluses if we have the means to eat what we really want."⁵

Another point on which there is apparently widespread agreement is that the soil-conservation programs should be continued, the more so as the high war and postwar production rate put a strain on some of our land resources, especially in the wheat area. Conversion of our agriculture to produce more livestock products would be a move in the direction of conservation, for a livestock agriculture is soil-conserving as well as being a way of employing our present acreage if export demand should fall off.

The proposals now to be discussed which have as their object the maintenance of agricultural prices and income during a depression do not have such unanimity of support. There is, however, wide sentiment for continuing the CCC loan program. The issue here concerns the level at which loans should be granted. If it is high, then we are in danger of repeating the experience of the Farm Board, or of being in the position the CCC was in 1940, when it was loaded with cotton and grain that it could never have disposed of if not for the war. A loan at a moderate level, that is, at a level which will not unduly limit consumption, serves two purposes, especially insofar as grain is concerned: (1) it assures the producer of a market for his output; and (2) it may be a step toward providing an "ever normal" granary. As Professor Theodore Schultz noted,⁶ the American livestock economy is very unstable, and one way of stabilizing it would be by having ample supplies of grain always available. Therefore he advocates carrying much larger stocks of grain than customary in the past. A loan level that would, in years of large production, enable consumers to take their accustomed quantity and yet be high enough to attract the remainder into storage would seem to be a necessary adjunct to a program of stabilizing the livestock industry, because it would help assure an ample supply of grain at all times. Such a supply of grain would tend to stabilize the supply of livestock because shifts in the supply of livestock, particularly of hogs, are largely due to recurring shortages and surpluses of grain.

The 1948 law providing support for the basic crops inversely to the

⁴ *Hearings*, House Agriculture Committee, "Long Range Agricultural Policy," Part 1, Apr. 21, 1947, p. 5, testimony of Secretary Anderson.

⁵ *Ibid.*, p. 6.

⁶ *Hearings*, House Agricultural Committee, Part 5, p. 168.

size of the supply went some distance in meeting this requirement. Some few advocate using the loan policy consciously to stabilize prices not only by upholding them in times of depression or very large crops, but also by selling out of accumulations in times of scarcity or inflation. This is sometimes called the "buffer" stock policy. Its success would depend upon a willingness to sell as well as buy. Most advocates of the nonrecourse-loan method of supporting farm prices forget, as the Farm Board experience emphasized, that both are necessary operations.

Direct production control has few advocates, though it is recognized that if worst comes to worst and really bad depression conditions return, with a collapse in demand, it may be necessary.

Incidentally, many of those who most vociferously oppose production controls are at the same time strongly in favor of price-raising measures which encourage expansion of production, ultimately forcing the compulsory curtailment of supply or export dumping in one form or another. Many people believe, however, because of the good credit position of agriculture and the direct price-support that will be afforded by the government, as well as its programs to maintain economic activity in general, that agricultural "prices will never collapse to the extent they did in 1931 to 1932."⁷ The 1948 law provides that the Secretary of Agriculture may require compliance with production limitations as a condition for price support in the case of nonbasic commodities.

Compensatory Payments. One method of controlling production indirectly, and at the same time affording a measure of income support, is the *compensatory-payment plan*,⁸ which is sometimes combined with the idea of the *forward price*. A forward price is a price announced in advance which the government pledges to support. If the price actually received by growers is less than the forward price, the government will grant them *compensatory payments* to make up the difference. The advantages claimed for this plan, which has many variants, are as follows:

1. Direction can be given to production through the forward-pricing plan. If the government after some years finds that its prices have been too high, and that it therefore has to make large payments, in subsequent years the support price can be lowered, which presumably will discourage planting. This is an easier method of production control than giving each farmer an individual allotment. He knows what the support price is and can exercise his own judgment accordingly.

2. Under the compensatory-payment plan, the crop is marketed freely at its normal economic value; there is no artificial price and no piling up of stocks. Farmers' income, however, is maintained by the payments.

3. The forward-pricing plan is one that would support income by means of compensatory payments and guide production through forward prices. As noted earlier,

⁷ *Ibid.*

⁸ This was essentially the idea of the "Brannan" plan, presented to Congress in 1949 but rejected by it.

these two functions are not the same and under this proposal are accomplished by quite different methods, which permit the incomes of growers of a particular crop to be maintained, while its production can be discouraged.

The criticisms of the plan relate, in the first place, to the expenditures for payments, which could be very large, though this is hardly a unique feature of this particular scheme of farm relief. In the second place, and more serious, perhaps, is the difficulty that the government agency in charge would have to do a very superior and accurate job of forecasting. Inaccurate forecasts might result in crops too small or payments too large. On the other hand, if forward pricing had to be done in accordance with an arbitrary standard, such as parity, one of the main advantages of the compensatory scheme, the ability to shift agricultural resources from one crop to another, would be lost. In the third place, the administrative officials establishing the forward prices and the compensatory payments could be under the most extreme political pressure from the growers of the crops affected. The same is true of any officials administering a program which bears on prices and incomes, but because of the direct influence of this proposal on prices the pressure might be greater than usual.

Although farm politicians have in general manifested a strong dislike for this proposal, it appears sufficiently meritorious to warrant the most serious consideration.

Food Stamps. The measures discussed above relate directly to farmers and farm prices. It is also proposed that demand for food and thereby its price be bolstered by supplementing the diet of low-income families.

For this purpose, an expansion of the Food Stamp Plan, in operation from 1939 to 1942, has been suggested. The basic provision would be that all families, whether on relief or not, having less than a specified (low) annual income would receive stamps from the government to supplement their own expenditures on food. These stamps would be used for the purchase of food and storekeepers could cash them at the Treasury. Various devices, which may not be fully effective, are included to force stamp recipients to continue their usual rate of food expenditure, so that the stamps will supplement, not substitute for, the money regularly going for food.

In time of prosperity, this plan would probably not be very significant. In times of depression, however, though it would be expensive, it would be a sensible way of avoiding that disgraceful paradox of "starvation amidst plenty" that marked the Great Depression, when millions of city people went hungry for lack of means to buy food, and farm prices sagged as stocks of wheat and corn, for which there were no customers able to pay, piled up.

CONCLUSION

At the beginning of this chapter we sketched the basic problems which farm-relief policies ought to face. How far have the measures just discussed affected the misallocation of man power and other resources in agriculture? On the whole it can be said that almost all our farm programs have attempted to deal with the symptom, low incomes and low prices, rather than the cause, overpopulation; or it would be more accurate to say, overpopulation in certain areas, especially in the South. The same is true of most proposals for the future. To some extent, in fact, measures intended to increase and stabilize income and prices may have contributed to the population problem by making it possible for many people to stay on farms who otherwise would have been forced off. It must be noted, though, that forcing people out of agriculture through grinding down their income is hardly a desirable way of bringing about a redistribution of population.

On the side of the allocation of material resources, something has been done to direct the use of land into remunerative channels by setting up production goals and limiting the production of certain crops. The forward-pricing and compensatory-payment schemes would do more in this direction. A great deal has been done to conserve our material agricultural resources, though much more work in this direction still remains to be done.

On the basic problem of excess man power and its consequences, however, not only has little been done in the past, but few of the proposals for the future are intended to deal with it. Even if all the measures discussed in the previous section were enacted into law, the deficiencies noted by President Truman would still remain. Provision would still have to be made to bring rural housing,⁹ as well as health and educational services, up to the urban level. In part the lower standard of these services in farm areas is due to purely physical conditions. Farm people being scattered, it is harder to provide health services, for instance, to an equivalent number of country people than city residents. More of the disadvantage, however, has been the result of the lower per capita income of farmers as compared to nonfarmers, which, in turn, was in large part due to the fact that too many people were trying to make a living out of agriculture.

It is true that the very high level of industrial activity since 1941 went a long way to cure this state of affairs. Agricultural income, three years after the end of the war, had risen more above prewar levels than had nonagricultural, and the high wages in industry had attracted vast numbers of people from the farm. Indeed, one of the few blessings of the

⁹ The Housing Bill of 1949 included a provision to subsidize rural housing.

war was that it moved elsewhere great numbers of people who were not needed on the farm and who were not making adequate livings there.

Unquestionably the improvement in farm income will lead to an improvement in the services mentioned. Nevertheless, the distance to go is considerable and the government should render assistance to our agricultural areas in overcoming the differential between urban and rural services.

In the previous chapter we pointed to the existence of two "worlds" in American agriculture. The deficiencies we have mentioned are, as would be expected, much more pressing and serious in the poorer of these. It is in this poorer agricultural world also that the birth rate is higher than anywhere else in the United States. Therefore, because of present deficiencies, present overpopulation, and expected continuance of a high birth rate, the Federal government ought to undertake a special program for channeling excess population out of the southern Appalachians and other similar areas.

A much more important influence on population movements than the government is the state of business, for nothing will draw off excess farm population so well as a high level of industrial activity. The Federal government should assist off-the-farm movement by providing vocational training and guidance in rural areas directed toward urban employment. In addition, since the government now grants loans to tenants or farm workers to enable them to become owners, it would involve no very radical extension of present programs if it loaned or granted money to farm people in areas of excess population to learn industrial skills or even to set up in small business. In this way a beginning at least would be made in grappling with the basic agricultural issue.

While measures of this sort should be put into effect to attack the problem of rural overpopulation in those large areas where it is still a matter of concern, it must not be forgotten that rural housing, education, and health conditions in general are not up to urban standards and that farmers and farm workers are still outside the social-security system. The government should help farmers to enjoy all these things equally with their urban brothers. There is no reason in law or economics why provision for farmers' security, health, education, and housing should not be on a par with that for nonfarmers or why farmers' per capita income should be lower.

Questions and Problems

1. Summarize the conditions which led to the widespread agitation for farm-relief legislation during the 1920's and the early 1930's.
2. What are the basic causes of the comparatively low income from agriculture?
3. What was the declared purpose of the establishment of the Federal Farm Board, and what did it accomplish?

4. What were the objects of the Agricultural Adjustment legislation of 1933 to 1938, and what were the methods employed to accomplish them?
5. What are the important features of the Agricultural Act of 1948?
6. What are the principal proposals for further agricultural legislation?
7. In your view, what are the chief deficiencies of our national agricultural policy? How would you correct them?

Suggested Readings

1. John D. Black, *Agricultural Reform* (1929), though dealing with proposals and problems that are to some extent outdated, still remains an example of what a book dealing with agricultural policy ought to be.
2. John D. Black, *Parity, Parity, Parity* (1942), is a very interesting discussion of the methods of establishing standards for price and income policy.
3. T. W. Schultz, *Redirecting Farm Policy* (1943), is a very stimulating presentation of the point that the price and income problem and the resource-allocation problem are distinct and should be dealt with separately.
4. T. W. Schultz, *Agriculture in an Unstable Economy* (1945), is a comprehensive program for curing the ills of agriculture.
5. Joseph S. Davis, *On Agricultural Policy 1926-1938* (1939), covers a wide range of material on the subject and probably constitutes the best published discussion of our agricultural policy by one who believes that much of it has been unwise.
6. "What Peace Means to American Farmers: Agricultural Policy," U.S. Department of Agriculture, *Miscellaneous Publication 589* (1945), is a very interesting presentation of the basic agricultural problems and proposals for dealing with them.
7. Current issues of the *Journal of Farm Economics* will furnish information on recent developments and contain discussions of controversial matters.
8. *Journal of Farm Economics*, November, 1945. This issue contains the prize papers submitted in an contest for the best proposal for a price policy for agriculture and thus affords a review of postwar proposals to maintain or improve the condition of agriculture.

CHAPTER 28

BUSINESS CYCLES AND DEPRESSIONS

The growth of production, trade, and per capita income has not been steady but has been subject to oscillations in the form of alternate periods of prosperity and depression. This is true whether the reference is to rural or to urban prosperity. In agriculture these changes have occurred primarily in prices received for goods sold on the market rather than in amount of production. In urban industries as a whole the change is to a greater degree in amount of production and trade than in prices. Though the prices of some urban products change as much as do prices of farm products, others do not change at all or but little, in spite of the fact that there are tremendous changes in employment and sales. Our concern in this chapter will be principally with changes in urban business activity, as it is the latter to which people ordinarily refer when they speak of business conditions, or the business cycle.

In Fig. 48 are represented changes in business activity since 1900, as calculated by the Cleveland Trust Company. More than normal business activity or prosperity is represented by the area above the 100 per cent line and depression by the black area below that line. It will be noted that an alternation of good and bad times has repeatedly occurred since 1900, and, if the chart had been extended backward, we should have seen alternating periods of good and bad times since we became a nation.

The chart shows that there were during the half century from 1900 to 1948 11 periods of depression and 10 of relative prosperity, some pronounced, some minor. If we were to refer to the whole of the index of "American Business Activity Since 1790," published by the Cleveland Trust Company, of which this is a part, we should note about 35 periods of prosperity and an equal number of depressions during this span of a little more than 140 years.

Our major past depressions are well known by their years of greatest severity. We have all read of the severe panics of 1837 and 1857. Men still living can recount the trials of '93. The panic of 1907 is well remembered by those who lived through it, as is also the postwar collapse in 1921. Apparently this problem of "booms and depressions" has been a continuous one. Nevertheless, it is a problem which may be overcome or at least modified by human intelligence.

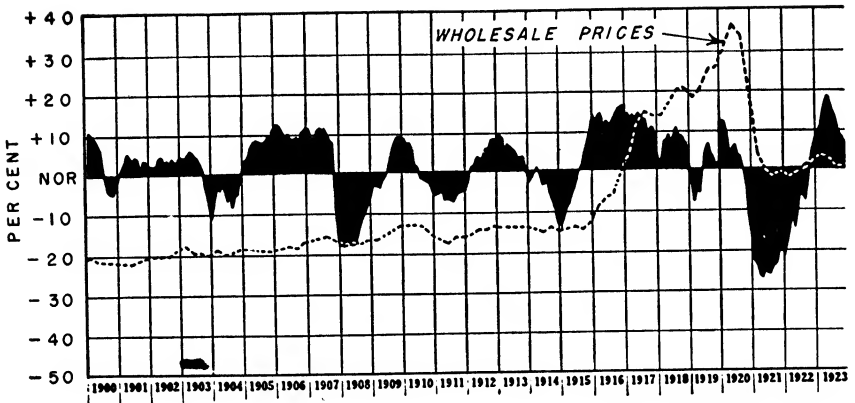


FIG. 48. American busi-

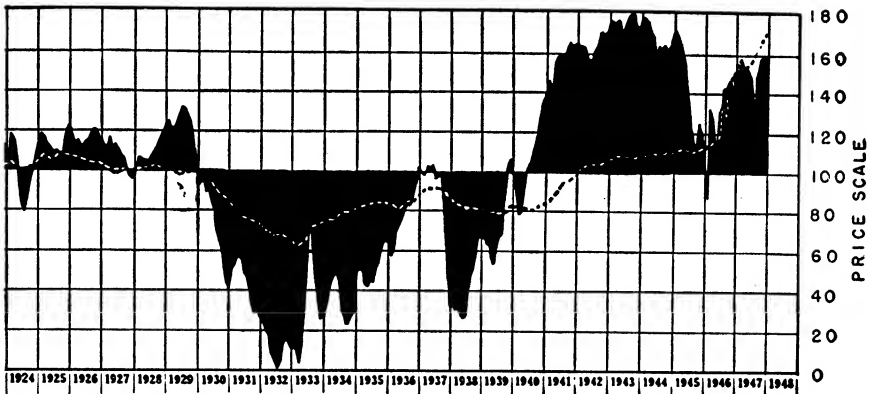
Source: *Chart of American business activity since 1790, copy-*

In the period from 1923 to 1929 we heard much of a New Era and of our successful battle against depression. But the years 1930 to 1933 witnessed the most severe decline in business activity from a previously attained level in our history. Some students of the depression of the early 1930's maintain, moreover, that it was more than an ordinary business depression or phase of a business cycle; that it was a sign the capitalist system had passed its peak.

Certainly these alternating periods of prosperity and of depression are one of our *greatest economic problems*. In comparison with it, other problems seem minor, particularly if one considers that most of the other seemingly distinct problems are but ramifications of this major one.

If the effects of the recurrent periods of inactivity and low prices were spread uniformly over all members of society, the consequences would not be so severe as they now are. There would be only a general reduction in per capita income and in planes of living. But in fact, the burden rests primarily on those least able to bear the load—the unemployed worker, the weak business enterprise, and the farmer—a situation that makes these periods of depression an even graver social problem. Is it any wonder that some question the adequacy of the capitalistic system, particularly during such times as the early 1930's?

The serious effects of these oscillations in business and agricultural conditions are widely recognized. Quack remedies are as numerous as panaceas for rheumatism. Despite the efforts of the innumerable careful thinkers who have attacked the problem, a complete understanding of the nature and causes of depressions and conclusions as to remedies have not been reached. Nevertheless our knowledge of the problem is increasing, and we may have hope that in the not far distant future booms and depressions will at least be reduced in severity.



ness activity since 1900.

right by the Cleveland Trust Co. and used with their permission.

THE NATURE OF BUSINESS CYCLES

Is There a Business Cycle? The answer to this question must be preceded by a preliminary statement of what we mean by the business cycle. In general, this term refers to the somewhat rhythmic and continuous alternations of booms and depressions, of swells and recessions in business activity, lasting from two to seven years and arising primarily from maladjustments within the business structure. Not all economists are agreed that such a cycle exists. They agree that there are changes in business but do not agree that these are sufficiently regular or general to be called *cycles*. Dean A. B. Adams insists that one cycle does not lead to another, but that each complete period of prosperity and depression is divorced from other periods, and that after a cycle has been completed, another cycle will not take place unless some external force, such as the development of a new industry, provides the motivating force. Others attack, with less validity, the idea of a cycle on the grounds that we cannot accurately forecast a depression at a regular interval of let us say $3\frac{1}{2}$ years, nor can we count on a given height of prosperity or depth of depression. In recent years some writers have objected to the term *business cycle* on the grounds that it gives a false impression of uniformity in the degree to which the various industries oscillate. Some industries may be depressed while industries on the average are prosperous. Again, certain industries may do quite well, while business as a whole is said to be in a depression. Even among those industries whose direction of change in activity corresponds to that of business as a whole, some will oscillate but little whereas others will fluctuate violently. Care should be taken to recognize all of these qualifications; yet there does seem to be merit in thinking of a business cycle or recurrent variations from normal conditions in industry as a whole.

Changes in business conditions are cyclical in the sense that periods of prosperity and depression alternate; prosperity is followed by depression, and depression by prosperity. The term *cycle* is not meant to give the impression that there is a uniform period of time between depressions and that all depressions or periods of prosperity are of the same intensity. Cycles vary in length. Professor Wesley C. Mitchell found that, though the average length of the 12 complete cycles occurring between 1878 and 1923 was 42 months, measured from trough to trough, individual cycles varied from 25 months for the 1919 to 1921 cycle to 74 months for the 1878 to 1885 cycle. Business cycles also differ widely in the degree of oscillation from normal, the minor depressions of early 1919, of 1924, and of 1927 being ~~in~~ sharp contrast to such major declines as those of 1907 to 1908 or 1920 to 1921. This is well shown in Fig. 48.

Kinds of Variations in Business Activity. The best evidence of the existence of a business cycle comes from a consideration of the following four kinds of variations in the volume of production and trade.

1. *Secular Trend.* Most data representative of business activity show a general tendency to increase over a period of from ten to fifty years—the long-time growth or secular trend of the industry or industries represented. Growth of total economic activity arises primarily from increases in population and changes in efficiency. Occasionally an individual economic series shows a distinct tendency to decline, as in the case of interest rates from 1900 to 1915 or of the production of kerosene or of carriages. Once in a while, data will be found which show no tendency to either increase or decrease but have a horizontal trend. In Fig. 49 is an illustration of a rising trend, depicted by the light line drawn through the irregular line showing the volume of bank debits in this country. By bank debits are meant the checks charged against individual deposit accounts in banks. These secular changes are not part of *business conditions*; they are anticipated and considered in the plans of individual producing units and of business in general. They are normal, in the sense that they are expected. They offer few problems as difficult as those which arise when industry grows more or less rapidly than is expected.

2. *Seasonal Changes.* There occurs in most economic data a fairly regular, recurrent variation with the seasons of the year. In the case of bank debits we find that the greatest volume occurs usually in January, March, October, and December. In contrast, the smallest volume usually occurs in February, July, August, and September. Seasonal changes likewise occur in carloadings, pig-iron production, building contracts awarded, and other series of data by which business activity is measured. Occasionally seasonal variation changes, possibly even sharply, as in 1935, when the time of introducing new automobile

models was moved from spring back to the preceding fall. There was another change in the seasonality of car production after the Second World War, when it was practically eliminated as the change-over time for new models was cut to a minimum.

Trend, adjusted for seasonal variation, is called *normal* by statisticians. By this they mean that the long-term trend and seasonal variation are usual and expected and to a considerable extent measurable in advance. Such normal changes are in contrast to the irregular, abnormal variations of the business cycle.

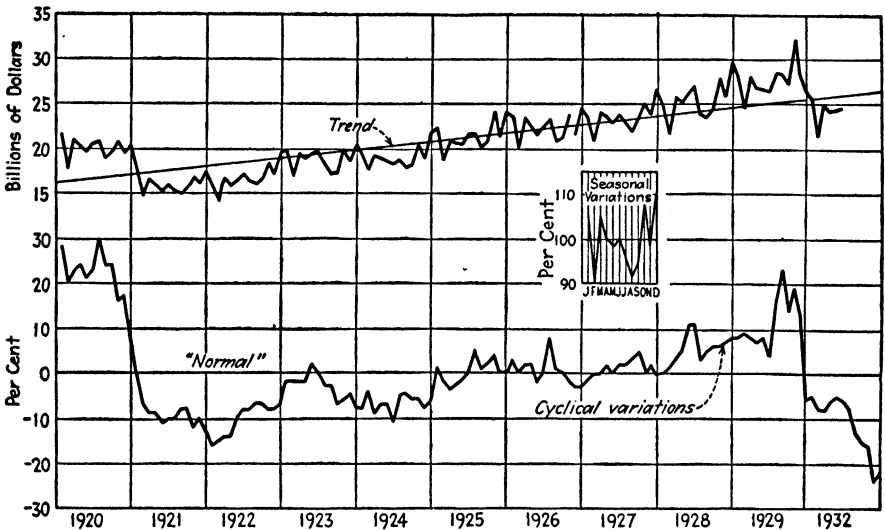


FIG. 49. Bank debits, long-time trend, seasonal variations, and cyclical variations, the United States 1920-1932.

3. *Cyclical Fluctuations.* Even after long-time or secular trend and seasonal variation have been removed from economic series typical of production and trade, there will be seen clear-cut evidence of somewhat rhythmic variations, sometimes being above and sometimes below what would have been expected if the volume had just equaled long-time trend adjusted for seasonal variations. These cyclical swings are evident in the chart showing bank debits. These irregular alternations above and below normal, or trend adjusted for seasonal variation, are known as the *business cycle*, when the series analyzed is representative of business as a whole.

4. *Residual Changes.* In addition to secular trend and seasonal and cyclical variations, there are residual fluctuations which do not come under any of these three types of change. Such changes are those arising from major strikes and from natural disasters such as a great flood.

These changes cannot be separated statistically from cyclical variations and hence are left in the usual indexes and charts of business activity.

Prosperity and depression are relative terms—relative to what would have been expected on the basis of the general tendency of business volume to grow, with the usual seasonal variation. Prosperity indicates that business is above expectations, employment is more than normal, wages are fairly satisfactory, sales volume is high, prices are relatively high, and profits are unusually large. Depression indicates the reverse, particularly that the volume of sales or prices, or of both, is below those anticipated. Our present concern is with these alternating good and bad business conditions, a complete cycle covering usually from two to seven years. Our conception of business conditions includes all changes in the volume of industrial production and trade, and much of price changes, which are not of the character of long-time growth or of seasonal variations nor due to temporary residual factors.

When Did Business Cycles First Appear? The peoples of the world have always enjoyed periods of good times and endured stretches of hardship, but these cannot all be classed as business cycles. The famines of Egypt, the pestilences of medieval Europe, and the crop failures of pioneer agriculture all brought more actual physical suffering than even our recent difficulties, but, in the words of Wesley C. Mitchell:

It is not until the uses of money have reached an advanced stage in a country that its economic vicissitudes take on the character of the business cycle.

This remark does not mean that the economic life of communities with simpler organization is free from crises, or from alternations of good and bad times. On the contrary, life seems to have been more precarious, economic fortune more fluctuating, in a medieval town than in a modern city. But until a large part of a population is living by getting and spending money incomes, producing wares on a considerable scale for wide markets, using credit devices, organizing in business enterprises with relatively few employers and many employees, the economic fluctuations which occur do not have the characteristics of business cycles. . . .¹

The features outlined by Mitchell did not characterize American urban industry to any marked extent until after the Civil War. Previous depressions, with a few exceptions, were largely related to untoward developments in politics and government finance, or to natural events. More recent depressions have had more to do with developments within the business structure itself; overbuilding of capital equipment, overextension of bank credit, technological improvements, misdirection of productive effort in the consumer-goods field or shortage of consumer buying power. With Mitchell's statement of the characteristics of an economic system subject to the business cycle in mind, we turn to the more

¹ *Business Cycles* (National Bureau of Economic Research, 1927), p. 75.

exact statement of that species of industrial and commercial developments known as the business cycle.

Measurement of Business Activity. Before studying the business cycle further, we should have a knowledge of the measures of the condition of business. It is only since the First World War that great progress has been made in the statistical measurement of business activity. Many series of data indicative of the volume of production and of trade are now available. Some leading data are pig-iron production, factory employment, freight-car loadings, building permits, electric-power production, and debits from individual bank accounts. Production data from many important industries, retail sales volume, and price data of many kinds are at hand. Frequently two or more of the series listed above and others, not mentioned here, have been combined into a composite index number by the methods described in Chap. 14. Examples are: (1) the Federal Reserve Board index of industrial production, including many kinds of production, and (2) the Bureau of Labor Statistics index of the wholesale prices of all commodities.

For purposes of measuring business activity, these data need to be submitted to certain mathematical treatment, for they measure all types of variation together: long-time growth, variations with the seasons of the year, rhythmic variations typical of booms and depressions, and residual variations accompanying such events as major labor strikes or natural disasters. Typically the statistician has proceeded to eliminate from these data, by fairly well-established statistical devices, the long-time growth and the seasonal variations. In the past, statisticians have called these variations *normal* in the sense that they were recurrent and could be anticipated with fair accuracy. After the elimination of the effect of normal growth and of seasonal variation, the remaining variations are a combination of those which are cyclical in character and those termed residual—two types of change which cannot be separated statistically. We shall refer to the two together as cyclical oscillations, which are represented graphically as oscillations above and below a horizontal line, termed 100 or normal, as is done in Fig. 49.

After the measure or index of business activity has been obtained, such as that presented in Fig. 48, we are interested in understanding the sequence of events in a typical business cycle. This is necessary if we are to make any progress either in understanding its cause, or in forecasting its course.

The Course of the Cycle. The following description of the events of a typical cycle will not represent exactly the developments of any particular cycle, although there is probably a higher degree of similarity than of difference between cycles.

A few important series, showing the changes that take place in various

aspects of business activity during a cycle, are shown in Fig. 50. It is interesting to notice that while they move together in a general way (the big drop in building-construction contracts between 1942 and 1944 was due to wartime restrictions), there are many differences in timing and amplitude. Thus construction contracts awarded dropped noticeably between 1928 and 1929, while the other series moved up. The amplitude of the fluctuations is also very different, the changes in con-

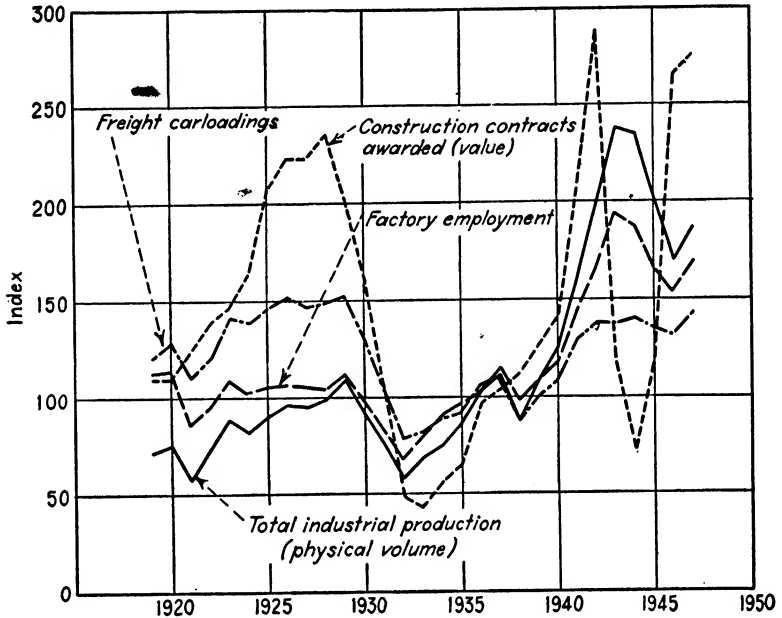


FIG. 50. Business indexes. 1935-1939 = 100.

tracts awarded, for instance, being much greater than for factory employment. Not only do the movements of these and other important series vary among themselves, but from cycle to cycle there are great differences in the promptness and extent to which changes occur in such aspects of economic life as security prices, wages, or interest rates. Thus, although the prices of common stocks have usually declined several months before a general business recession began, in the 1929 recession business volume turned down about June, 1929, whereas stock prices continued upward until October of that year. Contrariwise, there was a great crash in the stock market in September, 1946, but business activity rose steadily for two years thereafter. Building construction, which frequently has declined in volume about six months before a decline

occurred in general business, in the Great Depression had begun to decline in 1928. In spite of these differences, there is sufficient similarity in the movement of particular price series, production series, and trade series to warrant a description of those events which usually take place during the various parts of a business cycle. For purposes of description, the cycle is usually divided into four phases: (1) recovery, (2) prosperity, (3) recession, (4) depression. It makes little difference which phase is first described; we shall start with recovery.

1. *Recovery.* Business moves from the depression phase into the recovery period with conditions favorable for expansion. Such conditions generally include the following: Bank reserves are large relative to deposits, and interest rates charged in large city banks have declined as in 1921 to 1922. Stocks of goods, particularly those of finished goods in the hands of merchants and consumers, are low, having been depleted by the fact that consumption has declined less than production during the depression. This was clearly true of department-store inventories in 1921 and again in 1930 to 1932. Manufacturers are more willing to increase production because costs, as affected by interest, wages, and the efficiency of labor, and the price of raw materials are appreciably lower. Business failures have become fewer, and, since production has begun to increase, payrolls and earnings of producers expand and buying power is enlarged. Reviving demand encourages plant enlargement and modernization and the establishment of new industries. Consumer purchases of durable goods expand sharply, as in 1935 to 1937. The building of these capital goods further increases the demand for labor and raw materials and ultimately for consumers' goods. Each increase in expenditure for equipment or labor further increases buying at retail and wholesale, which in turn stimulates production. More credit is called for, and banks increase loans. The whole process becomes cumulative. Many economists, however, hold that no substantial revival can take place unless some particular stimulus is applied, such as a new field for capital investment, or some new and large but unsatisfied consumer want. Such new industries have frequently given a great impetus to business, as, in the case of the stimulating influence of the expansion of the automobile industry and of urban building in 1921 to 1922, and, in fact, until 1928. The necessity of filling shortages of almost every article of consumption had a great deal to do with the continued increase of business activity from 1945 to 1948.

2. *Prosperity.* The early part of the prosperity period is only an enlargement of the recovery phase. Production and trade continue to increase, unemployment decreasing and consumer income growing. Plant expansions take place in large number, stimulating such major industries

as steel, lumber, and construction, as illustrated by the rapid increase in the output of durable goods from 1935 to 1937. As unemployment declines, wages rise and labor becomes less efficient. The ease of making profits leads management to be extravagant and careless. Since to carry on the larger volume of business with many higher prices requires more bank funds, there is demand for more bank loans, until bank-reserve ratios become lower and banks tend to raise interest rates and finally to restrict lending. Bank deposits rose sharply as a result of increased lending from 1919 to 1920 and again gradually from 1924 to 1929. Although no shortage of bank resources appeared to exist at the end of the latter period, interest rates rose noticeably in 1919 to 1920 and again in 1929, and later events proved that there had been many cases of overextension of credit on questionable security. Stocks of goods on hand tend to become larger, as was true in department stores in 1920 and in 1937. In 1929 such was the case only in the raw-materials field, such as farm products, copper, and oil. All in all, it becomes progressively more difficult to sell a larger volume at a higher price, as happened in the case of radios, refrigerators and even automobiles in 1948 to 1949. At the same time production costs, even such contractual costs as rent and interest, gradually mount and in many cases the business profit margin becomes impaired. Sometimes, in recognition of these conditions, the prices of common stocks decline.

3. *Recession.* Economists do not agree concerning the fundamental cause of the transition from prosperity to a period of declining business activity. Sometimes the immediate, though rarely if ever the underlying, cause is an outstanding event, such as a large bank failure in 1907, which upsets the scales and business tumbles. The decline may be sudden and sharp, as in 1921 and 1929, or more gradual, as in 1914. Frequently the recession has been accompanied by a financial panic, though this has by no means always been true. The depth to which the business decline will go seems to be related to the degree of maladjustment brought about during the prosperity phase.

The recession is characterized by a receding volume of production and trade, increasing unemployment, declining wholesale prices, declining profit margins, and a general feeling of pessimism, with much talk of returning prosperity, notably in 1921 and again in 1931 to 1932. Bankruptcies increase, as weak firms are unable to stand the strain. If credit is scarce, interest rates may at first rise, as embarrassed companies demand bank aid, as in 1920 to 1921. Construction and plant expansion almost come to a standstill, and even replacement of wornout producer and consumer capital goods almost ceases. Note the rapid and marked decline in activity in the producers' goods field during the two major

depressions of 1920 to 1921 and 1929 to 1933. Raw-material industries frequently suffer most, the effect of falling prices and volume being passed back to them, and they cannot in turn shift the burden.

4. *Depression.* During the period of depression the way is paved for recovery. The preparation of the upward road is a matter of remedying at least some of the maladjustments which were developed during prosperity and which lead to recession, whether these maladjustments are in production, in credit, in consumer income, or elsewhere.

The depression is characterized by events opposite to those of prosperity. The volume of production and trade is small, especially of the more durable goods, in many kinds of which it usually is below consumption. Unemployment leads to lower wages and greater labor efficiency. Interest rates become low except where risk is great. Other costs of doing business also tend to fall into harmony with the entrepreneur's selling price, although, if certain prices and costs decline drastically while others remain rigid, the restoration of harmony in the price structure is delayed, as from 1930 to 1934. Management becomes more effective. Stocks of goods tend to decline. All in all, the outlook for a profit margin between gross income and costs becomes more promising. Business is now ready for the recovery phase.

The Government and the Business Cycle. In this country since the First World War, the business cycle has, as it were, not been left to itself but has been made the subject of government intervention. In the twenties, as noted in Chaps. 13 and 14, this took the form of purchases and sales of government securities by the Federal Reserve System and adjustments in its rediscount rate, intended to affect commercial interest rates. These may have helped to turn the extremely moderate recessions of 1923 and 1927, but had little apparent effect in 1930 to 1931. Beginning in 1932, the government took more direct and stronger measures, first with the RFC, which was intended to restore business credit, and then under the Roosevelt administration going on to the numerous measures designed to raise prices, like the NRA and the gold-buying program, the relief and public-works expenditures, and the AAA program. These will be discussed at somewhat greater length later on in this chapter and the next but are mentioned here to call the student's attention to the fact that less than ever is it to be expected that the people in this country—or any other—will allow business cycles to work themselves out without forcing their governments to take active steps to end depressions. This is as safe a prediction as can be made in this uncertain world. What cannot, unfortunately, be predicted with equal certainty is the success of the measures that governments will employ.

WHAT CAUSES BUSINESS CYCLES

Business Economy. Although people in ancient and early modern times had their periods of "hard times," the business cycle, as we have explained that term, is peculiar to the exchange or money economy or, as Wesley C. Mitchell prefers to call it, the *business economy*. We live in an era of the money-making and money-spending specialist, and the great economic problem arising therefrom is that of the coordination of the activity of specialists. The high degree of division of labor with the consequent interdependence of people and of all phases of economic activity has given us an economic system which is a complicated mechanism. If it works smoothly, it is highly productive, but it is also a system which on occasion fails to keep all of its parts in proper coordination, one with another. The exchange economy may be compared to some such highly effective machine as a linotype or an adding machine, which may be rendered temporarily useless by a loose nut or broken cog. No one sits on high to prevent broken "economic cogs"; it is a system controlled by a motive, profits, not by a set group of persons. The coordination of the parts of the business-economy mechanism is the responsibility of profit-seeking entrepreneurs—a task which they apparently do not perform with complete success.

Points of Agreement. If one general explanation of business cycles were to be given, it would be the word *maladjustment*. That term is almost self-explanatory, for the mere presence of depression with idle plants and unemployment suggests that the economic system is not in equilibrium. The difficult task is to fasten on the precise kind of maladjustment which seems to be at the root of the difficulty. Is it a matter of excess and then shortage of credit? Do our difficulties arise from a periodic shortage of consumer income? Is the overdevelopment in certain fields producing consumers' goods our basic difficulty?

Among students of business cycles there is general agreement that the most significant phenomenon of the business cycle is the fluctuation of investment, that is, of capital formation. In this concept of turning capital into durable goods by investment must be included such items as the following: use of depreciation reserves of business for plant and equipment replacement, turning working capital of business into inventories, use of consumer savings to purchase durable consumer goods, use of savings of individuals and business units to construct productive capital, or public capital. Thus it will be seen that "investment" means turning savings into goods, and that the term also includes goods of all degrees of durability. Chief emphasis is placed, however, on the turning of available funds into the more durable goods.

In Fig. 51 the estimated net capital formation by years from 1919 to

1937 is presented, together with estimates of the major types of capital formed. The general correlation of capital formation with the curve of business activity (Fig. 48) is striking. No evidence of the depth of the depression in 1931 to 1934 is more telling than the fact that net capital formation was minus during those years.

Dr. Kuznets's figures, used here, are not available after 1937, but the Department of Commerce has published estimates of capital formation from 1929 on, so that the information is available for later years though in not quite comparable form. During the Second World War, when

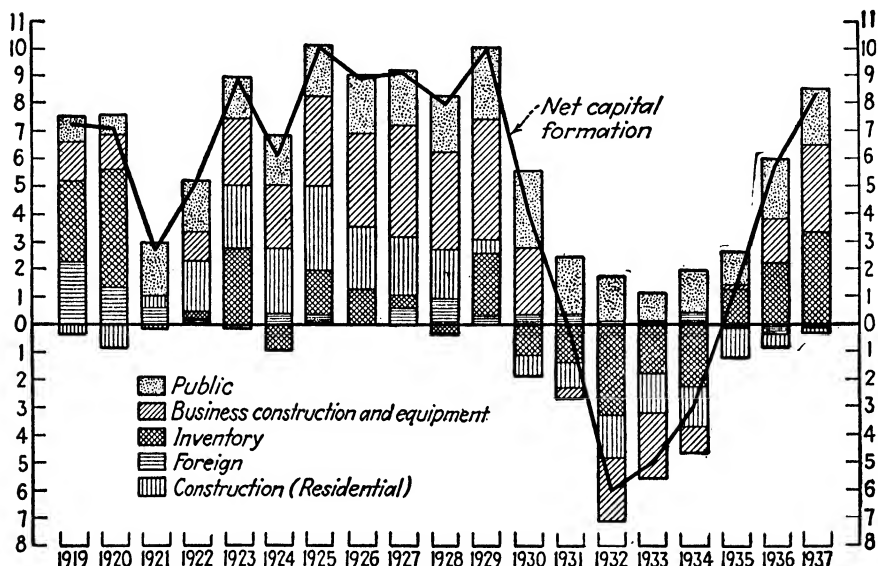


FIG. 51. Net capital formation in the United States, 1919-1937, by major classes of capital in 1929 prices. Source: Simon Kuznets, *Commodity Flow and Capital Formation*, and by the same author, *Bulletin 74*, National Bureau of Economic Research.

business activity was very high, *private* net capital formation was not correspondingly high, government-sponsored capital formation replacing it in part. In 1946 and 1947, however, private capital formation was very large, as was business activity.

Also important are the changes in the character of the capital formation. Business durable capital and residential construction accounted for much of the capital formation from 1923 to 1929. In contrast, only public capital and foreign claims showed a net gain during 1931 to 1934. Then in the recovery of 1935 to 1937, public capital, some business durable capital (machinery), and increased inventories accounted for the net gain in capital.

According to this analysis, then, the major feature of a recession is a

sharp decline of investment, in the sense of capital formation. Part, even most, of the currently accumulating depreciation reserves and other individual and business savings are not being invested in new goods. Many paid-off loans are not replaced by new loans. An increasing portion of bank funds remain wholly idle or are used to bid up the price of existing prime bonds. Thus the "circle flow of money," the use of saved funds to employ labor to produce consumer goods or build producer goods, is partially broken. There is a lack of purchasing power in consumers' hands to buy at profitable prices all that industry can produce, simply because there is a lack of investment. In fact, the influence of a decline of investment is cumulative. The reduction in consumer buying and in returns on capital in use further discourages investment.

In contrast, a period of recovery is a period of expanding investment. Idle funds of business are put to work, and new capital is acquired. In fact, a "boom" period is one in which investment exceeds current savings, uses up any uninvested savings of the preceding depression, and goes on to feed on created bank credit. It should be seen that capital investment tends to feed upon itself during the recovery stage. The increased incomes and returns on existing capital encourage further investment. Later, of course, interest rates and other costs may rise and prospective returns fall.

Now from what has been presented in the preceding chapters it is clear that entrepreneurs will put capital to work when the prospective returns from such uses (marginal productivity) exceed the cost of acquiring that capital. Recovery and prosperity are periods of increasing prospects of returns—prospects which exceed market interest rates. In contrast, during recession and depression prospective returns are below interest rates. In fact, it is possible that prospective returns are negative.

Here is where agreement on the cause of business cycles ends. When writers undertake to explain *why* the fluctuations in investment, or why the variations in the relation of prospective returns on capital to the cost of capital, there are almost as many theories as writers. Clearly only the most widely respected theories can be presented here.

A helpful division of theories is between (1) those which find the explanation of business cycles within the tendencies toward maladjustment and then readjustment of the business economy itself, and (2) those which insist that some external development originally starts the cycle.

1. According to these views, called *self-generating theories*, once fluctuation has begun, a series of developments is set in motion which will check this fluctuation and reverse the course of business. This new course will in turn be checked and reversed, and so on, with cycle after cycle occurring. Some light on this approach to cycle theory is shed by

the description of the course of the typical cycle, presented on pages 639 to 643.

2. Somewhat in contrast, other schools of thought hold that at least major cycles are initiated by forces *outside* the complex of business relationships—forces which affect the desirability of investing capital. It should be emphasized, however, that even persons who attribute cycles to an external cause agree that the resulting cyclical movement of business occurs because maladjustment and readjustment in business relationships take place in a manner described above.

1. **External Forces.** *a. Natural Phenomena.* Two systematic attempts have been made to find the cause of urban business cycles in weather conditions with consequent good or bad crops. W. Stanley Jevons, writing about 1880, declared that he had found a distinct similarity between weather and business cycles from 1721 to 1828, the cycles of each being about ten years in length. Later computations indicate that the cyclical period of neither series is ten years, and that there is a considerable dissimilarity in their respective cyclical periods. In 1914 H. L. Moore announced that he had discovered a thirty-three-year and an eight-year cycle in the rainfall of Ohio and Illinois, which is particularly interesting when one considers that Jevons's earlier calculations had been largely made with American data. Moore then maintained that there had been a high degree of similarity between these cycles and business conditions in this country.

Those who undertake to explain business cycles in terms of variations in weather, need not only to demonstrate a similarity in variation but also to point out how weather, through its effects on crops, can affect general business. Good crops mean low prices for farm products, which does not augur well for the salesman of urban products to farmers, even though the above investigators state that periods of heavy crop yields were periods of business prosperity. On the other hand, low yields of farm products, which usually lead to higher farm prices, mean high food prices for urban dwellers and low volume of business for processors and transporters of farm products.

It can be said that those theories which trace business cycles to weather cycles have but little support from economists today.

Two more recent suggestions of the interrelationships of cycles in natural phenomena to business conditions appear to have a more logical causal explanation, even though both theories are far from established. Ellsworth Huntington holds that weather affects the health and the mental state of the population. From there on his explanation is much like the "psychological" theory discussed later. Garcia-Mata and Shaffner suggest that variations in sunspots affect the amount of ultra-violet

rays and the magnetic activity of the earth. According to their notions, which are far from proved, human energy and emotions are influenced either by the variations in ultraviolet rays or by changes in the magnetic effects on the electrical basis of nerve energy.

b. Innovations. A theory which has gained in support as its logical basis has been explored and business-cycle history examined is that all eras of great prosperity have been periods of tremendous investment related to the commercial utilization of inventions. A few businessmen pioneer in the use of such "innovations," but it is only when a great number of initiators follow that the boom gets under way. Thus we had the railroad booms of the 1850's, 1870's, and 1880's. The boom of the 1920's is viewed as arising from the tremendous increase in automobiles from 8,226,000 registered in 1920 to 23,059,000 in 1929. Capital was required to purchase the automobiles, to build the plants for producing them, to construct the highways on which to use them, and to develop the related petroleum industry. Coincident, and in part related, was the great shift of population from country to the cities, which brought a building boom. Industry generally is stimulated by the flow of capital into investment, which means augmented purchasing power. Such periods of innovation are always overdone: excessive credit is created, excessive plants are built, and costs get out of line with returns. Thus, though the innovation greatly increases the marginal productivity of capital, it later leads to a decline in these prospective returns, and probably also to a rise in the interest rates. Business goes into a slump, from which it may rise somewhat because of readjustment during a depression. It will not, according to this theory, go into a genuine boom again until another period of innovation gets under way.

c. Institutional Changes. Occasional writers find the explanation of particular cycles in some preceding major change in economic processes or institutions brought about ordinarily by government acts. The most widely held of these ideas is that which holds that the depression of 1921 to 1922 and that following 1929 had their roots in the disarranging of credit, the destruction of capital, and the changes in the relative economic importance of industries and countries during the First World War. Leonard P. Ayres has attempted to develop a theory of "primary" and "secondary" postwar depressions and apply the idea to the post-Civil War period. The "primary depression" is a reaction to the shift from war to peace, related frequently to high interest rates and followed by some deflation of credit and prices. (Three years after the end of the Second World War such a depression had failed to take place.) It will be brief, however, and will be followed by a boom while capital flows into reconstruction, into utilization of technological developments

which were held back by the war, and into replacing consumers' durable capital which was not replaced during the war. Later there will come a crash, probably more severe than the "primary" depression. Although the disrupting influence of a major war is acknowledged, few students will accept it as the necessary, or at most primary, cause of the major depression ten years later.

Other major institutional changes, particularly in the field of money, or the threat thereof, have been held as responsible for certain depressions. Thus some maintain that the collapse of the 1890's arose from businessmen's fear of the effects of the silver already purchased and the threat of the remonetization of silver. In these cases other influences are at work, and it is impossible to say which force is dominant.

We have already indicated that in recent years the government has initiated institutional changes designed to revive business activity, notably in the period from 1933 to 1938. While business undoubtedly turned upward in that time, there is dispute as to the efficacy of the government's policies.

2. Psychological Theories. Some writers on business cycles find their basic explanation in the mental state of businessmen, and, therefore, in the entrepreneurial class view of prospective returns on use of capital. Dr. C. O. Hardy points to the all-pervading uncertainty of business enterprise, "chiefly uncertainty on the part of producers and middlemen concerning the conditions that will prevail in the market when they are ready to dispose of their goods," as the major cause of cyclical variations in business. This uncertainty has its root in the inability of the price system properly to govern production—an increase in demand encouraging many enterprisers to expand at the same time and leading to excessive output. Such a condition brings depression and a contraction which, being done by enterprisers acting independently, is also carried too far.

Dr. A. C. Pigou of the University of Cambridge states that the emotional state of businessmen alternates from an optimistic error to a pessimistic error. The attitude of business leaders soon permeates the whole of industry and then the emotional error spreads, bringing either excessive production and buying, or the reverse.

The explanation of business cycles as being primarily due to psychological causes has not obtained wide acceptance among economists. It is generally granted that overoptimism may encourage the overextension of credit, overexpansion of plant, and the creation of other maladjustments. Similarly, pessimism tends to prevent the execution of plans for future production and thus deepens depression. However, it is only through facilitating other grave maladjustments within the business

structure, so as to bring depression, that optimism can be said to lead to pessimism. The mental state of businessmen—those who invest in new capital goods in particular—does tend to amplify the swings of the business cycle, but this mental state is a reflection of present and prospective profit margins, which grow out of other causes. If a business depression is due primarily to other maladjustments, business cannot be revived merely by a change from pessimism to optimism unaccompanied by a correction of the basic maladjustments.

3. Credit and the Cycle. A more widely accepted explanation of business cycles is that which points to bank credit as the chief instigator of alternations in business. During a depression, bank reserve ratios have become high. If the outlook is for higher prices, businessmen will borrow from the banks, for a loan at 6 per cent interest will actually be without interest charge if the borrower's goods rise in price at 6 per cent a year. The tendency for prices to rise, particularly as business moves into the prosperity phase, in turn brings further credit expansion, for the borrower can both afford to borrow and must obtain a larger loan to do the same business at the higher prices. More and more bank loans are granted. But there is a limit to the volume of bank credit, determined by entrepreneurs' desires to borrow and by the banks' cash reserves. Banks must then take steps to protect their reserve ratio. They tend to make fewer new loans, require greater security, and charge higher interest rates; many requests for renewals are refused. This tightening of the credit reins is particularly felt where activity relies heavily on borrowed funds, as in the construction industry and by firms considering expansion. Even ordinary manufacturing and commercial organizations feel the growing shortage of bank funds. Inability to secure additional credit or other causes check the upward movement and start a downward turn. This then becomes cumulative. If prices fall 10 per cent, this amounts to an additional 10 per cent interest charge. Some particularly embarrassed firms are forced to sacrifice goods on hand to get cash. Men are laid off, orders for materials are canceled, building of new plants is checked, raw-material industries curtail activity, and so on, deflation producing more deflation. During the following depression, credit conditions are rectified and the way prepared for recovery.

Among the economists of distinction who long have defended some form of money, credit, and interest theory of the business cycle is Irving Fisher. In his earlier writings he expressed the opinion that the failure of the commercial or contract interest rate to rise rapidly enough with rising prices, and its failure to fall rapidly enough with falling prices, was the greatest cause of the trouble. His later views he has summarized under the heading of "The Debt Deflation Theory of Great Depressions," as follows:

(1) Economic changes include steady trends and unsteady occasional disturbances which act as starters for cyclical oscillations of innumerable kinds; (2) among the many occasional disturbances, are new opportunities to invest, especially because of new inventions; (3) these, with other causes, sometimes conspire to lead to a great volume of over-indebtedness; (4) this, in turn, leads to attempts to liquidate; (5) these, in turn, lead (*unless counteracted by reflation*) to falling prices or a swelling dollar; (6) the dollar may swell faster than the number of dollars owed shrinks; (7) in that case, liquidation does not really liquidate but actually aggravates the debts, and the depression grows worse instead of better; (8) the ways out are either via *laissez faire* (bankruptcy) or scientific medication (reflation), and reflation might just as well have been applied in the first place.²

Few economists would deny that the bank-credit and debt aspects of business cycles are important. The influences of bank credit and debt ramify into every part of economic life: production, distribution of goods, and consumption. Economists, however, are not agreed as to whether overexpansion and curtailment of credit are the basic cause of variations in business activity or just one feature which necessarily accompanies and amplifies the oscillations in activity which may be due fundamentally to other reasons.

4. The Use of Income: Saving. There are theories which explain the occurrence of depressions in terms of the failure to get purchasing power into the hands of those who wish to buy consumption goods as rapidly as those goods are produced. The first of these theories, early expounded by the prophet of socialism, Karl Marx, and refined by the Englishman, John A. Hobson, holds that too small a portion of the national income goes to labor. The portion going to capital is large relative to the number of people, and therefore some of the purchasing power is stored up in the hands of the wealthy. At the same time, production of goods continues or even expands because of the new plants developed out of the savings of the wealthy, leading to a storing up of inventories. Consequently, prices fall and business activity recedes. During the depression saving runs behind the amount required to expand equipment with the growth of population; hence consuming power, at the low prices, is sufficiently large to purchase the stored-up goods. To Hobson the solution to the cycle problem lies in a more equal distribution of the national income.

A theory which is similar in general framework but which offers a more precise exposition of causal relationships has been offered by R. T. Harrod. At times of prosperity, argues Harrod, the enlarged profits increase savings, and consumers generally are inclined to save more. Then the *rate of increase* of consumption begins to slow down, the well-

² *Econometrica*, October, 1933, p. 349.

known principle of *acceleration* thus being brought into play. This principle holds that a change in demand for finished goods brings a much greater change in demand for the producers' goods which make the finished goods. Therefore a decline in the *rate of increase* of consumption will bring an absolute decline in the demand for equipment. If consumption would cease to grow, the demand for additional equipment would disappear, and such producers'-goods industries will be called upon for replacement only.

The significance of the acceleration principle was pointed out long ago by J. M. Clark and others. The questions which are raised concerning Harrod's theory are (a) his assumption of the shift from consumption to savings during prosperity, and (b) his assertion that the acceleration principle is the only major and ever-present force leading to recession. It is certain, however, that (a) change in consumption brings a greater change in the demand for producers' goods, and (b) that producers' goods inevitably have wider cycles in activity than do consumers' goods.

5. Maladjusted Production. Economists generally hold that there can be no general overproduction in the sense of more goods than people want to consume and will buy, if production and prices of different goods are in proper relation to each other. However, there can be more goods than can be sold at prices which the sellers demand, or to which they are accustomed. Such a situation may arise out of a contraction in the circulating medium or its velocity, as in 1930 to 1932. Insofar as this is the cause of *overproduction*, such a theory should come under credit theories or under shortage of consumer buying power. The lack of buying power to buy goods at the price covering past production costs must come from the inability of the credit system to expand further, or from credit contraction, or from the failure of our system to give enough income to consumers. Goods to the usual amount could, however, be sold, if prices were sufficiently adjusted.

There can be overproduction of particular goods, which we call maladjusted production. The *planning* of production or coordination of productive effort among various products takes place according to the laws of price. But price does not act as a perfect coordinating influence. The presence of monopoly influence, and general inability of capital and labor to shift freely from one type of production to another, cause overproduction and unduly low prices for some kinds of goods in relation to other kinds. Producers of the relatively overproduced or low-priced goods cannot buy the high-priced goods because of lack of purchasing power, and the latter cease production because they do not have a sufficient market at the prices to which they have become accustomed. The inability of prices perfectly to coordinate production should

not be taken as *prima facie* evidence of the undesirability of capitalism. We are not certain that social control—whether control by orthodox socialism, by fascism or by the OPA—could do better.

Two general types of maladjustments are recognized. First, there is the vertical, a maladjustment which may occur between the production of producers' goods and of consumers' goods. During the prosperity stage of the cycle relatively too much effort is considered to be devoted toward the output of such producers' goods as plant and equipment. Because most of the money invested in producers' goods is indirectly paid out in wages (including salaries), those who receive such wages buy consumers' goods, the result being a good market for consumers' goods at satisfactory prices. But overconstruction results in such a large supply of producers' goods that customary returns on capital invested in them no longer appears probable and expenditures for construction of plant and equipment to a great extent cease. The demand for the products of the producer-goods industries declines, and it is considered unprofitable to continue the purchase of labor and material at previous rates. There is, therefore, a need to shift productive effort from these industries to consumer-goods industries, with necessary readjustments in prices. This cannot be effected with sufficient rapidity to prevent unemployment, bankruptcies, and a depression.

Second, the maladjustment may be among industries producing different types of consumers' goods. During 1930 to 1933, writers in the popular press spoke much of the excessive capacity in certain consumers'-goods industries such as those making shoes or radios. But few serious students of the business cycle see in those maladjustments alone sufficient power to upset the whole economic system.

A major reason why production maladjustments continue and their effects spread is that of *price rigidities*. When labor or capital seeks to migrate from the overexpanded industries to others they find many doors to employment closed by the rigid-price system. Relatively too much labor is therefore employed in the *open-door* competitive industries. Goods produced by these industries fall so low in price that those who produce them have not the purchasing power to buy the rigidly priced goods, and many in the rigid-price industries are unemployed. This view of the business depression has been expressed by Professor Edwin Cannan in an address as president of the Royal Economic Society of London, as follows:

While the isolated individual satisfies his own needs directly by his own labors, in organized industry each of the associated individuals seeks to satisfy them by the indirect method of satisfying other personal needs, and having his own satisfied by what he gets from them in exchange. *When they fail to agree in the bargaining, unemployment appears.*

The Views of J. M. Keynes. Because of their wide acceptance and their impact on public policy of the last decade, the ideas of the English economist, J. M. Keynes, are of particular interest. While Keynes is primarily presenting not a business-cycle theory but rather an explanation of the determinants of the level of employment and business activity over longer periods of time, his analysis bears directly on the problems of short-term cyclical fluctuation.

Keynes starts with the fact that national income, which is the sum total of economic activity, is composed of what is spent on consumption and investment. Of these two components, expenditures on investment are the more variable. Changes in investment also have what Keynes calls the *multiplier effect*. Thus, if money is invested in constructing a factory, the wages paid to the workers are spent on consumption and further investment, and those receiving the money from the workers also spend it for saving and investment, and so on. Mr. Keynes³ estimates the multiplier for the United States to be close to 2.5.

The difference between what Keynes calls the marginal efficiency of capital⁴ and the rate of interest on savings which furnish the means of investment determines the profitability of investment. A low marginal efficiency of capital will inhibit investment. At the same time, however, savings may continue unchecked because of the unequal distribution of income, habit, and the desire to provide for the future. The low rate of return available from investment will not overcome the liquidity preference of the savers, the desire to keep their funds liquid, that is, readily available. All things being equal, a person would rather keep his savings in liquid form where he can draw on them immediately than in securities or other forms of investment where he may not be able to get his money out quickly without loss. Therefore something must be paid to cause savings to be put into unliquid forms. There must also be compensation for the risk of investment and the cost of lending. If the rate of return of investment is insufficient to compensate for all this, savings will go uninvested. Since income is dependent on *consumption* and *investment* this leads to a fall in income.⁵ This process has been well summarized by Professor Paul A. Samuelson.

Upon one thing all modern economists, of whatever school of thought, are agreed: *the amount which the community wishes to save at full-employment income levels must somehow be offset, or income will fall until the community is*

³ *General Theory of Employment, Interest and Money* (Harcourt Brace and Co., New York, 1936), p. 128.

⁴ This is much the same as the marginal productivity of capital, discussed in Chap. 16.

⁵ As is pointed out on p. 376, the reduction in income thus brought about leads to a decrease in savings, so that savings are cut down to equal investment. See p. 95 of Sir W. H. Beveridge, *Full Employment in a Free Society* (Norton, New York, 1945).

so poor and wretched as to be willing to save no more than can be offset. In terms of time-period analysis, the community must return to the income stream in each period as much as it received in previous periods, or else there will ensue a cumulative downward spiral of income and employment. We are confronted with the paradox that while no one attempts to save with any thought of investment outlet, or of offsets, yet the amount which all together succeed in saving is brought into alignment by the movements of income and employment. But the alignment is performed on a cruel Procustean bed, with employment and income being lopped off if the desire to save is excessive in comparison with available offsets, and with an inflationary straining of demand if investment is excessive.⁶

The important thing to notice in this quotation is that savings "must somehow be offset." If savings are tending to outrun investment, then to prevent depression people must spend more and save less, thus increasing the spending component of national income, or they must be willing to accept lower returns on investments and invest more.

Inasmuch as there is nothing in the nature of the economic system to bring about the required changes in savings automatically (though by coincidence an innovation coming at the right time might increase the marginal efficiency of capital enough to induce investment), the government must take steps to offset savings. This it can do by making investments itself, or by providing its citizens with the means of increasing their investments or consumption. One possible way of doing the latter would be by bringing about a more equal distribution of income. Since people in the lower income brackets tend to spend a very large proportion of their incomes, while those in the higher brackets tend to save, a transfer of income from those in the higher brackets would increase the proportion spent on consumption out of any total aggregate national income.

Once the government was successful through the use of any or all of these measures in increasing consumption and investment, leading to an increase in income, the returns to private business would increase and private entrepreneurs would be encouraged to invest on their account, thus raising income further.

Are Business Cycles Due to One Cause? The marked disagreement concerning *the cause* of business cycles leads us to question whether any one theory will explain all cycles. Professor Wesley C. Mitchell, one of the most careful and thorough students of the business cycle, doubts that all cycles have a common root. He is inclined to believe that all of the various proposed theories are useful in understanding some or many of the cycles of the past seventy-five years. However, each cycle

⁶ Quoted by permission from *Postwar Economic Problems*, edited by S. E. Harris (McGraw-Hill Book Co., Inc., copyright, 1943).

tends to be somewhat different; causal factors important in one business crisis may be less important in another.

The student should note, however, that these different theories are to a large degree only different ways of viewing the same events. Expanding credit results in apparently high returns from invested capital. This leads to the desire to construct new plant and equipment. That results in more bank credit and more debt, which bring investing in excess of saving. All of this leads to full employment, optimism, ability to agree in the bargaining process, and prosperity. Contracting credit brings debt inflation, money loss to him who invested his savings in producers' goods, a pessimistic psychology, hoarding of money income which should be spent for consumers' goods or invested in new producers' goods, maladjustment in production and prices, and inability to agree in the bargaining process. The credit theory recognizes that during recession and depression interest rates and debt charges are too high. The same point is covered in the wrong-distribution-of-income theory when it holds that during depression not enough of the total purchasing power reaches those who will spend it for consumers' goods. The maladjustment-in-production and the maldistribution-of-income theories recognize that one of the maladjustments of the depression period is that interest agreed on in contracts on long-term loans represents too large a part of the social income. The psychological theory also covers this point when it acknowledges that during the period of overoptimism there is a tendency to enter into debt and interest contracts which later become unduly burdensome.

Keynes's theories have much in common with the others, stressing the effect of maldistribution of income on savings, the effect of hoarding instead of investing savings, the stimulating effect on economic activity and income of increased investment. What is most distinctive about his ideas is his stress on the nonself-correcting character of business fluctuations. The credit theory, in particular, has it that the contraction of credit will bring about conditions that make expansion possible, or indeed almost inevitable. Keynes believes that a low level of business activity can continue indefinitely till some external force, most likely given impetus by government action, breaks the vicious circle.

One point at which all theories tend to come together is that all must analyze the circuit flow of money, that is, the flow from employer to wage earner to retailer back to a producer who pays it out in wages, with all the possible variations and diversions, as from a wage earner to a savings bank, which loans it to a building contractor, who pays it to a wage earner. It is through the way money traverses this circuit that business activity is influenced up or down. If too much is channeled into investment and not enough to where it can be spent by con-

sumers, the products of those facilities created by the investment cannot be sold and a depression results. The way in which people use their incomes, how much they spend, save, and invest, is basic to the whole problem of the cycle.

Having considered the theories of the cause of the cycle, we shall now turn to the theories of the cure.

CONTROLLING THE BUSINESS CYCLE

As would be expected, the proposed means of control vary in general according to the theory of the cause of the cycle held by the proposer. Some anticipate that the cycle may be at least modified through more intelligent action by businessmen. Most of the proposals do agree by anticipating social action at least in part.

Proposals will be divided into (1) those which are designed to prevent the crisis and recession by controls during prosperity and (2) those which are devised to overcome depression and facilitate recovery. Occasionally a proposal will contain plans for each phase of the cycle. Proposals could be classified as to whether they aim to influence the flow of investment through the control of the market rate of interest or through affecting prospective returns on such investment.

“Natural” Recovery. Before attention is given to proposals for social control, a few comments should be made about “natural” recovery, a presumed process much discussed in the business press. According to this idea, recession is a necessary period of readjustment from which recovery will come in the absence of government or central-bank attempts to stimulate business. In fact, such attempts are alleged to retard improvement. Preceding a “natural” recovery must be a period of sharp readjustment. Excessive debt must be wiped out through bankruptcy. Probably overextended banks will fail. Above all, prices must be readjusted one to the other; particularly high prices must fall. Unconsciously, it is assumed that growth of population and demand will absorb excess plant capacity.

Although businessmen oppose government stimulants to business, they support ardently government programs which enable them to avoid bankruptcy or reorganization. They certainly welcomed RFC loans in 1931 to 1932. Moreover, the man who cuts price in order to get volume and incidentally keep up employment is called a “chiseler.” The whole trend of business policy and action is to prevent readjustment, and therefore to impede natural recovery.

This is not to say that there is no tendency for business to readjust during a depression and to move upward. It is merely to point out the conflict between businessmen’s speeches and their practices. It is also to raise the question whether, in view of the growing resistance to read-

justment when maladjustment occurs, it will not be necessary for social action to intervene, either to lessen maladjustment or to assist in readjustment.

Credit Control and Price-level Stabilization. Price-level stabilization is quite widely approved as a means of business stabilization. It is difficult to conceive of a severe depression without falling prices as a contributing factor. As the means of bringing about such price stabilization, the control of credit and interest rates in order to prevent its undue expansion or contraction has been widely supported. Such control, it has been urged, should be exercised by the Federal Reserve System, by its rediscount rate and through purchase and sale of government securities. The method by which reserve banks influence credit conditions was explained in Chap. 13. But sublime faith in the reserve system's power, a prevalent feeling before 1929, has now been shattered. Possibly the system did not follow the wisest course, but it is also clear that no banking control, certainly not that of one nation alone, can resist a price-level decline against the great odds of war-debt and reparation complications, gold shortage in many nations abroad, and the restrictions of all kinds placed on international trade. That the central bank can influence business conditions under certain circumstances was clearly demonstrated in the 1921, 1924, and 1927 depressions and in the 1919 to 1920 and 1923 periods of prosperity. It simply is not an all-powerful tool, nor can its administrators be all-wise. Even the augmented powers of the Federal Reserve plus the strong influence of Federal Treasury operations did not prevent the sharp recession of 1937. In fact, there is much support to the idea that the raising of bank reserve requirements by the Board plus a sharp increase in Treasury receipts and decline in expenditures contributed to that recession.

On the whole credit contraction, as the 1937 experience indicates, may be more successful in checking a boom than credit expansion in arresting a depression. The reason probably is that credit contraction has an unavoidable effect. It causes banks to cut down the scale of lending and thus prevents many businesses from enlarging or even maintaining the level of their operations. On the other hand, the mere availability of credit will not cause a businessman to make use of it, if he feels as pessimistic as most did in 1930 or 1931 or if, in Keynesian terms, he believes the marginal efficiency of capital to be low.

The effectiveness of credit contraction to check a boom was recognized by those, led by Marriner Eccles of the Federal Reserve Board, who in 1947 and 1948 urged Congress to give the Board power to increase the reserve requirements of commercial banks. They felt that such an increase would check the inflation then taking place and thus prevent

the crash which they expected to follow from being as severe as otherwise it might be.

Even though credit control in one country is successful in stabilizing economic conditions and prices, it may, however, be affected by developments—monetary and in business activity—abroad. This is particularly true when the countries are on the gold standard. Most nations, therefore, have attempted to insulate themselves from such influences by introducing such controls over the exchange rates that they are in reality off the gold standard, even though nominally they may appear to be on it, or are altogether on a managed-currency basis. The United States avoids some of these influences by controls and by holding considerably more than the minimum quantity of gold required for reserve purposes.

Planning of Public Works. A second proposal for social influencing of business conditions is through the long-range planning of public works. It is proposed that all governmental agencies plan their public-works program for several years ahead and then postpone all but the immediately necessary construction to times of depression. This proposal should be distinguished from the idea of public works as a means of relief and of stimulating business once a severe depression has been entered. The proposal here is aimed to be a preventive, not a cure after the sickness has become acute. Construction plans, legal authorization, and means of financing would all need to be prepared in advance, ready to put a construction program into actual operation at the first signs of sharp curtailment in business activity. The public funds thus used would increase employment and buying and act as the leaven for renewed activity in private enterprise.

It is generally agreed that governments might well put off to depression time as much as possible of their construction, but whether this would act as an effective control of general business conditions has been questioned on the following grounds: (1) The public is not willing to anticipate its needs for public works and provide the authorization for bond issues. (2) Frequently the "postponable" works are located far from those centers of industry in which unemployment is the greatest. (3) Much of the unemployed labor is unfitted for construction work. (4) The total of postponable public works is so small compared with the total of our productive activity, that, even though it were undertaken at once upon the coming of a depression, it alone could not act as an effective "starter" for the whole of urban industry.

"Pump Priming." During the years 1933 to 1939 much was heard, and practiced, of pump priming, or the use of large government borrowings to take care of the unemployed and build public works as a means

of stimulating business. This policy is also called "deficit financing." Such a program is based on the assumption that readjustment during a depression is slow and that the forces of natural recovery are weak. In its more academic form it is based partly on the doctrines of J. M. Keynes and of Professor Alvin Hansen in this country, which hold that market rates of interest will not necessarily so adjust to prospective returns that investment will be encouraged. In fact, at the bottom of the depression, prospective returns on new investment appear to be negative. The accumulated, uninvested savings reduce the national income and production. Therefore if the government will take some of these savings and spend them, the increase of consumer income and of profits in immediately affected industries will increase the profit prospects generally and start a renewed flow of private investment. The small "primer" of public investment will start the many-times-larger flow of private investment.

Theoretical support for deficit financing is also provided by the underconsumption theories, which hold that the mass of consumers do not have sufficient purchasing power to buy the products of industry. This deficiency in purchasing power, it is held, can be corrected by government payments for relief work.⁷ And indeed Keynes's own theories support this view, because, as he points out, national income is the resultant of investment and consumption, and government payments to people on relief would certainly stimulate consumption. Keynes himself emphasized the necessity of stimulating investment, largely because of the multiplier effect. Other authors, notably Professor H. Gordon Hayes⁸ of Ohio State University, have emphasized the importance of stimulating consumer spending.

The only serious attempt at pump priming in this country's history was part of the Roosevelt administration's program to attain recovery after the 1929 to 1932 depression. As such it deserves a brief description and evaluation. In 1932 the Federal government had begun to run a large deficit largely because of borrowings for the RFC and relief loans to states. Beginning in 1933 it also undertook direct work-relief programs. By 1935 these measures, the manipulation of the gold content of the dollar, and easy credit had not brought about a sustained recovery, and there were still 10 million unemployed. The government therefore expanded its relief and public-works programs so that Federal

⁷ More fundamentally, increased spending can be brought about by a redistribution of income, by giving more to those having low incomes. People with low incomes tend to spend the greater proportion of their income, those with high incomes to save the greater proportion.

⁸ In *Spending, Saving, and Employment* (Knopf, 1945).

expenditures rose to 8.666 billion dollars in fiscal 1936 and the deficit was 4.55 billion dollars, the highest in peacetime history to that date. The rising expenditures and deficits were accompanied by a revival of business, which reached a peak in the first half of 1937. By that time the scale of expenditures and deficits was being reduced (see Fig. 52), and in fact the budget was for all practical purposes in balance by the late summer of 1937.

The business recession beginning in 1937 went so far and so fast that the government reversed itself and started to accumulate deficits again, so that in fiscal 1939 expenditures were 9 billion dollars and the deficit

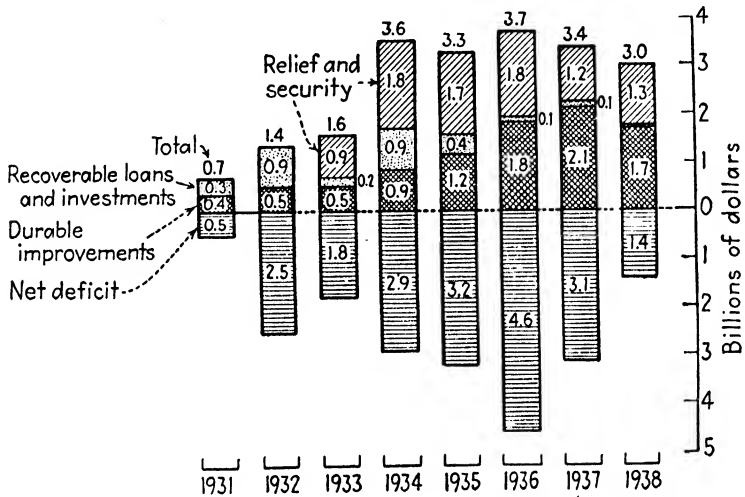


FIG. 52. Federal expenditure for relief and recovery, 1932-1938 (billions of dollars). (Adapted from *National Industrial Conference Board Economic Record*, Vol. I, No. 7.)

was 3.9 billions as compared to corresponding figures of 7.24 billions and 1.38 billions in fiscal 1938. This second increase in expenditure was again accompanied by a recovery, which began in the middle of 1938 and which continued till it merged with the period of defense prosperity—financed by even larger government deficits—in 1940 and 1941.

Evaluation of Pump Priming. As this historical sketch demonstrates, there was a correspondence between the extent of the government's pump-priming expenditures and the state of business in the years 1933 to 1939.⁹ Thereafter the parallelism continued, as the tremendous defi-

⁹ There are many who believe that the parallelism noted above was largely coincidental and that the depression of 1937 to 1938 was due to the sharp increases in wage costs which took place in 1936 to 1937 and to excessive inventory accumulation by manufacturers.

cits of the prewar and war periods were accompanied by unprecedentedly high activity. When, however, the deficits came to an end in 1947, business activity continued to rise.

Does this parallelism prove that pump priming will revive business?

Opponents of the policy claim: (1) that pump priming is ineffectual, as witness the 7 to 8 million unemployed even in 1936 and 1937, and (2) that, once deficit spending begins, businessmen lose confidence and will not invest on their own account because (a) they fear for the credit of the government on account of the recurring deficits, and (b) they resent the competition offered by the government and the regulation that may accompany pump-priming activities.

Defenders of the policy reply to (1) that the reason unemployment was not wiped out in the thirties was that the Administration never went far enough. Had annual deficits, instead of running 3 to 4 billion dollars, been up to 5 or 10 billions, something like full employment would have been achieved. In view of what happened after 1940, when on account of defense and war there occurred what was in economic terms pump priming on an enormous scale, it certainly seems established that a really high level of government spending will inspire a high level of business activity.

Whether the government will ever be able to stop spending is another question, and one to which no positive reply can be given, though it may be noted that the budget was successfully balanced in 1947, after 17 years of continuous deficits. This then leads to criticism (2a), the fear of national bankruptcy.

On this score it can be said that before the war critics of the Administration thought a 50 billion-dollar debt was the absolute limit; it has not yet been shown that a debt of over 250 billions is troublesome. Why a debt incurred to make jobs, build roads, hospitals, bridges, etc., was regarded by a great many as a threat to the country, while the much greater one that resulted from the war and armaments expenditures was not, is inexplicable. Let us recall here our discussion in Chap. 21 of the elements that govern a country's ability to sustain a large national debt.

The evidence certainly seems to show that even if business does not take up the slack in a time of depression, the government can go on accumulating deficits for a long time.

As for criticism (2b), it is true that a far-reaching pump-priming program, were it necessary, might encroach on what are usually regarded as the preserves of private business. In answer it may be said first that an extensive works program can be carried on noncompetitively. If nevertheless it has to go so far as to compete with private enterprise, say in a field like housing, then the only answer is that if private enter-

prise does not provide employment, the government must, even if drastic measures are required.

As to the last point, burdensome regulation, this is largely the result of historical coincidence. Just because the spending operations of the thirties were accompanied by an extensive program of business reforms and regulations does not mean that it always has to be done that way.

In conclusion, it can be said that while a pump-priming, deficit-spending program may lead to national bankruptcy and the sapping of private initiative, these are remote dangers, whereas mass unemployment is one that no modern government can long tolerate.

Economic Planning. During the troublous years 1930 to 1939, the idea of *economic planning* came rapidly to the fore as a means of business stabilization. The proponents of this means of social action for the prevention of depressions find the chief difficulty of unregulated capitalism to be the inability of the price system to bring about a proper coordination of effort in the different fields of industry. Proponents of this idea also point out that during the war, when the system was under great strain, successful resort was had to economic planning.

Whether or not economic planning aimed primarily at the coordination of production will solve our difficulties depends not only upon whether the cycle finds its root in maladjusted production, but also upon whether production control which will prevent or correct such maladjustments can be planned or carried into effect under either capitalism or under socialism. This will be discussed in Chap. 30.

Questions and Problems

1. Why is the problem of the business cycle so important?
2. What is meant by the term *business cycle*? Distinguish the business cycle from other types of change in the volume of production and trade.
3. What changes frequently take place in a business cycle in some of the major aspects of business, finance, and labor?
4. What is meant by "flow of investment" or "capital formation"? How does capital formation change in quantity during the stages of a business cycle? Why does capital formation vary?
5. What are the difficulties with weather theories of the cycle?
6. Explain the credit theories of the business cycle.
7. Sketch the theory of J. M. Keynes.
8. Evaluate the long-range planning of public works.
9. Explain the reasoning behind "pump priming."
10. Would or would not a shift in income from those with high to those with low incomes help prevent business cycles?
11. Pick out the common elements among the cycle theories presented.

Suggested Readings

1. W. C. Mitchell, *Business Cycles* (1927), is the most complete, authoritative analysis of this subject.

2. John Maurice Clark, *Strategic Factors in Business Cycles* (1934), is a brief and thoughtful analysis of business cycles which contains a minimum of statistical data.

3. E. C. Bratt, *Business Cycles and Forecasting* (1948), contains a good description of the changes in various phases of business during the business cycle. It also contains a good discussion of casual influences and summarizes much of the recent thinking on business cycles.

4. A. H. Hansen, *Full Recovery or Stagnation?* (1938), Part I, is recommended as a summary of business-cycle thought. Part II of the book discusses consumer income during the cycle and the possibility of influencing this income by the judicious use of the Federal social-security reserves. Part III deals with some international influences on business conditions. Part IV, on the Economic Outlook, contains, among other topics, a discussion of pump priming and of economic stagnation.

5. Gottfried von Haberler, *Prosperity and Depression* (1939), contains an excellent summary of business-cycle theories.

6. H. Gordon Hoxby, *Spending, Saving and Employment* (1945), is a very provocative book, emphasizing the necessity of maintaining consumption in order to prevent depressions.

7. Joan Robinson, *Essays in The Theory of Employment* (1937), is an interesting, though simplified, version of Keynes's theories.

8. W. C. Mitchell and A. F. Burns, *Measuring Business Cycles* (1946), is a thorough-going analysis of the statistics of the cycle.

CHAPTER 29

ECONOMIC CONTROLS IN THE UNITED STATES

Except for tariffs, taxes, and banking laws, government control of or intervention in economic activity in the United States can be said to have begun with the Interstate Commerce Act in 1887 and the Sherman Antitrust Law in 1890. But little more was done along these lines except for some amendments to the ICC Act in 1907 till the Wilson administration, under which the Federal Reserve Act, the Federal Land Bank Act, the Clayton Act, the Federal Trade Commission Act, and the Adamson Act (dealing with the eight-hour day on the railroads) were passed. During the First World War the area of government control was greatly extended, as it took over the ownership of the railroads, set up the Food and Fuel Administrations to control the distribution and to some extent the price of these commodities, and formed the War Industries Board, which attempted more general price control and laid down priorities to guide production.

In the twenties, all the wartime controls were swept away, and the antitrust laws were pretty much in abeyance, so that the only effective economic controls were those over credit as exercised by the Reserve System.

Government control over economic activity in this country, in any general sense, can therefore be said to have begun with the Roosevelt New Deal of 1933 to 1938. We have already described much of the banking, social-security, labor, and particularly the agricultural legislation of the New Deal period. Nevertheless, because many of the economic controls and measures of social amelioration established by the New Deal are still in effect and, indeed, are now embedded in our social and economic structure, it is worth reviewing the history of that period and giving a coherent view of what the New Deal was trying to do.

Another reason for this review is to recall to mind the fact, which so many seem to have forgotten, that the New Deal grew out of the Great Depression. Another severe depression might well father another such extension of control over economic activity.

DEVELOPMENTS LEADING UP TO THE NEW DEAL

Disturbing Factors, 1928 to 1929. In retrospect we can see at least three alarming factors affecting the United States in 1928 and 1929,

which might, if fully realized at that time, have led to the anticipation of the events following the latter year. First, certain maladjustments in our productive system had become marked. The production of certain basic raw materials—petroleum, copper, soft coal, lumber, and other articles—had expanded and was in excess of consumption. Large excess inventories in them had accumulated, and these accumulations were accentuated by price-maintenance schemes which retarded consumption. Some consumer-goods industries, notably textiles, had long been in difficulties and others, such as automobiles and radios, had become overextended in the preceding years.

The second factor was the inflation of security prices, common stock prices having been forced in September, 1929, to a point 160 per cent above 1925. Some stocks were selling at fifty times their annual earnings. Those who thought coolly during this period of "paper profits" foresaw an adjustment in business activity and in security prices, the latter to be rather severe, but few, if any, seem to have anticipated the depths of the business recession which was approaching.

The third force, portent of ill, was the general financial disequilibrium. Germany was poverty-stricken, saddled with an impossible reparations load. England's international position was in jeopardy. In the United States, debts, public and private, had increased much more rapidly than either the national wealth or the national income. International loans, particularly by the United States, during and after the war, had mounted to such totals that it was very questionable whether they could be repaid according to contractual agreements. Certainly their repayment would require such a reduction in our exports, or increase in imports, as to call for important changes in our economic activity. The world's monetary stock of gold was maldistributed—two nations, the United States and France, possessing a distinct surplus, whereas other countries were suffering for lack of reserves for their currency and credit systems.

Beginning of the Great Depression. By July, 1929, a distinct decline in productive activity had begun, of which few were aware, their eyes following security prices as a barometer. The latter inevitably crashed, reacting to the prevailing high interest rates, to reduced business activity, and, above all, to the fact of their unwarranted height. After the security debacle of "black October," during which the prices of common stocks dropped 40 per cent, business distinctly paused but, at that, hardly dropped below normal. Publicists, politicians, and business leaders emphasized the "fundamental soundness" of the nation; few yet feared drastic recession. In fact, a distinct upward movement began in the spring of 1930, but soon exhausted itself. From then on, the downward movement was rapid and received no important check until March, 1933.

The depression during 1930 was without phenomenal developments as compared with the events of the three following years. Yet the continued and the rapid fall of prices of many classes of goods without changes in costs of other goods and services, during this period of twelve months, plus new barriers to international trade, did not augur well for the future. Every decline in wholesale prices brought added burdens to the debtor entrepreneurs and increased the price disparities between certain raw materials and similar highly competitive goods, on the one hand, and the prices of those goods influenced by monopoly, on the other. The existence of these latter "sticky" prices, as some writers aptly phrase them, was distinctly more evident in this depression than formerly. Price declines, world-wide in their scope, plus barriers to the normal course of trade, contributed to the financial collapse of many nations in 1931 and following, notably of England, and thereby created for the world acute monetary problems. The working of these forces, however, was largely hidden, and the last of 1930 saw a strong feeling that 1931 would certainly bring better times.

The Years 1931 and 1932. Ill-fated 1931 brought only financial difficulties, further price declines and price disparities, and continued decline in industrial production and trade. A series of banking difficulties in Europe spread to this country. Struggling Austria's Kreditanstalt failed in May, and the large Darmstaedter Bank in Germany in June. Then the demand for cash concentrated on London, forcing England off the gold standard in September. The consequent bank failures from September to December in this country reached the total of 1,360, and we were drained of 700 million dollars in gold during two months of this period, which, however, soon returned. Clearly such a pressure on financial institutions could only force further credit contraction, price declines, business failures, and general uncertainty.

A combination of governmental and Federal Reserve action eased credit conditions in 1932. The formation of the Reconstruction Finance Corporation in January with 500 million dollars of capital supplied by the government and with power to sell bonds or debentures with which to make loans to banks or corporations eased some of the most stringent needs. The open-market purchases by the Federal reserve banks from March to June, to the unprecedented amount of about 1 billion dollars, put additional funds at the disposal of the hard-pressed banks. By late summer the banking situation was distinctly better, but by this time the level of business was so low that suffering was acute. Industrial production in August, 1932, was 53 per cent below 1929; about 13 million workers were unemployed. The resources of private charity were becoming exhausted. Some local governments were on the verge of bankruptcy, and even some states found it difficult to raise additional funds

for relief. Congress authorized loans to the states by the RFC. In the fall, mild recovery took place in certain branches of industry, notably in textiles and shoe production, based on exhausted inventories of these goods, but no fundamental expansion got under way. The previous European market for American farm products had largely disappeared. Prices received by farmers for their products averaged in 1932 only 42 per cent of 1925 prices, or 65 per cent of 1909 to 1914 prices. Prices of goods bought by farmers, however, were still at 107 per cent of 1909 to 1914 prices.

By the winter of 1932 to 1933 the demand for inflation through the use of paper money, the remonetization of silver, or by some other means, had grown insistent. Debtors were desperate, as was shown by violent resistance to foreclosures on farms in the Middle West.

The Year 1933. After the turn of the year the financial uneasiness returned; banks and corporations called their funds home. In late February, bank holidays were declared in some states, notably in Michigan, and, from this announcement of the gravity of the situation, uncertainty spread like wild fire, so that the new President, immediately after his inauguration on March 4, ordered a nationwide bank holiday pending the working out of a plan for financial stability. The subsequent legislation gave almost unlimited powers to the national executive on monetary matters, including the suspension of the gold standard, the issue of additional money, and the reopening of the banks. Within two weeks after the bank holiday was declared on March 6, about 13,000 out of the 18,000 banks previously in operation had been reopened. The country knew that the condition of these banks had been approved and that the government had almost unlimited powers of currency issue in order to support these banks. Confidence returned, deposits grew, hoarding of cash declined, and the banking situation improved.

In his inaugural address and in subsequent statements, President Franklin D. Roosevelt clearly indicated his intention to take steps designed to increase the price level. Three acts made his purpose and his method more definite. First, he asked and received from Congress almost unlimited currency powers, including the power to issue up to 3 billion dollars of additional currency, the power to reduce the gold content of the dollar as much as 50 per cent, and the power to authorize the purchase of additional securities by the Federal reserve banks up to 3 billion dollars—any or all of these means to be used at his discretion. Second, in April he refused to license further exports of gold, thus cutting the dollar loose from parity with gold. Enthusiastic buying of commodities and of stocks began, but, more fundamentally, industrial production increased 26 per cent between March and May. Third, the President's refusal to agree to the stabilization of the dollar at a fixed ratio to such

gold currencies as the franc, even though tremendous pressure to do so came from many of the nations meeting in the World Economic Conference in June and July of 1933, indicated clearly his intention to force prices upward. Roosevelt's stand was that the money system should be so changed and controlled as to force prices up to a point where debts could again be paid on the average with the same quantity of goods as would pay these debts at the time when they were contracted.

GENERAL CHARACTER OF THE NEW DEAL

Economic Philosophy of the New Deal. Those who aided in designing the New Deal have written much of their economic philosophy. Professor A. A. Berle, Jr., who is credited with having had much to do with the formation of the program has the following to say:

There is no mystery about the economics of the New Deal. For several generations, governments ran their affairs on the theory that natural economic forces balance themselves out. The law of supply and demand would regulate price. When there was too little supply, the price would go up, and this would automatically increase the supply. When there was too much, the price would go down, and this would automatically decrease the supply. The efficient producer would succeed, the inefficient would fail, and this would keep the productive capacity of the country about in line with the needs for consumption. When credit was needed, bankers would supply it; when too much credit had been extended, there was a period of general inflation¹ cutting down the debt. All this was comprehended in the governmental theory of the time which was really based on the classical economics of Adam Smith.

A tremendous force came into the world in the middle of the nineteenth century. It is usually tied up with what is called the industrial revolution and the advent of large-scale production. But we know now that the actual forces released ran further than that. The power and force of organization had come into economics. Originally this collected around great investments of capital in huge plants, such as railroads, steel companies and the like. But as the economic machinery adapted itself to the idea of great organizations to run these plants, it became possible to have great organizations only partly dependent upon such plants.

This has led to a revision in some of our economic thinking. No longer can we rely on the economics of balance to take care of human needs. The effect of organization will distort and delay the forces leading to a balance to a degree as yet unmeasured. . . .

The old economic forces still work and they do produce a balance after a while. But they take so long to do it and they crush so many men in the process that the strain on the social system becomes intolerable. Leaving economic

¹ Berle says "inflation." Inflation, however, does not cut down debt; deflation does that. Inflation causes debt to be less burdensome and causes it to be increased. Deflation causes it to be more burdensome and causes it to be reduced. The word "inflation" in Berle's published statement may be a misprint.

forces to work themselves out as they now stand will produce an economic balance, but in the course of it you may have half of the entire country begging in the streets or starving to death.

The New Deal may be said to be merely a recognition of the fact that human beings cannot indefinitely be sacrificed by millions to the operation of economic forces.²

Thus the New Deal philosophy is aimed to replace the older doctrine of *laissez faire*. Under this theory, government was to be judge and referee and to set the rules of the game. The actual playing, however, was to be in private hands, and the coordination of specialists, the adjustment to change, and the provision of balance were to be done by the market. There, through the effect of changes in supply and demand upon profits, the entrepreneur would change his production and balance would be obtained. Under the New Deal philosophy, however, the government will not hesitate to step in actively as a player—possibly the star—on order to stimulate recovery and to guarantee more permanent good times thereafter.

Amelioration, Recovery, and Reform. During no six-year period in our history has such a comprehensive and varied program of legislation been put in effect as from 1933 to 1938. Almost every phase of economic life was touched; the rules under which business is conducted were drastically rewritten. Three broad objectives appear to have stimulated this increased legislation. Underlying all objectives is the assumption that government is to be primarily responsible for economic affairs.

First, there was need to ameliorate the dire condition of great segments of our population while recovery was getting under way. The 14 million unemployed and large portions of the farm population were either in actual want or were facing the loss of their property. Thousands of families were threatened with the loss of their homes through foreclosure. Business and financial firms, many of them of gigantic size, were on the verge of bankruptcy. Even whole cities were in similar financial straits. To solve these immediate situations a number of acts were passed. Public works, work relief, and direct relief assuaged the ills of the unemployed. Refinancing of farm mortgages helped the farmers. A similar program was carried out for home owners by the Home Owners Loan Corporation set up in 1933. The RFC was enlarged and provided funds to assist banks to reopen after the bank holiday and to make loans to industrial and railroad companies.

Second, a large portion of the legislation was designed to assist the upward movement of industrial production and the price level and to restore the 1929 level of incomes. Some of the steps taken might be

² A. A. Berle, Jr., "The Social Economics of the New Deal," *New York Times*, Oct. 29, 1933.

viewed as *facilitating* the recovery in which upward movement would be primarily caused by a *natural* improvement in profit prospects. By general agreement, the handling and "cleaning up" of the banking situation of March, 1933, is in that category. Some would hold that the departure from the international gold standard was necessary, that the gold standard was pulling our prices downward. Businessmen generally would hold that government aid to prevent bankruptcy was an aid to recovery. The major emphasis in the recovery program, however, was on governmental acts to *stimulate* the recovery of business by creating better profit prospects.

Third, the New Deal undertook a major program of changing economic institutions and practices in directions which its promulgators considered to be reform. Phases of our economic processes which they held contributed to depressions were to be changed or brought under control. Injustices, such as those which had surrounded some security issues or which were involved in at least some employer-employee relations, were to be abolished. Both as a means of preventing future depressions and in order to bring greater economic justice, income distribution was to be made more equal.

THE RECOVERY PROGRAM

View of the Recovery Problem. An analysis of the recovery laws indicates a belief that increasing profit prospects awaited increased consumer income and a correction of the extreme price disparities brought by the price-level collapse after 1929. Rather than attempt to bring individual commodity and service prices into harmony by forcing the "sticky" ones downward, the program was to force the low, flexible prices upward. The monetary and credit-expansion program was intended to raise agricultural and other flexible prices relative to more rigid price while agricultural prices were also to be raised directly by the farm program. Farmers' purchasing power was expected to increase. Labor's spendable income was to be augmented directly through relief to the unemployed and jobs on public works. Chiefly, however, labor's income was to grow as a result of the wage raising under the National Industrial Recovery Act, to be described in the next section.

One of the main objectives was to increase business confidence. Insurance of bank deposits reduced to near zero the chances of runs on the banks. The departure from gold in consequence designed to bring rising prices and destroy the fear of falling prices. Government spending and other programs were expected to stimulate retail trade; a greater volume of business for industry was envisaged.

In the early years of the New Deal, no steps were taken directly to stimulate the flow of long-term capital except the forcing downward of

interest rates. Federal reserve purchases and bank purchases (the latter by creation of credit by banks) of the frequent issues of government bonds necessitated by the rapidly growing Federal debt, at a time when there was little private demand for loanable funds, forced short-term interest rates to near the zero point. Bond yields, *on prime bonds*, followed downward. Indirectly the New Deal proponents expected the stimulation of consumer purchases to encourage not only the use of working capital for inventories but also the use of depreciation reserves for plant modernization and use of new long-term capital for expansion.

The National Industrial Recovery Act. This act, though it did not bring recovery and was declared unconstitutional in 1935, after less than two years' operation, is worth recalling because some of its features, notably its labor provisions, have become part of present law, and because its industrial-control features were the outgrowth of the philosophy that *industrial planning* is a better way to control prices and production than a free market.

Provisions of the Law. Under the NRA a *code of fair competition* was to be drawn up for each industry, the provisions of which were subject to the approval of the Administration. These codes contained provisions governing minimum wages and maximum hours of employees, providing for collective bargaining between employees and employers, prohibiting the employment of children, and regulating such selling practices as credit terms and cash and quantity discounts to the buyer. Frequently the codes permitted the code authority for the industry to control the volume of production by assigning production quotas and, in a few cases, by restricting plant modernization or enlargement. In a number of codes arrangements were made for setting minimum prices, usually in some relation to the average cost for the industry.

Organized labor accepted the law because of the opportunities presented to expand unions and improve conditions. Businessmen were willing to make these concessions to labor because they were enabled as a group to control prices and production, to plan operations for an industry as would be done if there were only one firm in it; in other words, to impose a monopolistic policy.

Despite all the fanfare that attended its early operations, the NRA proved a resounding failure as a recovery device because for one thing it attempted an impossible administrative job—to set up machinery in a few months for governing all the country's industrial and mercantile activities. More important, the theories on which the act was based were contradictory and not soundly planned. On the one hand, it attempted to increase purchasing power by raising wage rates, but on the other the beneficial effects this might have had were nullified by advances in costs and prices which prevented any real increase in pur-

chasing power. Then restrictions on production were permitted which prevented enlargement of the real national product and which discouraged investment to expand plant capacity.

The other recovery measures undertaken by the government were, in the end, much more effective. Among the most important of these were the attempts to stimulate investment.

Attempts to Stimulate Flow of Investment. Progressively the Federal administration became persuaded that the government must take steps to increase the flow of capital, primarily long-term. Government public works and relief, government loans to individuals and businesses, and government sharing of risk with financial institutions were all tried.

Government Lending to Business. The RFC role was partially changed from that of emergency lender to borrowers threatened with bankruptcy to that of lender for operations and expansion. Some types of loans were made directly, some with the participation of banks. The Federal reserve banks undertook to participate with member banks in longer term loans to business. The Export-Import bank was set up to finance foreign trade—in practice to make loans to exporters or the foreign purchasers of exports. The REA made long-term loans to rural cooperative electricity-distribution organizations and to rural purchasers of electrical equipment.

The principle of government sharing of the risks on loans was given its widest use under the Federal Housing Act. Loans under this act are made by financial institutions, but on loans qualifying under the act the government reimbursed the lender up to 20 per cent for losses taken. A fund for this purpose was built up by a small charge on each borrower.

The government itself made large investments through the public-works and relief programs, as indicated in the section on pump priming in the preceding chapter. It must be admitted that this did not in the 1935 to 1937 period inspire private investors to do likewise. There was little or no long-term capital formation by industry at that time. For the reasons stated previously, businessmen were reluctant to invest. Some contend, however, that had the government's pump-priming program been carried far enough to achieve a higher level of employment, and had it not been cut down too abruptly in 1937, this reluctance would have been overcome.

In any case, hampered by some New Deal measures like NRA, helped by others like the public-works and housing programs, the trend of business was irregularly upward from 1933 to 1937, to be interrupted by the depression of 1937 to 1938, after which the upward swing was resumed, to continue for ten more years of peace and war.

The extent to which the recovery of 1933 to 1937 was the result of

the New Deal measures was and is a matter of dispute. On the one hand it is argued that, considering the state the country was in in 1932 and in 1933 before President Roosevelt's inauguration, drastic action was required to bring recovery. In contrast, critics of the New Deal have also contended that its reform program hindered recovery. It is possible that some of the measures to be described below discouraged businessmen, but it may have been much more important to put into effect reforms in the American economic system. Certainly most of these changes are now accepted even by critics of the New Deal.

THE REFORM PROGRAM

Money and Credit. The legislative and administrative acts with reference to money and banking can be summarized under the heading *money management*. The doctrine of the gold standard as an automatic control of the volume and value of money was dropped. Even the return to a form of the gold standard in 1934 did not mean a departure from the principles of administrative control of the money standard. The remaining discretionary powers of the President plus the fact of large surplus gold holdings left room for free action by the Administration.

Added to the control of money in the narrow sense were the strengthened Federal Reserve and Treasury controls of credit. What vestiges of the older doctrine of automatic credit control through the action of individual banks had been left by the Federal Reserve Act of 1913 were struck out by the Banking Act of 1935. Now the doctrine adopted was strictly one of the *quantity* of bank credit, controlled by governmental agencies. Finally, as a means of stimulating increases when desired in the quantity and rise of bank credit, the pump-priming theory was given a major trial.

The government in effect assumed responsibility for the volume and degree of use of money and bank credit.

Business and Financial Processes and Practices. Two pieces of legislation were aimed at changing practices in the floating and sale of corporate securities. First, the Banking Act of 1933 forbade commercial banks to engage in investment banking. Unwise action by investment affiliates of large commercial banks during the 1920's had convinced the public that the assumption of the dual role by the banks had contributed to the victimizing of many investors. Others banking practices, such as loans to directors and loans on securities, were subjected to increasing restriction. More comprehensive in scope was the Securities and Exchange Act, which undertook so to change procedures and practices in the sale of securities by investment houses that the investor would have a better basis upon which to judge the merits of the stocks and bonds.

The SEC, as the administrative commission is called, filled a generally recognized need, although the cumbersomeness of its machinery and the uncertainty of its practices in the first years of its operation may possibly have impeded the needed flow of new long-term capital into industry.

In somewhat similar vein, the Public Utility Holding Company Act was passed with the purpose of forcing a simplification of corporate structures in the electric-power field. Evidence was presented to Congress which showed that frequently the practice of building holding company upon holding company had been for the purpose of manipulating the affairs of some companies, and more particularly had led to the sale of securities which became worthless at the time of a reversal from prosperity. The Insull utility empire crashed, and the securities of several other super-holding companies became nearly worthless. The SEC was given the power to force changes in corporate holdings and forms with the general objective of destroying holding companies, except those which could demonstrate their merit.

Shifting now to business practices, the Robinson-Patman Act of 1936 revived some of the NRA restrictions on business practices. The major purpose of this law was to prevent the giving of excessive quantity, cash, or other discounts. Large buyers, who were in a strong bargaining position, had been able to obtain such favorable discounts. The general rule set down by this law is that a seller can sell to various buyers at different prices only when, and to the extent that, the different orders represent differences in the seller's cost of doing business. Thus a quantity discount cannot be greater than the demonstrable economy to the seller in producing or handling the larger order. Preceding this move to strengthen competition and equalize opportunity, however, had been the Miller-Tydings Act, which gave the manufacturer power over the resale price of his goods. Clearly this latter law strengthens one of the most invidious forms of monopolistic competition in this country—the nationally advertised brand.

The last major aspect of business practices refers to the basic problem of whether control of economic affairs is to be through the market or through organized groups under governmental supervision. The latter was the view of the NRA, as was indicated on page 672. After the collapse of that movement, the Administration fluctuated between the two policies. Then in 1938 the combined legislative-administrative Temporary National Economic Committee was formed. Although called the "Monopoly Committee," the TNEC did not hasten to propose legislative or administrative attacks on monopoly. Rather it undertook a comprehensive examination of the functioning of the whole economic order, which, however, did not result in legislation.

Labor and Social-security Legislation. The principal laws under this head have already been discussed. The Wagner Act setting up the National Labor Relations Board was an attempt to assist labor to form organizations powerful enough to stand up to industrial corporations. The Wage and Hours Act, also known as the Fair Labor Standards Bill, established a forty-hour work week (with time and one-half for working longer hours) and a 40-cent per hour minimum wage. In 1938, when the Wage and Hours Act was passed, it may have had a slightly inhibiting influence on employment, though, as pointed out in Chap. 15, in all likelihood that would have been employment under conditions not befitting the United States. Ten years after, when the forty-hour week had become almost universal and the average hourly wage in manufacturing industry had risen to \$1.29, standards were so much higher in most industries than those required by the act that it no longer had much effect. In 1949 the law was amended to raise the wage minimum to 75 cents an hour.

We have already described the social-security legislation in some detail in Chap. 18. Not only will this program provide greater security for the insured, but the payments will cushion a business recession by sustaining purchasing power. In enacting such legislation in 1935, the United States was very belatedly joining the company of the other major industrial nations. A comprehensive system of social security had been in effect in Germany since the 1880's and in England since 1912.

Not all security is for labor. There is a variety of programs to protect farmers against the rigors of competition. Bank depositors are protected by deposit insurance. The Miller-Tydings Act strengthens the protective device of the trade-mark by permitting manufacturers to fix the resale price of their goods. Governmental agencies of various sorts offer loans on easy terms to hard-pressed farmers, home owners, railroads, banks, and industries.

Agricultural Program. Inasmuch as the agricultural program has been described in detail in Chaps. 25 and 26, it will be appropriate here to put forward some generalizations concerning that program, which has two main elements: (1) supporting the price of farm products, directly as by loans and purchases, and indirectly by subsidizing exports and domestic consumption; and (2) conserving the fertility of our soil resources.

The price-support program grows in part out of the special conditions affecting the supply of agricultural products, among which are: (a) that there are sharp variations in annual output of many commodities, (b) that many products are perishable or at least entail very heavy costs of carrying, and (c) that production must be planned from several months to several years in advance and once started cannot be stopped. On the

other hand, the demand for many farm products is inelastic. The net results of these demand and supply peculiarities are wide variations in price for most farm products. Farming is therefore quite speculative. This, on the one hand, leads to frequent periods of heavy loss, which is made the more severe by heavy taxes and indebtedness, and by the rigidity of the prices of commodities bought by farmers. On the other hand, farmers' management becomes a matter of estimating prices, both in selecting what to produce and when to sell—questions which the farmer is not qualified to answer.

The price-support program can be viewed as stemming from the belief that agriculture needs an organization and powers over its supplies comparable to that exercised by urban industries, which are dominated by monopolistic competition, for protection against the economic effects of the conditions listed above.

The soil-conservation program has been described as a program which pays farmers for doing what they would do themselves if fully enlightened. Nevertheless, it is worth while from the national point of view to undergo the expense caused by farmers' lack of enlightenment, because it is very important to the country to preserve the fertility of the soil. Furthermore, from the point of view of an individual farmer, especially one who does not expect to operate a particular farm for more than a limited period, it may well not be worth while to bear the cost of conservation practices that may not produce results till after he has left the farm. It is to his economic advantage to "mine" the soil. But it is to the national advantage to make payments to prevent this from happening.

Other Programs. For the sake of even partial completeness, other important New Deal measures should be mentioned. Among them were the Farm Bankruptcy Act, which made it possible for dispossessed farmers to buy back their farms and delayed proceedings against those threatened with dispossession. The Bituminous Coal Act—a sort of little NRA for that one commodity—governed the prices and production of bituminous coal. There was a succession of housing acts, aimed not only at keeping homes in the hands of their owners but at encouraging private construction and providing Federal funds for slum clearance.

The TVA, the Bonneville Power Authority, and other combined hydro-electric, flood-control, and irrigation projects have been touched on and the foreign-trade program discussed.

This brief review only begins to suggest the scope, variety, and importance of the innovations in American social and economic life for which the Roosevelt administration was largely responsible. Most of them, as the Republicans no less than the Democratic party platforms attest, are regarded as permanent by the vast majority of people. The social-

security system, Federal control of dealings in securities, the farm program, not to mention the TVA dams, are here to stay.

AFTER THE NEW DEAL

Wartime Controls. Organizing the nation for war involved on the economic side two major problems: (1) stabilizing prices, and (2) allocating materials. Because vast government expenditures for armaments were putting billions of dollars' worth of purchasing power into the hands of private citizens, at the same time that the United States government and foreign governments were competing with them to buy a stock of industrial materials and food that suddenly appeared very small in light of requirements, a monstrous price inflation was threatened. To prevent this the OPA labored manfully and succeeded from 1941 to 1943 in slowing down the rise in prices and from 1943 to 1945 in holding them practically level. Assisting in the stabilization effort were the War Labor Board, which maintained control over wages, and the War Savings Bond campaign, which helped sop up consumer purchasing power.

Because materials of all sorts were scarce in relation to demand, and because price was ruled out as a means for dividing commodities and services among competing claimants, a system of allocation and rationing was established. This covered all important commodities, agricultural and industrial, which were apportioned to the various claimants—like the Army, Navy, foreign governments, and the civilian economy—by the War Production Board and the U.S. Department of Agriculture. On the level of the individual consumer, rationing was administered by the OPA.

Even before V-J Day, the dismantling of the immense and elaborate structure of wartime controls, which had affected every aspect of the economy, was begun. Before the end of 1945 practically all the allocation and rationing programs were abrogated, as well as many of the price controls. By the end of 1946 most of the remaining price controls, chiefly on food, were taken off, partially at least as a result of the meat famine in September and October, 1946, caused by the cattlemen who held back customary deliveries to market. The numerous regulations on the use of housing materials were removed at the same time, leaving only export controls and an attenuated form of rent control in effect.

Throughout 1947 and thereafter, therefore, business was able to operate on a "normal" prewar basis.

Postwar Legislation. A number of significant acts passed after the end of the war should be mentioned. One of these is the Employment Act of 1946, which established the Council of Economic Advisors to the President and the Joint Congressional Committee on the Economic Report. This law does not confer any powers to the council, but it pro-

vides a means whereby important economic trends are analyzed and presented to the government and the nation. The President, with the aid of the council, has to present an annual economic budget and give an estimate of the state of employment and business for the coming year, with recommendations to Congress for any needed legislation. Thus the Employment Act provides an opportunity for actions in the economic field to be taken in advance of a recession.

Though not usually thought of as being in the realm of economics, the Atomic Energy Act will prove to be as important in that field as in the political or military. For one thing it gives virtual control over what will be an important source of power and Heaven knows what else to the government, so that the government will be directly involved in what will be a major segment of the economy. For another the law provides:

Whenever in its opinion any industrial, commercial, or other non-military use of fissionable material or atomic energy has been sufficiently developed to be of practical value, the Commission shall prepare a report to the President stating all the facts with respect to such use, the Commission's estimate of the social, political, economic, and international effects of such use, and the Commission's recommendation for necessary or desirable supplemental legislation. The President shall then transmit this report to the Congress together with his recommendations. . . . [Section 7(b)].

The effect of this provision can perhaps be envisaged if it is imagined that there had been a Petroleum Energy Commission in 1900 and it had been required to make similar recommendations to control the economic development of the automobile and the vast industries associated with it.

The Taft-Hartley Act, passed in 1947, modified, as we have noted, many of the provisions of the Wagner Act, making many union actions subject to penalty. Most important, however, was the section permitting the Federal government to ask for injunctions in labor disputes threatening national health and security and the Supreme Court decision in the United Mine Workers' case in 1947 permitting Federal injunctions in certain types of labor cases.

Just because the OPA had held prices down and the Treasury had encouraged people to save, individuals by the end of the war owned about 55 billion dollars' worth of savings bonds and other government securities, of which about 45 billions had been accumulated during the war. With the end of the war, people wanted to spend at least part of their enormous savings on what they could not get during the war. Employment, including persons in the armed forces, went up to the 60 million level and stayed there. Wage rates and farm prices rose, the latter at times to spectacular levels, so that civilian purchasing power was enor-

mous. In the first quarter of 1948 disposable personal income in the United States was at the annual rate of 186 billion dollars, the highest in history. Simultaneously foreign demand, buoyed by UNRRA, by various other foreign-relief programs, and most of all by the Marshall plan, continued strong. The Federal government, particularly after the first part of 1948, when it undertook an extensive rearmament program, was in need of vast quantities of industrial materials.

The very effective and immense demands from all these quarters, made the more voracious because of the five-year interruption all over the world to normal peacetime production, had the result that is to be anticipated when the effective supply of money far outruns that of goods—prices went up. In April, 1948, the Consumers' Price Index was 169 per cent of 1935 to 1939 average, retail food prices were 208 per cent, and the general wholesale price index had about doubled its prewar average.

While the price movements of the time were a source of widespread concern, little effective action was taken, which illustrates the difficulties of public control. There were wide differences of opinion as to the seriousness of the situation, as to the causes of the price movements, and as to the probable efficacy of various types of control. Each powerful economic group blamed the other; some said mounting wages were the cause, others pointed to rising farm prices, while farmers and workers referred to manufacturers' prices and profits. Beyond this the 1948 presidential campaign was in the offing and since the President and the Congressional majority were of different parties, there was a great deal of maneuvering by each to shift the blame to the other.

Congressional action was necessary before any important steps could be taken. Because it had supported the government bond market at high prices as part of war finance, the Federal Reserve Board could not order the sale of government bonds by the reserve banks as a means of tightening up on credit without forcing bond prices down sharply. A sizable fall of bond prices would have created problems for the commercial banks, which held a large fraction of the national debt. Most independent analysts felt this was unwise and would have preferred some means of restoring the Federal Reserve Board's power to restrain credit, without a fall in the government bond market, but this required legislation which Congress was unwilling to enact.

The whole pattern of wartime direct control over prices had been suspended in 1946 and the organization for the administration thereof disbanded. Not only was there genuine doubt as to the efficacy of such controls in peacetime, particularly if rebuilt to cover only parts of the economy, but there was also widespread dislike for direct controls of

this sort. Altogether, aside from controls over installment credit and power to allocate some scarce materials, nothing was done.

Our purpose is not to judge the merits of the opposing views summarized here, but rather to indicate the tremendous difficulties of developing and getting approval for a program. It is too superficial to label such controversy as "politics"; honest differences of views and conflict of economic interests are more basic factors.

PROBLEMS OF SOCIAL CONTROL

Nationalism versus Internationalism. One of the frequently voiced criticisms of the present system of controls is that some make for economic nationalism while others are intended to encourage international trade in general and the participation of the United States in that trade. Thus, the trade-agreements program, the foreign-aid program, in particular the Economic Cooperation Act, United States sponsorship of and active participation in the International Trade Organization, the International Monetary Fund, and the International Bank are all examples of the latter policy. On the other hand, the agricultural price-support programs in general, and the Wool and Sugar acts in particular, are designed to prevent or limit imports, to put United States farm prices above world levels, and to isolate them from the influence of the world market. And our tariff system has the same effect as far as other commodities are concerned.

This conflict has been apparent in various guises since 1933 and gives no signs that it will be resolved. In fact, it probably never will be, as there will always be powerful economic interests on the one hand, like the dairy and wool producers, who believe that their interest requires the exclusion of competing foreign products, and on the other hand industries like those producing cars and farm implements and farmers like cotton or tobacco growers, with big export markets, who will favor expanding international trade.

Laissez Faire versus Social Control. There are other important questions involved in the extension of social and economic regulation in the United States than whether all controls are consistent with each other. One of these is the extent to which social control should be carried.

In considering the relations of the government to agriculture, and to other parts of our economic life as well, attempts are often made to designate the nation's economic policies in the past as *laissez faire* and to advocate for the future a policy of economic planning. As we have previously mentioned, *laissez faire* means to leave the matter to work itself out, without government or other outside interference. This expression dates its popularity from its use by the French physiocrats from

1750 to 1775, in their vigorous protests against the extreme interference with individual liberty and the extreme regulation of all economic matters, which at that time were practiced in France under mercantilism. Adam Smith in 1776 protested against the same sort of regulation in England, and his protests had great effect in succeeding years on English economic life.

The student should note that *laissez faire*, *social control*, and *economic planning* are all policies which may be applied in different degrees and in different ways. No nation ever has practiced absolute *laissez faire* in economic matters. Every nation has always attempted to some extent to protect the weak against the strong and the unscrupulous. Neither has any nation ever existed which has not practiced some measure of economic planning. In the history of the United States the Louisiana Purchase, the Homestead Laws, the land grants to the railways, the Interstate Commerce Act, the grain and cotton stabilization corporations, the Federal Reserve System of banking, and above all our protective tariff laws, are examples of economic planning that preceded 1933. Our methods of taxation, the antitrust laws, the regulation of public utilities, the encouragement of better agricultural practices through experimentation research, are all examples not only of social control but of economic planning.

The additional controls that have been introduced since 1933 are far from adding up to complete economic planning. No more than having had complete *laissez faire* previously do we now have complete planning. What we have here is a system of partial controls over certain types of economic activity, but not central, over-all control; nothing like Russia's, nothing indeed compared to the elaborate system of thoroughgoing economic management that existed in this country during the Second World War.

That such a system will ever be instituted in this country is unlikely. We shall probably have more partial controls and interventions of the type we are used to, so that the United States will be more of a social-service state than it is now. Even so we shall be far from having the degree of economic control here that there is already in England. The dominant feeling in this country is that a free-enterprise system will make for a higher degree of well-being than one largely planned.

Whether this will always be the case cannot be foretold. One of the main, if not the main, determinant of the people's attitude toward governmental control will be the state of business. If a severe depression supervenes, there will undoubtedly be strong demand for government intervention. Whether a depression of the nature of that of 1929 to 1932 reoccurs depends in part on whether the United States is or is not a maturing economy.

The Problem of a Maturing Economy. During the thirties a number of economists and sociologists expressed the belief that the failure of the United States to achieve full recovery was due to the fact that its economy was rapidly becoming mature. The marked decline of the birth rate, the filling-in of our geographical frontiers, and the fact that we have developed our basic industries had led, they felt, to a decline in the demand for capital. Several European countries have gone through this experience, but not one moved from youth to maturity in such a short period as from 1914 to 1930. Furthermore, no one of these countries had such a high per capita income or such a capacity to save. Finally, these countries found an outlet for much of their new savings in foreign investments, which at the time did not appear open to the United States.

The Second World War changed all this. Our birth rate is up, capital is needed to provide facilities to make up for war-caused shortages, and we have plenty of outlets for capital abroad, though not for investment in the traditional sense.

When, however, the war shortages are finally replenished here and abroad, the problems of economic maturity may be with us again. In that case we may be faced with the problem of lack of investment opportunities in relation to the amount of saving, in other words, by the situation analyzed by Keynes. If such occurs, government action will be demanded and taken.

Summary. The government program of economic regulation since 1933 has had two major objects. One was to make sure that the economic contest was carried on honestly and according to rule, that one side should not have an unfair advantage over the other in the economic arena. To bring this about the Securities and Exchange Act, the Public Utility Holding Company Act, the Robinson-Patman Act, and the Food, Drug, and Cosmetic Act were passed; the Antitrust Division of the Department of Justice and the Federal Trade Commission were reactivated; the Temporary National Economic Commission was constituted. The Wagner Act was intended to give labor bargaining equality with employers; when some felt it gave labor undue advantage it was modified by the Taft-Hartley Law.

More important was the quest for security which found expression in the temporary measures for relief and recovery from the depression and the more permanent legislation like the Social Security and Triple-A acts, intended to provide workers and farmers with assurance that they would receive at least minimum incomes regardless of the turn of economic events. Economic security has also been sought by conserving and developing natural resources, not only through the farm program but through the TVA and similar projects. As a corollary the government has influenced the distribution of income, partly by the progressive in-

come tax and partly by putting a floor under incomes through the measures just mentioned. The guarantee of income afforded by the security measures has also contributed to evening up the bargaining position of the various economic groups, which we noted as part of the first object of government policy. A worker who can draw unemployment insurance is not altogether at the mercy of an employer, and a farmer who can sell his crops to the Commodity Credit Corporation has a potent defense against a broker who in the past may have tried to take advantage of the farmer's need for cash.

We have previously said that the chances favor a larger measure of government intervention in economic affairs. The two most important policies adopted in 1948 tend to bring about a state of affairs lending credence to this view. One is the Marshall plan, under which large quantities of essential materials are to be exported. This may make necessary, especially if the program continues into the 1950's, the allocation of certain commodities for export.³ Even more important, because in dollar terms it is larger, is the rearmament program, which when it gets in full swing may not only take steel and other materials from the civilian economy, thus perhaps necessitating government controls, but will have the effect of making a much larger segment of our economy than was the case before the war directly dependent on government orders and policy. In effect, the economic area of state control will be widened, that of free enterprise, the virtues and shortcomings of which we shall discuss in the next chapter, will be narrowed.

Some indeed fear that if the "cold" war intensifies, the necessity of maintaining an adequate defense may require the United States to become a "garrison" state, with economic activity in general under state control, as was the case during the Second World War. Economic controls would be required in such a state, devoting a large part of its production to military purposes, for the same reasons as they are required in time of war. It has generally been supposed that an extension of control over economic activity, if it were to come about, would have an economic motivation, presumably the hope of enlarging or stabilizing the national income. It is possible, however, that over-all economic control may grow out of the politico-military situation.

Questions and Problems

1. What conditions explain the passage of the New Deal legislation?
2. What steps were believed necessary to recovery under the Roosevelt administration?
3. How successful were the efforts at recovery?
4. What evidence is there that our economy is maturing? Of what significance is economic maturity to the study of the operations of that economy?

³ This was rendered unlikely by developments in 1949.

5. What was the major principle involved in the New Deal's monetary and credit program?
6. Compare or contrast the objectives of the Robinson-Patman Act with that of the Miller-Tydings Act.
7. Was the New Deal labor legislation aimed to prevent unfair and unjust hours and wages or to influence the level of specific wages?
8. What is the importance for economics of the Atomic Energy Act?
9. What were the major objects of the New Deal legislation?
10. In your view, will there be more or less government regulation of economic activity in the future in this country?

Suggested Readings

1. Dale Yoder and G. R. Davies, *Depression and Recovery* (1934), is a comprehensive statement of the conditions leading to the New Deal and its purposes and characteristics.
2. Douglass V. Brown, and others, *The Economics of the Recovery Program* (1934), is a series of essays appraising various aspects of the program.
3. Leverett S. Lyon, and associates, *The National Recovery Administration* (1935), is a comprehensive review of the organization, activities, and results of the NRA.
4. W. L. Thorpe, *et al.*, *Economic Problems in a Changing World* (1939), contains a discussion of economic and business problems which is friendly to the reform movement of 1933 to 1939.
5. Some discussion of the question of the maturing of our economy is contained in A. H. Hansen, "Progress and Declining Population," *American Economic Review*, March, 1939, pp. 1-15; and Oscar Lange, "Is the American Economy Contracting," *ibid.*, September, 1939, pp. 503-513.
6. Harry D. Gideonse, "Foreign Trade and New Deal Policies," *American Economic Review*, March, 1940, includes a presentation of numerous inconsistencies in New Deal policy.
7. R. V. Gilbert, *et al.*, *An Economic Program for American Democracy* (1938), is a sympathetic statement of the aims of the New Deal program with suggestions for expanding it.
8. B. Mitchell, *Depression Decade* (1947), is a critical history of the New Deal period.
9. S. L. Slichter, *The American Economy, Its Problems and Its Prospects* (1948), interprets the major changes of the preceding fifteen years, particularly in relation to the problem of economic stability.

CHAPTER 30

CAPITALISM AND ITS CRITICS

Nothing human is perfect, capitalism no more than any other product of human minds and hands. We shall in this chapter consider some of the criticisms commonly made of the operations of the capitalist, free-enterprise system, and also discuss certain suggested alternatives which, presumably, being human products, would likewise fall short of perfection should they be put into effect.

• CRITICISM OF CAPITALISM

The more significant criticisms can be grouped under the following heads:

1. Capitalism leads to unfair distribution of income and wealth.
2. It makes possible the exploitation of some men by others.
3. Under capitalism the majority of men are insecure because of the possibility they may lose their jobs, farms, or businesses.
4. Capitalism is inherently unstable, being subject to recurring depressions during which practically everyone suffers and resources are wasted.
5. Not only is there the waste of resources during depressions, but capitalism in general is wasteful and inefficient.
6. Capitalism breeds wars.

The Distribution of Wealth and Income. Not only critics but even some thoughtful defenders of capitalism believe that income and wealth are improperly distributed. Improper distribution or maldistribution¹ means more than unequal distribution, for the latter literally means that individuals receive differing amounts of income or possess differing amounts of wealth. Maldistribution refers to such great inequalities in wealth and income distribution as to be socially unjustifiable, or as to portend economic ill, or both. The distribution in the United States is held to be a cause of business depression by many economists who believe that concentration of income and wealth in too few hands makes for an excess of savings over investment with the consequent repercussions on business activity.

In 1935-1936, there were 38,410,000 families and single individuals receiving income in the United States. At that time, the one-fifth with

¹ The reference here is to the distribution of income among individuals and families, not to the division of the social income among the factors of production. These two types of income distribution may be quite different because of the fact that an individual may receive income from two or more productive agencies.

TABLE 61. SHARES OF INCOME: UNITED STATES

Families and single individuals grouped from lowest to highest income	Percentage of total civilian money income		
	1935-1936	1941	1946
Lowest fifth.....	4.0	3.4	4.4
Second fifth.....	8.7	8.7	10.6
Third fifth.....	13.6	15.3	16.0
Fourth fifth.....	20.5	22.0	22.1
Highest fifth.....	53.2	50.6	46.9

SOURCE: President's Economic Report, January, 1948, p. 105.

the highest incomes received 53.2 per cent of the total, the fifth with the lowest, 4.0 per cent. On the average, income receivers in the highest bracket had thirteen times as large an income as those in the lowest. It is worth noting that during the period of postwar prosperity there was a notable lessening of the inequality. By 1946, the highest fifth of 43,-330,000 income receivers received 46.9 per cent of total income, and the average income in that bracket was ten times the average in the lowest. In actual dollars the 1946 average income figures were \$8,921 for the highest fifth and \$835 for the lowest.

The existence of the trend toward greater equality in income is also illustrated by Table 62. Though the figures for the different years are

TABLE 62. PERCENTAGE DISTRIBUTION OF URBAN FAMILIES BY INCOME

Annual income group	1935-1936	1941	1946
Under \$500.....	10.7	3.8	2.8
\$500-\$1,000.....	23.7	11.6	4.4
\$1,000-\$1,500.....	23.6	13.9	6.6
\$1,500-\$2,000.....	16.2	17.9	8.8
\$2,000-\$3,000.....	15.6	31.2	24.1
\$3,000-\$5,000.....	6.8	15.8	33.7
\$5,000 and over.....	3.4	5.8	19.5

SOURCES: For 1935-1936, *Family Expenditures in the U.S.*, National Resources Planning Board, 1941, Table 87; for 1941, Bureau of Labor Statistics, *Monthly Labor Review*, February, 1947; for 1946, Bureau of the Census, *Current Population Reports*, Series P-60, No. 1, Table 1.

not strictly comparable, since they come from different sources and were collected by somewhat different methods, the trend is clear. Even allowing for the fact that prices for consumers' goods and services were about

one-third higher in 1946 than they had been in 1935-1936, the fact that in the latter year more than 50 per cent of all urban families had incomes of above \$3,000 as compared to a little over 10 per cent in 1935-1936 shows that there had been a very material leveling upward of income in the United States. Despite this equalization, there was still a high degree of inequality, as shown by the fact that only 2.5 per cent of the urban² families in 1946 had annual incomes of over \$10,000 and a few had incomes running into the millions.

That this tendency toward a more nearly equal pattern of income distribution would be maintained in the event of a prolonged depression is unlikely. After the exhaustion of their unemployment benefits the great mass of the unemployed would fall into the very low brackets, causing an increase in the percentages at the lower end of the scale.

It is certain that the distribution of wealth is much more unequal than that of income, as such a large portion of our population earns all or nearly all of its income by personal service.

While there is no question that differences in income and wealth are largely due to differences in ability, and partly to luck, a major cause of differentiation is inheritance. Not only is wealth inherited directly, though that is most important, but so are the benefits of coming from an "upper-class" family, which usually comprise social position, advantageous connections, an environment favorable to education, and sufficient support from parents to complete that education. In a democracy it is hard to justify the fact that A has an income of a hundred thousand dollars annually because his father left him several millions of dollars' worth of stocks and bonds, while B has to spend his life at a low-paying menial job because his family was so poor he never could go to high school or college to obtain the education that would have fitted him for something better. It is also true, however, that probably in no country in the world is there greater opportunity for overcoming the handicaps of being born poor and without advantages than in the United States.

Exploitation. In Chap. 15 we reviewed the reasons why the bargaining position of workers is much weaker than that of employers, affording the latter opportunities to exploit the former. Nor are workers the only economic class subject to exploitation because of their inferior bargaining position. A large body of unorganized farmers, for instance, facing a single processor or a tightly organized group of processors is liable to exploitation in the sense that they will not get full value for their pro-

² It should be noted that these figures refer to *urban* families, not all families. The income of urban families, which in 1935-1936 numbered 16,943,083 out of a total of 29,400,257, is higher than that of all families. The urban figure was used because roughly comparable figures for this class were readily available for the three years shown, and undoubtedly they are representative of the trend for all families.

duce. Likewise consumers, forced to buy some essential article from a monopoly, will almost certainly have to overpay.

The growth of unions and the labor and farm legislation of the last fifteen years has gone a good distance to put farmers and workers in a position to resist exploitation. While efforts have been made to protect consumers against monopoly, these have been less successful, though it should not be forgotten that competition is active enough in most economic areas to put fairly close limits on the exploitation of consumers..

Insecurity. It is perhaps valid to say that capitalism is responsible for two distinguishable kinds of insecurity, one personal or individual, the other general. The first arises from the fact that an employee may be discharged at the whim of an employer, a small manufacturer may be bankrupted at the whim of a purchasing agent of a large corporation, the small—or sometimes even the large—retailer or maker of specialty goods like women's dresses may be wiped out by the whim of fashion.

Unions have mitigated to a large extent insecurity due to arbitrariness of employers, though in this connection it must be remembered that only about one-third of nonagricultural wage and salary workers belong to unions. That very whim of fashion that may break one specialty manufacturer may make another.

On the whole, however, insecurity is a characteristic of our system, though it is probably more of the second (general) type, which arises from the fear of a widespread depression. After all, in good times if a man loses his job, he has a chance of finding another. When a depression strikes, there are no alternatives, and the fear of depressions under capitalism is, unfortunately, an emotion justified by history.

Economic Maladjustments. More serious than any listed so far is the charge that capitalism is inherently subject to recurrent depressions. Inherent or not, certainly the history of capitalism up to now has been marked by periodic crises, the most severe of which was that of 1929 to 1932, when not only were 15 million workers unemployed, but corporations as a whole lost money, farmers lost their land, and home owners lost their houses.

Among the most serious of depression losses are those of what could have been produced by the men and machines that are idle in such times. It has been estimated that had there been full employment in the decade from 1930 to 1940, 400 billion dollars' worth more of goods and services would have been produced than actually were, enough to replace completely all the man-made articles in the United States at the beginning of the period. Loss of potential output during depressions is not the only waste with which capitalism has been charged, as may be seen from the paragraphs below.

Economic Waste. Stuart Chase identifies four kinds of waste under

free enterprise: "The production of nonessentials, idleness, bad technical methods, and losses in natural resources."⁸

The production of nonessentials includes both the production of those things which are positively harmful and those things which, though not harmful, do not give an adequate value to the purchaser. The typical patent medicine is an often-quoted example of the former kind of waste in consumption, though adulterated foods, dangerous buildings, habit-forming drugs, and similar items are included in the list. Of those items in which the consumer does not receive full value for money paid, Chase lists articles varying from prepared breakfast foods to automobiles. He holds that the former has too high a price for its caloric content, and that the latter, the automobile, could be made to serve much longer with but little additional production cost.

Idleness refers to the unused capacity of factories and to unemployment. Unused capacity may be due to seasonal factors but according to most critics refers to the misdirection of capital—the excessive investment in certain kinds of buildings, equipment, or other improvements. The chief reference is to the failure of the price system to apportion perfectly the factors of production among the various industries as consumers desire the products of these industries. Although a considerable portion of these maladjustments arise either from shifts in consumer demand or from changes in the technique of production—maladjustments which would tend to exist in any but a retrogressing society—the critics of capitalism are inclined to lay all such misalignments at the door of the present system.

The waste in the form of idleness which goes with a business depression has just been discussed. However, it is by no means certain that there would not be similar shutdowns in production under a socialistic or some other system.

The waste due to bad technical methods refers to the use of out-of-date machinery, processes, and organization. A particular point of criticism is the distribution of goods, particularly retail merchandising. Nearly all advertising is viewed as waste. Altogether, the criticism is that the opportunity for the free exercise of the individual initiative has not brought efficiency, has not always led to the use of the best method and has not eliminated the inefficient and superfluous enterprises.

The waste of natural resources under free enterprise has long been recognized, and the prevention of such waste, either by strict government control or by permitting monopoly among those exploiting these resources, accompanied perhaps by special taxes, has long been advocated by many who believe that free enterprise in other fields of industry is

⁸ *Tragedy of Waste* (Macmillan, 1925), p. 27.

desirable. The wasteful methods of cutting timber, mining coal, and drilling for oil have been widely publicized. Clearly no one enterprise, say in the oil industry, can undertake to eliminate these wastes, if by wasting resources or investment more money can be made. Unity of action is required. Tardily some social action has been taken, but clearly it has not gone far enough.

Imperialism and War. Marxian critics of capitalism, notably Lenin, as well as non-Marxians like the well-known English economist, J. A. Hobson, have claimed that under capitalism wars are inevitable because, as the opportunities for profits dwindle in a maturing economy, capitalists look for possibilities for exploiting the inhabitants of undeveloped areas. Since, according to this view, the governments of their respective countries exist but to serve the capitalists, the governments proceed to assist those desiring to make profitable investments abroad by taking possession of such undefended areas as they can. For this reason, the English, French, and other European nations acquired their colonial empires in the eighteenth and nineteenth centuries. As the empires of the mature countries expand, the time comes when they begin to reach for the same territory, and if they cannot come to an amicable division they go to war. Thus are explained the diplomatic clashes between the British and French in the nineteenth century and between the French and the Germans in the early years of the twentieth century, the Russo-Japanese War of 1904, and, finally, the First World War.

It will be remembered that among the things Hitler claimed he was going to war about were the colonies in Africa that had been taken away from Germany after the First World War and that the Nazis intended to exploit the resources of the Ukraine for their own advantage in the same fashion as, critics of capitalism assert, the European countries exploited their African and Asiatic colonies.

The desire of mature countries to exploit new territory may well be one of the causes of war, but it can be said there were wars long before capitalism emerged as a recognizable form of economic organization in the fifteenth and sixteenth centuries. These wars were in part due to dynastic, religious, and, most important, nationalistic causes as well as economic, and these things have certainly had something to do with the wars of modern times as well. And there are clashes between socialist or communist countries—as between Russia and Yugoslavia.

Wrong Motives. Capitalism is accused of being based on, and fostering, undesirable motives, chiefly that of self-interest. The whole price system, the freedom of enterprise and competition, is based on self-interest. Critics assert that not only is unsocial conduct the necessary consequence of this motive but also that it emphasizes the baser qualities

of human beings. Self-striving and competition are ugly. Cooperation and altruism are higher ideals. Capitalism rewards material, not cultural, advancement. Capitalism seeks to build cheaply, not for beauty. Self-interest leads to the destruction of beauty when money can be made thereby.

MERITS OF CAPITALISM

Freedom of Initiative. The capitalistic system provides for relatively few restraints on the individual in his economic activities. He may own productive instruments; he may put them to work in almost any industry he sees fit; he may change methods of producing or of conducting business transactions; he may buy and sell largely as he pleases and at such prices as he thinks proper. Though the law places few restrictions on the individual, it is true that he is subject to the pressure of public opinion, that he sometimes finds it desirable to join such voluntary associations for cooperative action as are allowed by law, and, above all, that he is subject to economic pressure. The individual is not so free economically as he is legally. The type of business in which a man wishes to engage, because of his preparation for, or particular interest in, that work, may already be overcrowded.

This large degree of individual freedom has brought two beneficial consequences. First, it has paved the way for rapid and marked progress in the technique of production, a point which will be considered more completely in a moment. The second consequence is psychological, the "psychic income" derived from absence of legal restraint. Although such income is not measurable in dollars, that does not matter, for the purpose of all economic activity is the satisfaction of wants. And if people's environment under capitalism—namely, absence of restraint—is productive of large psychic values, that is to the distinct credit of the system. Although the degree to which the rank and file of Americans have actually had the privilege of any large degree of real freedom is debated, there is a strong feeling among the populace, and among many students of the social sciences, that capitalism does yield a large total of mental pleasure arising from absence of minute legal restraints.

The individual enjoys a *high degree* of absence of restraint, both as a producer and as a consumer. The law lists only a few occupations as forbidden, though at times legal support is given to limiting the opportunities for investment, as in the public-utility field, or for employment, as in government service, or sometimes in professions, as that of the practice of medicine. On the whole, men are legally free to enter that kind of work which they anticipate will give them the greatest money income, or pleasure in the work, or other intangible returns. And in

most cases, insofar as there are restrictions on choice of occupation, they are self-imposed by those in the occupation, or they are restrictions arising from the economic necessity of getting a job at whatever work is available.

As a consumer, the individual choice of goods to consume is restrained by law supposedly only in cases in which the consumption of the desired product is considered socially injurious, as in the case of harmful drugs. Under socialism the state may control what kinds of goods people may consume and how much of different kinds. Certainly a large range of legal freedom in consumption is essential to happiness, whether under capitalism or socialism.

Efficiency under Capitalism. The standard of living of the countries of Western civilization has made great advances under the capitalistic regime. The law permits the individual to exercise his initiative and to profit therefrom. This fact has stimulated the development and production of revolutionary improvements in all phases of economic activity. One can hardly picture the possibility of the English Industrial Revolution occurring under thoroughly enforced mercantilism. In this country the opportunity to establish a fortune by hard work, thrift, and ingenuity encouraged the development of our resources and, more significantly, the development of laborsaving devices, so that man's power was made manifold.

The application of science to production has been concerned not only with the methods of production but with the products themselves. Though consumers' fundamental wants are today similar to those of their ancestors, the goods which are offered as the means of satisfying wants have changed. The changes in consumer goods have not been initiated by consumers, nor even by scientists, but by profit seekers, who have studied the consumers' fancies and the scientists' advances and have encouraged and financed the bringing out of new goods, varying from chewing gum to electric refrigerators. The consumer is essentially passive; the leadership has come from the unrestrained, profit-seeking entrepreneur.

Even some of the most severe critics of capitalism have recognized its merits as a system under which technical progress has been made rapidly. Using bourgeoisie as referring to the owning and managerial groups, and asserting that capitalism is dominated by this class, Karl Marx, the founder of modern socialism, said in 1848:

The bourgeoisie during its rule of scarce one hundred years, has created more massive and more colossal productive forces than have all preceding generations together. Subjection of nature's forces to man, machinery, application of chemistry to industry and agriculture, steam navigation, railways, electric telegraphs,

clearing of whole continents for cultivation, canalization of rivers, whole populations conjured out of the ground—what earlier century had ever a presentiment that such productive forces slumbered in the lap of social labor?⁴

It may indeed be the very rapid rate of material progress under capitalism that leads to depressions. When new products are introduced, a favorable opportunity is opened to investment and prosperity results. In consequence of a desire to cash in on the innovation, there may be overinvestment and excess capacity, causing a stoppage of further investment, and therefore a depression, till a new opportunity is opened up. Such a “bunching” of private capital formation has followed each of the world wars, and for a time investment may outrun “saving” and may thereby create a major imbalance in the economy.

We have perhaps made sufficient material progress so that many people would be willing to settle for a slower rate in the future if they could thereby be assured of more stability in the operations of our economic system and, consequently, more security. It is, however, very much an open and unanswered question if the attainment of the greater stability and security might not require a contraction of present liberty of political and economic action. If that should be the case, security would have been obtained at too high a price.

Consumer Direction. Under capitalism the entrepreneurs are not the final governors of what shall be produced; this role is occupied largely by the consumers. The entrepreneur may prepare goods, he may even undertake to persuade the consumer of their want-satisfying qualities, but the final decision to purchase or not rests with the consumer. It is readily acknowledged that the consumer is influenced by custom, by style, and by advertising, but still the decision rests with consumers. The latter think they have freedom of choice, which of itself is of some significance; and, in reality, consumers do have a large degree of choice. It tends to be the exception rather than the rule that advertising or salesmanship can for an extended period convince consumers of the want-satisfying power of goods which are devoid of utility.

Furthermore, consumers *tend* to obtain these goods, under competition, at a price covering the costs to the majority of the producers. At times prices are higher or lower than this point, and under monopoly they may be considerably above it. If the government supplies services, prices charged may vary from sufficiently above cost to yield a large revenue to the public treasury to much below cost, in which case the deficit must be made up, however, by revenues obtained from some other source. But competition *tends* to give people what they want at prices covering the necessary costs of putting those goods on the market.

⁴ “Communist Manifesto,” 1848.

Summary. The discussion thus far has been confined to the merits and weaknesses of capitalism. The critics maintain that the system does not conduce to a full life, to the enjoyment of a relatively high plane of living by the masses, to the psychic pleasures of security, or to the non-material aspects of a full life, such as an artistic and cultural environment or interest on the part of the people. Instead, they insist, much *illth* (as opposed to *wealth*) is produced and consumed and worse, wars are bred. The defenders, on the other hand, point to the material advance that is possible under capitalism and that actually has been made. They point to the relative flexibility of the system in adopting new methods or producing new articles, a characteristic arising from the fact that decisions in such matters are not up to one board or one person, but that some bold person may test those new things as actual methods of production, or as actual goods to be offered to consumers. Wars, they claim, antedate capitalism by several millenniums, and, in any case, are not exclusive to it. Psychic, as well as material, advantages are claimed for freedom of initiative in production and freedom of consumption. But thus far we have not considered the positive merits—or the defects—of alternative systems. Preparatory to this appraisal we shall consider the chief features of these proposed substitutes for present-day capitalism.

PROPOSED ALTERNATIVES

We shall consider the following proposed alternatives to present-day capitalism in the United States, classified according to the degree of social control involved:

1. Greater *laissez faire*.
2. More thoroughgoing social regulation of economic activity, involving a degree of economic planning. These first two are modifications of capitalism as we know it now, though it is held by some that economic planning and free enterprise are incompatible.
3. Socialism.
4. Communism.

Greater Laissez Faire. The many elements in our economy which prevent quick adjustment to changing conditions—the presence of monopoly, the power of unions, the very wide range of government influence and control—have been discussed earlier in this book. In order to overcome the difficulties arising within a system which is part rigid and part flexible, some persons have proposed the restoration of a greater degree of freedom of enterprise and of competition than, in reality, we have had for several decades or perhaps ever had. This is a logical suggestion in the sense that the increased rigidity has brought many difficulties; but it ignores the difficulty of restoring flexibility. Though governmental

regulation of public utilities is recognized as necessary by practically everyone, we recognize also that prices under government regulation tend to become rigid. In previously unregulated fields, the large corporation with its degree of automatic monopoly influence has resulted in most cases from the demands of production technique. Producers in industries with heavy fixed investments and few competitors will, legally or otherwise, engage in cooperative activities in their common interest. Though here and there some monopoly can and should be destroyed, the restoration of completely free competition is both impossible and undesirable.

Further Governmental Regulation. The probabilities are that the future will see further moves in the direction of social control of economic activities. Many defenders of capitalism see opportunities for the improvement of the system by the application of additional social control. Controls may be designed either to prevent the evils of capitalism from occurring, at least in part, or to remedy the consequences. As preventives, the government could undertake to forbid many of those practices whereby one person gets ahead of another, to prohibit the marked economic advantage of inherited wealth, to further develop people's native abilities through a more complete system of public education, and to give medical aid. Public utilities and other monopolies could be more intelligently regulated. As partial cures for the ill effects of capitalism, heavily progressive inheritance and income taxes will bring about greater equality in wealth and income.

Planned Prevention of Depression. The most important line, however, along which further social intervention is advocated is for active and aggressive government action to prevent business depressions. As was indicated in Chap. 28, there is a wide difference of view as to what should be done; some argue for credit control, others for a compensatory budget, that is, balancing the government's budget over a period of several years with the idea of running deficits in bad years to stimulate business. Associated with this proposal are the ones for confining the construction of public works to times of poor business and for a flexible tax system, with high taxes in good years and low taxes in poor years, which would have the effect, it is claimed, of smoothing upswings and downswings of the cycle. More thoroughgoing are the proposals that the government make up for any failure of private business to provide employment by means of a sufficiently large program of doles, work relief, or public works. Some of the advocates of this policy believe that in order to provide employment for everybody the government should, if necessary, enter fields customarily reserved for private enterprise. Yet others go so far as to argue that the importance of investment in

bringing about business cycles is so great that the government should regulate the rate of investment by private business.

All these proposals involve, it will be seen, a greater or lesser degree of planning. If credit is to be controlled through manipulation of interest rates and reserve requirements, someone must decide on the direction and magnitude of the changes. Likewise if a policy of concentrating public construction so as to head off recessions is adopted, the question of timing becomes crucial. The construction program should not be commenced so early as to accentuate an inflation or too late to halt a depression. All this obviously involves a considerable amount of planning in advance. Much more elaborate planning would be required if drastic measures were instituted to prevent depressions, such as putting important industries under government control or having the government regulate private investment.

Some believe that carrying government planning so far would mean the end of free enterprise. On the other hand, during the war government controls and plans were both extensive and elaborate, yet businessmen retained considerable liberty of action. It may well be argued that the wartime example is not especially relevant for normal conditions, since regulation was accepted then when in peacetime it would not be. It was known that the wartime rules were temporary, and more important, that they were in effect part of the machinery necessary for winning the war. Then, too, complex and difficult to administer as they actually were, wartime controls were simpler than peacetime ones could be because the objective of wartime economic activity was comparatively simple—the production of munitions, food, and essential replacements. In time of peace there is no one economic objective but a manifold diversity of objectives, which would intensify and complicate the problem of control.

More apposite, therefore, is the present farm program, which involves over-all planning and inducements to, and in some cases penalties on, farmers to effect compliance with the government's plans. Nevertheless, most farmers in this country would be very much surprised to learn they were not free enterprisers.

In considering the problem of government control it may be helpful to bear in mind the difference between "general" and "specific" controls. An example of the former would be the regulation of credit through changes in bank-reserve requirements and the central bank rediscount rate. An example of the latter would be the planned production of a particular crop, going down to the individual grower. Clearly, it is easier to promulgate a general rule, raising bank-reserve requirements from 26 to 28 per cent, than to decide how much wheat should be grown

on each of a million farms, though that has been done in this country through the AAA county committees.

To administer a multiplicity of specific controls would unquestionably necessitate a large and cumbersome bureaucracy. The war experience demonstrated the confusions, contradictions, and delays attendant upon the administration of a system of specific controls.

Socialism and Communism. Socialism and communism are contrasts to capitalism primarily in that they provide for the collective, as opposed to private, ownership of the instruments of production. Though there is a fairly general agreement concerning this ultimate objective among those advocating collective ownership, there is a disagreement as to the program for the immediate future, as to the proper methods whereby the new system is to be brought about, and as to the exact form of the collective ownership. The immediate program of some socialists provides for nothing more than the extension of government regulation and here and there of government ownership, as of utilities and banks. Other socialists propose the immediate establishment of collective ownership of all production goods, to be brought about by political, as opposed to violent, means. Marx and Lenin used the terms *socialist* and *communist interchangeably*. Where a distinction is drawn between socialists and communists, as is done in the political parties in Europe, the difference tends to lie in that the communists demand the immediate establishment of the collective state, and that by violent means if necessary. Therefore the communists have come to hate and ridicule the more conservative socialists as weak-hearted apologists for capitalism. Another meaning of communism, as opposed to socialism, is that the former calls for an equal division of income, all things in common, whereas the latter asks for less complete equality of treatment.

The term *state socialism* has been used to refer to the progress of social legislation carried out in Germany under Bismarck. Hence this term should not be applied to socialism proper. But state socialism when the words are used nowadays generally refers to state ownership of all means of production.

Both modern socialism and communism stem from the writings of Karl Marx, which, indeed, have influenced the thinking and actions of a great many who were not socialists or communists. We shall very briefly note the major features of his philosophy.

The Marxian Philosophy. The Marxian socialists have prided themselves on being "scientific," to have studied economic history, and to have found that economic organization continuously evolves as methods of production change and that capitalism is doomed by this evolutionary process (that is, evolutionary until socialism arrives). They maintain that history is governed by economic determinism—that is, by economic

factors—and that the prevailing situation is a perpetual class struggle between the “Haves” and the “Have nots.” This struggle started between master and slave, continued between lord and serf, and in capitalism is a struggle between employer and wage earner. The rich are becoming fewer and richer, the poor more numerous and more poverty-stricken. As the working masses—the proletariat—come to see that they have no opportunity to become capitalists, they will develop a class consciousness, a willingness to sacrifice for the cause of labor. Thus the class struggle becomes more bitter, hampering the capitalist. The greed of the capitalists aggravates the major structural flaw in capitalism—the recurring business depressions. These, Marx prophesied, would become more and more severe until capitalism became so weak that the proletariat could easily overthrow it. Marx’s explanation of the inevitability of these depressions under capitalism was a special variation of the oversaving business-cycle theory, based on the labor theory of value.

The labor theory of value, which holds that labor creates all values, is the central theme of the Marxian critique of capitalism and forms the basis of the new socialistic state. Marx and others have developed the *surplus-value* theory. This theory holds that, though labor produces all value, it is paid only a share, the remainder going to the “exploiters,” the capitalists. The latter, by saving a very considerable portion of their income, bring about periodic shortages of purchasing power in the markets for consumers’ goods. Because of the increasing concentration of wealth, Marxians expect these depressions to become worse and thus prepare for the downfall of capitalism.

Marx’s doctrines, in spite of giving the impression of being logical, have numerous flaws, a fact acknowledged by many of his most thoughtful followers. Historical events are influenced by a variety of forces, although the economic ones probably are dominant. But certainly the class struggle as outlined by Marx is not the only major contest within society, for religious struggles and national rivalries, among other struggles, have been and are major. The labor theory of value is inaccurate, for even if we assume that all costs are labor costs, the theory fails to recognize that value arises from human wants—the utility aspect of the value problem.

In the system forecast by Marx, the workers were to rule, but Russia is governed not by its workers, but apparently by a small dictatorial group dominated by one man.

Fascism. Although the fascist countries were crushed in the war, and no country except Spain now professes to be fascist, that system caused so much trouble in the world that it is of sufficient historical importance to be at least mentioned.

Italy became fascist with the suspension of representative government in 1923, and Germany in 1933, followed by a number of Central and Eastern European countries under German and Italian pressure. With considerable justification the regime that plunged Japan into a war against the United States was also called fascist. Fascism provided for the subordination of property and personal rights to the state, which in turn is simply a dictatorship. It was decidedly nationalistic and militant in foreign policy. In the economic realm, it meant progressively greater control of private business operations designed to strengthen the nation militarily. Thus it had some features of the older mercantilism. Economic affairs passed into the hands of the government, until hardly the shell of private enterprise was left.

Though in its early stages fascism often had the support of conservative interests which feared communism, wealth-sharing, and similar schemes, the industrialists soon found that their independence of action was gone and that, like everybody else, they were completely under the domination of the state.

EVALUATION OF PROPOSALS

Increased Government Regulation and Economic Planning. In this section the proposals to be evaluated will all be understood to rest on the assumption that the fundamental features of our present system—such as private ownership of means of production, the making and retention of profits, a very wide range of freedom of economic opportunity, and freedom in the conduct of business—will not be basically altered.

Unquestionably, projected systems of social control can be formulated which sound very beguiling, promising to maintain business activity at a high level, to increase national income, to equalize the distribution of wealth, and yet to retain the freedom of enterprise. But to control so vast and complex a system as the economy of the United States is, on the face of it, very difficult and plans that look fine on paper might not work out in practice. Our wartime experience vividly demonstrated the difficulty of administering a broad system of regulation, even under relatively favorable conditions.

The first objection, then, to a program of economic regulation is purely practical. No matter how soundly conceived theoretically, it may be very difficult to operate because of the size and complexity of the bureaucratic machine that would be required. Action might be very slow in such a case because of the number of agencies that would have to be brought into agreement and because of the diffusion of responsibility.

In addition to this practical question, there are many others on both the theory and the principle of economic planning. One of the first that comes to mind concerns the wisdom of the planners and regulators. Can any board be wise enough to know when depressions are due and to

plan just the right expenditure on public works or just the right expansion of private investment to overcome it? We have had somewhat disastrous examples of mistakes in economic planning heretofore, as in 1937 when the budget was balanced and credit contracted prematurely, or more recently in 1945 to 1946 when government policy was designed to withstand a depression that never put in an appearance.

In reply it can be asserted that the free-enterprise system, as it were, makes mistakes and that during the war a high degree of control of the country's economy worked, albeit haltingly and with much waste.

Another and perhaps more serious question might be phrased "How far control?" It is notorious that each time regulation is applied to a certain aspect of business, old-established relations are disrupted and additional control becomes necessary in places in which it was not originally intended to exercise control. Regulation of railroad rates led by successive steps to regulation of railroad accounts, service, construction of new lines, and capital issues.

During the war it was thought at first that price control could be selective, applying to key commodities only, but it was soon found necessary to make price regulation general. Likewise, it was thought that controlling prices at one stage, say at wholesale, would be sufficient to keep the other prices of a commodity at the desired level. This was not successful and control was extended, as in the case of farm products, to the farm and retail prices.

Thus, once the country is embarked on a course of economic controls, there may be no stopping short of such a degree of completeness of regulation as to destroy the freedom of enterprise and to lose the benefits flowing from it. This is a possibility that cannot be dismissed lightly. It may well be, however, that controls need not be pushed to the degree of completeness suggested above in order to overcome, partially at least, the problem of recurrent depressions.

But whether in the final analysis a balance can be struck between the controlled and free areas of the economy, so that depressions are mitigated or prevented and yet free enterprise preserved, is a question that is very difficult to answer. Perhaps all that can be said on this subject is that human institutions have shown themselves to be very adaptable and that therefore in the future a method may be worked out to reconcile a high degree of economic control with a high degree of liberty of individual economic action.

One way by which a solution of this dilemma might conceivably be possible would be to make use of the difference between "general" and "specific" controls explained on page 697. General controls would leave a wider range for freedom of individual action than specific regulations. General controls, incidentally, have another advantage, already noted. Being comparatively easy to administer they would tend to minimize

the operational difficulties pointed out at the beginning of this section.

Regardless, however, of the degree or type of economic controls adopted, assuming such controls are adopted, in no country should the danger of loss of freedom be less than in the United States, with its history of respect for individual liberty and where any controls put into effect would presumably have been authorized by a democratically elected Congress.

This brings us to another question. There is no guarantee that any of the various schemes mentioned in this chapter or in Chap. 28 would prevent the recurrence of depressions. Therefore the dangers growing out of an elaborate system of control may be risked for nothing.

To this the answer may be that government spending and investment programs have been successful in increasing income and employment, admittedly at the risk of alienating business confidence and ultimate inflation. But if no action were to be taken unless there were prior assurance that it would involve no danger, then no one would ever do anything, for there is hardly any human activity without risk except possibly lying quietly in bed, and lightning has been known to strike people in that position.

Opponents of increasing government control assert that the attainment of economic stability, which is presumably the object, would bar changes in demand, improvements in technique, and the introduction of new kinds of goods. This is by no means proved, and even if it were, most people, as has been suggested, would probably be willing to trade a greater degree of security for a slower rate of progress, assuming what has also by no means been proved, that a stable and secure society is one which is also free.

Somewhat related is an objection to social control in general. This is that in the absence of a free price system there is no criterion available—except the judgment of the controllers, which may be wrong—by which to decide what to produce and therefore how to allocate productive resources. In consequence, undesired commodities may be turned out and the resources devoted to their production wasted, while desired objects may go unmade. If standardization and reduction of the number of products is proposed as an answer, then the consequence is a great narrowing of the consumers' freedom of choice, which is one of the great benefits of our economy, and the dictator-like imposition of uniformity.

This danger is real and important. But it is quite conceivable that ways might be worked out so that the production of what people want could be planned. Past experience might be a guide and indeed various ingenious though possibly impractical methods have been proposed whereby the operations of the price system in reference to consumers' choices and the apportionment of resources can be approximated under planning.

Socialism. Many of the questions and objections to a greater degree of planning and social control of a basically capitalist system, like the possibility that economic progress may be slowed or stopped, the restriction of the consumers' freedom of choice, the difficulties with the proper allocation of resources, apply with even greater force to an outright socialist system. Even more important is the question of whether socialism can provide a greater degree of well-being than can capitalism. The most important experiment in gradualist socialism, that of the United Kingdom, has not gone far enough to furnish a basis for our answer. For one thing, a great if not a major part of the English economy is still free, whatever may be the Labor government's ultimate intentions. For another thing, while England is obviously suffering severe economic difficulties, these cannot necessarily be cited as arguments against socialism, as they may be due to its loss of foreign investments and other resources during the war. If English socialism, however, fails to overcome these difficulties, then that will be quite unequivocally unfavorable evidence.

English socialism has not proceeded far enough to come face to face with the central politico-economic question of our time, to which we have so often adverted, "Is a high degree of control over economic activity compatible with a high degree of civil and political liberty as well as freedom and width of economic opportunity?"

The communist answer to this question is well known and the great majority of Americans reject the dictatorship form of government, the denial of political liberty, the strict regulation of movement, opinion, and communication that accompany communist control of economic activity. That socialist England will travel the same road seems most unlikely, but it is conceivable that even the English may not be able to maintain traditional Anglo-Saxon liberties and a democratic political system in the face of the thoroughgoing control of economic activity resulting from the adoption of socialism.

The United States and the Future. It is at least possible to envisage an economic structure sufficiently and wisely controlled so that depressions can be prevented—and thereby the danger of wars and dictatorships minimized, if not ended altogether—yet allowing wide enough latitude of action so that the benefits of free enterprise are retained. This may be asking for the best of all possible worlds and therefore impossible. It is nevertheless an ideal worth working for.

Everywhere in the world the trend is for greater social control of economic activity. Behind this trend are powerful forces, both economic and noneconomic, and there seems little likelihood that it will be reversed. Certainly an acceleration of that trend would give rise to stupendous and staggering problems in adapting our thinking, our attitudes, and our institutions. Clearly before us, however, is the task of making

the controls we have work better. In the improvement of present controls or the devising of new ones, the test of any proposal should be, "How far can we go in controlling economic activity and yet retain the liberty which is our heritage?"

Questions and Problems

1. What are the major features of capitalism? Compare or contrast its features with those of other existing or proposed systems.
2. What are the criticisms of capitalism, and what is your opinion of their validity?
3. Give the salient facts concerning the personal distribution of wealth and income in the United States. What factors explain this wealth and income distribution, in part at least?
4. What "psychic income" is said to be received by those living under a considerable degree of *laissez faire*? How does this argument fit with your observation?
5. What are the other benefits of a free-enterprise system?
6. Compare or contrast a planned economy with socialism and communism.
7. Distinguish "specific" and "general" controls.
8. What are the principal objections to superimposing economic controls on a free-enterprise system?
9. Which of these do you consider the strongest? Which the weakest?
10. What is the labor theory of value? Criticize that theory.
11. To what extent has the operation of a farm with which you are familiar been affected by direct government economic controls?
12. Do you think that controls can be devised which will allow us to retain our traditional freedom of economic opportunity?
13. Are security and freedom compatible?

Suggested Readings

1. Lionel Robbins, *The Economic Problem in Peace and War* (1947), is a discussion of the difficulties of planning, contrasting the conditions under peace and war.
2. F. von Hayek, *The Road to Serfdom* (1944), is an attack on economic planning and controls.
3. Barbara Wootton, *Freedom under Planning* (1945), is a reply to Hayek's book, which argues persuasively that democratic freedom and economic control may coexist.
4. Barbara Wootton, *Plan or No Plan* (1935), is a criticism of capitalism.
5. Among the leading books on socialism written by prominent contemporary economists are L. Von Mises, *Socialism* (tr. by J. Kahan, 1937), A. C. Pigou, *Socialism vs. Capitalism* (1937), and J. S. Schumpeter, *Capitalism, Socialism and Democracy* (1942).
6. H. S. Parkes, *Marxism, an Autopsy* (1939), is a critical analysis of the Marxian doctrine.
7. J. M. Clark, *Alternatives to Serfdom* (1948), is a discriminating analysis.
8. M. Dobb, *Soviet Economic Development Since 1917* (1948) is a book favorable to Russia.
9. G. Bienstock, S. M. Schwarz, and A. Yugow, *Management of Soviet Industry and Agriculture* (1944), is a critical study.
10. John Fischer, *Why They Behave Like Russians* (1947), is a book by a recent visitor.
11. Carl Snyder, *Capital the Creator* (1940), is an exposition of the possibilities inherent in capitalism.

INDEX

A

- AAA, (*see* Agricultural Adjustment Administration)
- Abstinence theory of interest (*see* Interest)
- Accounting, 131-134
farm, 134-135
- Acquisitive capital (*see* Capital)
- Adams, A. B., 635
- Adams Act of 1906, 57
- Advertising and demand changes, 203-204, 253
- Agricultural Act of 1948, 623, 624, 627, 628
- Agricultural Adjustment Administration, 619
Act of 1933, 274, 592, 617-619
program, 643
- Agricultural credit, 555-580
agencies, 559-577
for cooperatives, 571-572
(*See also* Credit)
- Agricultural Credits Act of 1923, 569, 614
- Agricultural discontent, 55
- Agricultural economics, definition of, 10-11
- Agricultural ladder, 409
- Agricultural Marketing Act of 1929, 274, 614-616
- Agricultural marketing agreements Act, 273
- Agricultural outlook charts, 443
- Agricultural price analysis, 214
- Agricultural Situation, The*, 579
- Agricultural Statistics*, 56, 501, 540, 549, 603
- Agriculture, allocation of resources in, 613-614
division of labor and, 81-82
enclosure movement and, 39
exports and, 444-446
feudalism and, 31-32
foreign market and, 61-62
importance of, 20-21
imports and, 445-446
- Agriculture, improvements in, 57-58
Industrial Revolution and, 37-42
overpopulation in, 613, 631
price declines and, 325, 327
rent and, 391-392
research in, 47-58
in South, 46-47
tariff and, 480, 486
taxation and, 480-486
two worlds in, 605-606, 631
urban market and, 60-61
westward movement and, 51-52
- Agriculture Finance Review*, 495
- Air transportation, 528
- Allied Chemical Company, 278
- Allocation of resources, under controls, 702
- Allotments, monopoly in, 276
- Aluminum Company of America, 246
- American Economic Review, The*, 350ⁿ, 373
- American Federation of Labor, 63, 64, 352
- American Iron and Steel Institute, 260
- American Society of Equity, 54, 270
- American Telephone Company, 246, 434
- American Tobacco Company, 270
- Anderson, C. P., Secretary of Agriculture, quoted, 627
- Antitrust division, 264
- Appraisals, FCA, 567-568
- Aristotle, 29
- Arkwright, 36
- Atomic Energy Act, 679
- Autarchy, 42
- Automobile Manufacturers Association, 527ⁿ
- Average returns, 113, 114
- Ayres, Leonard P., 648

B

- Balance Sheet, 85-86, 131-133
- Balance Sheet of Agriculture*, 560, 561
- Balance of trade, 454-464
favorable, 454, 456, 457
multilateral, 449

- Balanced farming, 158
 Bankhead Bill, 622
 Bankhead-Jones Act of 1935, 57, 619
 Banking Act of 1933, 674
 Banking Act of 1935, 305, 674, 703
 Banks, commercial, 292-301
 Federal Reserve System and, 302-308
 operations of, 295-299
 recent developments in, 307-308
 statements of, 297-298
 types of, 292-294
 (See also Agricultural credit agencies)
 Banks for cooperatives, 564, 571-573
 Barnes, H. E., quoted, 34
Basic Facts in Employment and Production, 108
 Basing-point prices (see Prices)
 Bean, L. H., quoted, 459
 Beef cycle, 236
 Berle, A. A., 130
 quoted, 669-670
 Bessemer process, 37
 Beveridge, Sir W. H., cited, 654n
 Bimetallic standard, 287
 Bituminous Coal Act, 677
 Bjorka, N., cited, 526
 Black Death, 34
 Black, J. D., *et al.*, 97, 154, 409, 483, 586
 quoted, 110, 587
 Blakewell, Robert, 38
 Blum, F. H., 350
 Bond rates, 380, 382
 Bonds, 129
 Bonneville Power Authority, 529, 677
 Borden Company, 277
 Borrowing, by governments, 508, 510
 Boycott, 63, 354
 Brannan, C., Secretary of Agriculture, 628n
Brewster's Millions, 370
 British loan, 461
 Brookings Institution, 280
 Buck, J. L., 149
 Budgets, farm, 168
 sample, 168-172
 "Buffer" stocks, 628
 Bureau of Agricultural Economics, 184,
 185, 209, 235, 236, 323, 359, 380, 442,
 495, 537-539, 541, 559, 582, 584, 617,
 618
 Bureau of the Census, 20, 60, 157, 404,
 687
 Bureau of Labor Statistics, 318, 359
 (See also Consumer Price Index)
 Burley tobacco, 268-271
 Burns, Arthur, cited, 247
 Business cycles, 635-663
 causes of, 655-657
 control of, 657-663
 nature of, 635-643
 Butter, cost of marketing, 537
 marketing channels for, 552
 Buyers, marginal, 199-200, 217
- ### C
- Caesar, Julius, quoted, 29
 Cairnes, J. M., 342
 California Fruit Growers Exchange, 273
 California Pro-Rate Act of 1933, 274
 Caloric intake, 96
 Canals, 48, 52
 Cannan, Edwin, quoted, 653
 Capacity, 153-155
 Capital, bank credit and, 377
 as capitalized income, 365
 consumers', 366
 in corporation accounting, 364
 as credit, 365
 definition of, 78
 fluid, 363, 364
 intangible, 366
 in interest theory, 366
 land and, 364, 365
 money and, 363-364
 nature of, 362-366
 producers', 366
 shifting demand for, 374-375
 sources of, 127-130
 sunk, 229
 Capital value, 365
 Capitalism, alternatives for, 695-700
 characteristics of, 22-23
 criticism of, 686-692
 evaluation of proposed changes in, 700-
 704
 merits of, 692-695
 Capper-Volstead Act, 131, 274, 548,
 614
 Cartels, 261
 Celery marketing costs, 537
 Cement case, 260
 Central banks, 145
 Central Valley Project, 145, 593, 594

- Chamber of Commerce, 544
 Chamberlin, Prof. E. H., 280
 Chase, Stuart, 689
 quoted, 690
 Chicago Board of Trade, 427, 478
 Chinese Exclusion Law of 1882, 339
 Chinese farm economy, 149
 Clark, J. M., 651-652
 Class price (*see* Prices)
 Classical economists, 9
 Clawson, M., quoted, 587
 Clayton Act of 1914, 247, 263
 Cleveland Trust Company *Bulletin*, 633-634
 Closed shop, 354
 Clower, F. N., quoted, 373
 Cochran, W. W., cited, 208
 "Cold" war, 441
 and economic controls, 684
 Collective bargaining, 63-64, 352-356
 by farmers, 271-273
 Columbia Basin Project, 594
 Commodity Credit Corporation, 275, 481, 572, 575, 577, 623, 624, 627
 Commodity Exchange Administration, 428
 Commodity exchanges, 427-431
 margin trading on, 430
 trading on, 428
 Common lands, 39
 Communism, 698-699
 Comparative advantage, 82-93
 causes of, 89-92
 fallacies contradicted by, 86-87
 foreign trade and, 92-93, 485, 486
 illustrations of, 83-87
 law of, 88
 principles of, in the United States, 82-83
 Comparative costs (*see* Comparative advantage)
 Compensatory budget, 696
 Compensatory payments, 628
 Competition, interindustry, 265
 imperfect, 249
 Conference on land utilization, 592
 Congress of Industrial Organizations, 63-64, 352
 Consumers' capital (*see* Capital)
Consumer Expenditures in the United States, cited, 205-207
 Consumer Price Index of Bureau of Labor Statistics, 312, 322
 Consumption, 7
 and investment, 654, 655
 Contracting, 431-432
 Controls, "general" and "specific," 697, 698, 701-702
 Coombs, Whitney, 500
 Cooperative marketing, 548-551
 credit facilities for, 571-573
 price control through, 268-276
 Cooperative Research and Service Division, FCA, 572
 Cooperatives, 131
 Copyholders, 65
 Corn Laws, 41
 Cornell University Extension Service, 579
 Costs, average, 121
 constant, 233
 decreasing, 231-232
 diminishing returns and, 231
 direct, 225
 fixed, 121, 225, 228, 518-519
 joint, 234, 518-519
 nature of, 138-139
 opportunity, 225, 399-402
 price and, 229-230
 of production, 224
 real and money, 224
 rent and, 399-402
 sunk, 228-229
 variable, 121, 225, 518-519
 Cotters, 31
 Council of Economic Advisors, 678-679
 Credit, agricultural, 555-580
 and business cycles, 650-651
 control of, 304-307, 329, 658, 659
 defined, 294
 expansion of, 299
 Credit policy, 145, 146
 Crompton, 36
 Crop insurance, 422-423
Current Population Reports, 20
- D
- Davenport, H. J., quoted, 27, 115-116
 Day, Clive, quoted, 36
De Agricultura, 29
 Debt, cause of, 490-493, 557-558
 extent of, 556-557
 farm, 558-561
 Deere, John, 55

- Deficit financing, 660**
 criticism of, 661-663
Demand, for capital, 374-375
 changes in, 202-204, 209, 226
 curve of, 194, 219
 derived, 212
 effective, 180
 elastic and inelastic, 200-202
 factors influencing, 194-196
 for food, 208
 income elasticity of, 204-208
 joint, 210-212
 market price and, 193-196
 statistical analysis of, 216
Department of Commerce, 334-335
 (See also Bureau of Census)
Depression of the 1930's, 633-635, 665-668
Derived value (see Value)
Devaluation, 461-462
 of pound sterling, 462*n*
Diminishing returns, law of, 115, 231
 point of, 112-113
Discounting, 295, 303-304
Disposable income, 208, 608
 spent for food, 608, 609
Distribution, definition of, 6
 functional, 332, 334-335
Distributive shares, 136
Diversified farm (see Farm enterprise)
Diversion programs, 225
Domar, Evsey, cited, 510
Domestic system, 34-35
Douglas, Paul H., 337
Droughts, 581, 593, 594
Ducoff, L. J., cited, 359, 605
Dumping, 261, 267
duPont de Nemours Company, 278
- E**
- Eccles, M., 658**
Economic Cooperation Act, 681
Economic development, principal stages, 27-28
Economic life, aspects of, 5-7
 complexity of, 67-68
 of early civilizations, 29-30
 of manor, 30-32
 primitive, 28-29
 of town economy, 33-34
 (See also Capitalism; Communism; Mercantilism; Socialism)
Economic planning, 663, 681-682, 683, 684
- Economic problems, complexity of, 23, 24**
Economic rent (see Rent)
Economic Trends Affecting Agriculture,
 quoted, 459*n*
Economic value, 176
Economics, basic problems in, 3
 boundaries of, 4
 definition of, 3
 development of, 7-10
 and public policy, 4-5
 as a social science, 3
 welfare, happiness, and, 4, 5, 24-25
Economics, external, 232-233
 internal, 232-233
 of mass production, 233
Effective demand, 180
Efficiency, 154-155
Elastic demand (see Demand)
Emergency Crop and Seed Loan, Division of FCA, 573
Employment Act of 1946, 678-679
Engel, Ernst (Engel's law), 204
Engineers, Brotherhood of, 517
Enterprises (see Farm enterprises)
Entrepreneur, 79
 definition of, 78
Equalization fee (see Farm relief)
Equilibrium, attainment of, 230, 231
 in a dynamic society, 223
 in an industry, 221, 222
Equilibrium price, 198, 199, 222, 223
 position, 220-223
Esch-Cummins Act of 1920, 515, 516
Europe, contributions of, 42-43
 today, 42
Excess Profits Tax, 495
Exchange, control of, 454
 domestic and foreign, compared, 446-447
 fluctuations in, 458
 foreign, under gold standard, 453
 gold movements and, 453-454
 paper standard and, 452
 rates of, 455
Exchange value, 176
 limits of variation in, 452-453
Export debenture (see Farm relief)
Export-Import Bank, 673
Export subsidies, 275, 622
Exports, agricultural, 61-63, 445-446
 paying for, 447
 total, 444
Extension of land, 398

F

- Factors of production, 78-79
 fixed, 111
 grades of, 151-156
 variable, 111
- Fair Labor Standards Act (*see* Wage and Hours Act)
- Fair return on fair value, 517-518
- Farm Act of 1949, 624*n*
- Farm Bankruptcy Act, 677
- Farm budgeting, 168
- Farm Credit Act of 1933, 564, 571-572
- Farm Credit Administration, 146, 461, 563-564, 566-568, 570-573
- Farm economy, Chinese, 149-150
- Farm enterprises, complementary, 163
 coordination of, 161
 diversified, 163-165
 government regulations and, 166-167
 price changes and, 165-166
 supplementary, 163
- Farm income, 601-607
 accounting, 134-135
 budgeting, 172
 compared with non-farm, 603-607
 expenditures and, 617
 in relationship to urban income, 607
 variation in, by states, 605
 wages and, 610
- Farm loan associations, 565, 566
- Farm mortgage debts (*see* Debt)
- Farm prices, changes in, 16-17
- Farm and real-estate values, 405-408
- Farm relief, allotment idea for, 616-617
 basic issues in, 613-614
 before 1933, 614-615
 equalization fee, 614-615
 export debenture, 614-615
 proposals, 626-630
- Farm taxation (*see* Taxation)
- Farm Security Administration, 573, 574
- Farm tenancy, 408-409
- Farms, size of, 156-161
- Farmer's share of consumer's dollar, variations of, in prosperity and depression, 211, 212
- Farmers' Alliance, 54
- Farmers' Bulletin*, 168, 170, 171
- Farmers, as debtors, 327-328
 (*See also* Debt)
- Farmers Home Administration (FHA), 573-575, 577
- Farmers' Union, 55
- Fascism, 699-700
- "Featherbedding," 354
- Federal Communications Commission, 141, 144
- Federal Deposit Insurance Corporation, 293
- Federal Fair Labor Standards Act (*see* Wage and Hours Act)
- Federal Farm Board, 275, 576, 615, 616, 627, 628
- Federal Farm Loan Acts, 564, 569
- Federal Farm Loan Board, 564
- Federal Farm Mortgage Corporation, 568, 569
- Federal Home Loan Bank, 307
- Federal Housing Administration, 307, 673
- Federal Intermediate Credit Banks, 563
- Federal Interstate Commerce Act, 515
- Federal Land Banks, 559-560, 563, 564-569
- Federal Reserve Act of 1913, 674
- Federal Reserve Board, 302, 308, 658
 credit-control problem in 1948, 680
- Federal Reserve System, 145, 299, 302-308
 and business cycle, 643
- Federal Savings and Loan Associations, 307
- Federal Trade Commission, 260, 263-264, 280
 quoted, 540
- Fee simple, 65
- Feudalism, 30-32
- Fiscal policy, 143, 317
- Fisher, Irving, 315, 650
 quoted, 365, 651
- Fixed costs (*see* Costs)
- Flugel, Felix, quoted, 34
- Food Administration, 605
- Food and Agriculture Organization, 483
- Food, consumption changes in United States, 209-210
- Food Stamp Plan, 622, 629
- Ford Motor Company, 60, 265
- Fordney-McCumber Act of 1922, 478
- Foreign Trade, after Second World War, 438-441
 future of, 483-485
 importance of, 441

Form utility, 75

Forward prices, 628

"Fourth section relief," 516

Free coinage, 471-475

(See also Tariffs)

Fruit, marketing costs of, 587-588

Fuel Administration, 665

Fulton, Robert, 36

Funded Debt, 130

G

Gains, from liquidation, 83

Galbraith, J. K., cited, 258

Garcia-Mata, 647

General Motors Corporation, 12, 246

General price level, 282, 310

effect of variations on, 321-327

measurement of, 310-312

movements of, 319-320

stabilization of, 328-330, 658

General Property Tax (see Tax)

Gentlemen's Agreement with Japan,
339

and monopoly, 244

George, Henry, 384

Gilbert, M., quoted, 11

Goals set by U.S. Department of Agriculture, 166

Gold-buying program, 643

Gold standard, 287-288

and foreign exchange, 453

Gold sterilization, 321

Goldenweiser, E. A., 602

Goods, consumption of, 74

production of, 74

Government control during Second World War, 678

Government, place in the economy, 141-418

Government policy, nonmonetary basis of, 146, 147

Grange, 614

Gras, N. S. B., quoted, 64, 65

Gratuitous coinage, 287

Gray, L. C., quoted, 155-156, 587

Great Atlantic and Pacific Tea Co., 547,
547n

Greece, early empire of, 29-30

Greenback Party, 55

Guilds, 33-35

H

Hagood, M. J., cited, 359, 605

Haney, L. H., quoted, 245

Hanseatic League, 33

Hansen, Alvin, 337, 660

Hardy, C. O., 649

Hargreaves, 36

Harris, S. E., 655

Harrod, R. T., 652

Hatch Act of 1887, 57

Hawley-Smoot Act of 1930, 478

Hay prices, Ohio and Nebraska, 185

Hayes, H. G., 660

Hedging, 427-432

Hepburn Act of 1906, 515

Hibbard, B., quoted, 55-56, 269-271

Highest profit combination, 122-123

(See also Proportion of factors, law of)

Highway transportation, 525-528

Hobson, John A., 651-691

Hoffman, A. C., cited, 248, 277, 278, 547

Hog cycle, 234-236

Holding company, 246, 529

Holmes, C. L., quoted, 152

Home Owners Loan Corporation, 307, 670

Homestead Law, 51-52, 157-158

Hoosac Mills case, 619, 620

Hope-Flanagan Act, 57, 552, 623

Hopson, A., 529

Housing Bill of 1949, 630n

Howe, C. B., cited, 180

Huebner, S. S., quoted, 416

Huntington, Ellsworth, 647

Hyde, Arthur, quoted, 591

I

Immigration, 339-342

policy, 339-340

restriction law of 1921, 333-340

Immigration Commission, 602

Income, definition of, 73

disposable, 208

distribution of United States, 686-687

of farmers, 601-607

functional distribution of, 334-335

national (see National Income)

and occupations, 18-20

for off-farm work, 604, 605

standard of living and, 95

urban, 687

- Income statement (or profit and loss statement), 133-134
- Income tax, 494
 corporate, 500
 paid by farmers, 495
- Index numbers, 311-312
- Individual proprietorship, 126
- Industrial Revolution, 36-37
 agriculture and, 40-41, 55-57
 manufacturing and, 58-61
- Inflation, control of, 330
- Innovation, 433
- Insurance, crop, 422-423
 Farmers' Mutual Fire, 421-422
 fire, 420-421
 life, 415-420
 livestock, 423
 Old-age and Survivors', 426-427
 principles of, 414-415
 property, 420-423
 unemployment, 424-426
 workmen's compensation, 423-424
 (*See also* Hedging)
- Intangible capital (*see* Capital)
- Integration, 81
- Intensive margin, 123
- Interest, commercial, 366
 definition of, 366
 explicit, 366
 gross, 666-667
 imputed, 366
 pure, 666-667
 saving and, 373-374
 theories of, 366-376
 abstinence, 368
 exploitation, 368-369
 liquidity-preference, 371
 marginal-productivity, 371
 productivity, 368
 time-preference, 369-371
- Interest rates, 374-382
 long-term, 378-379
 money, bank credit, and, 376-378
 short-term, 378-379
 trend of, 380
- Intermediate credit (*see* Credit)
- International Bank for Reconstruction and Development, 462-464, 681
- International Ladies Garment Workers Union, 352
- International Monetary Fund, 451, 462-463, 681
- International payments, 446-451
- International receipts, 450-451
- International Trade Organization, 441, 479-481, 681
- Interstate Commerce Act, 665
- Interstate Commerce Commission, 144, 515-524, 528
- Intramarginal traders, 200
- Iron law of wages, 334
- J
- Jaszi, G., quoted, 11
- Jefferson, Thomas, 55
- Jevons, W. Stanley, 647
- Joint Committee on the Economic Report, 444, 542, 678
- Joint costs (*see* Costs)
- Joint demand (*see* Demand)
- Joint-stock land banks, 569
- Jones-Connally Cattle Act of 1934, 619
- Jones-Costigan Sugar Act of 1934, 619
- Junkers, 40
- K
- Kaiser-Frazer Corporation, 247
- Kerr-Smith Tobacco Act of 1934, 619
- Keynes, J. M., 9, 317, 376, 683
 on business cycles, 654-656, 660
 on tariffs, 476
- King, W. I., 334
- Knight, M. M., quoted, 34
- Knights of Labor, 63
- Kuznets, Simon, 645
- L
- Labor, choice of occupation and, 344-345
 definition of, 78
 demand for, 345-347
 division of, 79-90, 81-82
 immigration and, 339-341
 natural increase of population and, 338-339
 New Deal and, 676
 supply of, 338-342
- Labor force, 20, 341-342
- Labor market, 351-352
- Labor organizations, 63-64, 352-354
 activities of, 354-355
 as bargaining agents, 355-356
 growth of, 63-64

- Laissez faire*, 40-42, 681-682, 695-696
 Land Bank Commissioner, 560-569
 Land, capital and, 364-365
 definition of, 78
 erosion of, 598-599
 Federal conservation and, 596-598
 ownership, stages of, 64-65
 problems of, 581-583
 programs for utilization of, 581-600
 private land in, 595-596
 returns from, and capital returns compared, 397-399
 submarginal, 586-590
 tax delinquency in, 594-595
 uses of, 583-586
 value and income from, compared to that of capital, 402-403
 zoning of, 596
 (See also Public domain; Reclamation)
 Land O' Lakes Creameries, Inc., 204
 Least-cost combination, 118-120
 Legal tender, 286
 Lend-lease, 440, 461
 Lenin, 691, 698
 Lester, R. A., 350
 Letter of credit, 447-448
 Liebig, 38
 Limited liability, 127
 Lippincott, Isaac, quoted, 44-45
 Liquidity preference, 371
 Localization of production, 82, 83
 Long- and short-haul clause, 520
 Lycurgus, 29
- M
- Machlup, F., 350
 Malthus, Thomas R., 97, 338
 Malthusian theory of population, 97-100, 334
 Managed currency, 288
 Manning, 55
 Manor, 30-32
 Manufacturing, growth of, 60
 Marginal costs, 117, 120, 121
 Marginal productivity, 345-351
 expected, 376
 qualification of, 356
 theory of, 332-333
 Marginal returns, 113, 114
 Marginal revenue returns, 120
 Marginal utility (see Utility)
 Market, competitive, 187-188
 defined, 178-179
 history of, 60-63
 supply, 196-198
 width of, 182-188
 Market demand, 193-196
 extent of, 179-196
 Market monopoly, 188-189
 Market price (see Prices)
 Market value (see Value)
 Marketing, agencies, 536
 chain stores and, 547
 cooperative, 548-551
 definition of, 533
 improvement in, 551-553
 labor in, 532-533
 (See also Agricultural Adjustment Act; Cooperative marketing)
 Marketing Agreements Act, 274, 619
 Marketing costs, 537-548
 of apples, 540
 of bread, 537-538
 of butter, 537
 of fruit and vegetables, 537, 539
 of meat, 540
 of retailing, 543-548
 rigidity of, 539
 Marketing margins, 539-541
 Marketing services, 534-536
 Markham, Edwin, quoted, 25
 Marshall, Alfred, quoted, 24, 99, 179, 396
 Marshall Plan, 440, 458, 461, 483, 608, 684
 Marx, Karl, 368, 369, 651, 698-699
 quoted, 693-694
 McCormick, Cyrus, 55
 McNary-Haugen Bill, 614
 Means, Gardiner C., 130
 Medium of exchange, 284-285
 Mercantilism, 8, 35-36, 454
 Merchant credit, 562
 Merger, 246
 Métayage, 39-40
 Meyers, A. L., cited, 199-200
 Mill, John Stuart, 9, 75, 334
 Miller-Tydings Act, 264, 676
 Millet, 25
 Minimum-wage legislation, value of, 350-351
 Mitchell, Wesley C., 636, 644, 655
 quoted, 638

- Money, capital and, 363-364
 as a commodity, 313
 function of, 284
 gold supply and, 314
 interest and, 376-378
 as legal tender, 286
 nature of, 283-284
 quantity theory of, 315-317
 rates of, 380, 382
 standard, 287-289
 supply of, 313-314
 types of, 289-291
 value of, 314-315
- Monopolistic competition, 188, 249, 250
 effects of, 256-259
 equilibrium under, 253
 and prices, 252-253
- Monopoly, benefits of, 257-258
 buyers, 240, 277, 278
 defined, 239
 disadvantages of, 256-257
 by farmers, 267-269
 farmers, as victims of, 276-279
 fiscal, 241
 legal, 241-242
 methods of, 252-262
 natural, 242-243
 prices and (*see* Prices)
 private, 241
 public, 241
 rarity of true, 246-247
 regulation of, 262-265
 tobacco, 269
 trusts and, 245
 value of, 251-252
 (*See also* Value; Monopoly)
 vested interest and, 257
- Monopsony, 189-190, 240
Monthly Labor Review, 20, 341
 Moore, H. L., 647
 Morgenthau, Henry, quoted, 572
 Morrill Act of 1862, 57
 Morris Plan banks, 302
 Motor Carrier Act of 1935, 528
 Moulton, H. G., quoted, 5
 Multilateral balance of trade, 449
Munn v. Illinois, 243, 513
- N
- National Conference on Land Utilization,
 quoted, 587
- National Dairy Company, 277
 National debt
 burden of, 510
 increase of, 489-490
 proper size of, 662
 repayment of, 509, 510
 National income, 13-15, 73-74, 334-335
 and agriculture, 603-604
 by occupational groups, 18-19
 public expenditures and, 488-489
 National Industrial Conference Board, 72,
 661
 quoted, 71-72
 National Industrial Recovery Act, 64
 and antitrust legislation, 264
 and labor, 353, 671
 provisions of the law, 672-673
 National Labor Relations Board, 353, 676
 (*See also* Wagner Act)
 National Mediation Board, 516
 National product, 11-13
 NRA, 643, 671-675
 (*See also* New Deal; National Industrial
 Recovery Act)
 National Resources Planning Board, 207
 Nationalism versus internationalism, 681
Nebbia v. People of the State of New York,
 513
 Net worth, 132
 New Deal, 666-678
 amelioration by, 670
 philosophy of, 669-670
 recovery and, 670-674
 reform and, 671, 674-678
 trade and, 478-479
New State Ice Co. v. Liebmann, 513
 Nicholls, W. N., cited, 277
 Norman, T., cited, 616
 Northwest Ordinance of 1787, 65
 Nourse, E. G., quoted, 601
- O
- Occupational Groups, 343-344
 Occupations, changes in, 61, 62
 and income, 18-20
 Office of Price Administration (OPA), 678-
 679
 Officers of a corporation, 435
 Old-age insurance, 426-427
 Oligopoly, 188, 247, 248
 Oliver, H. M., Jr., 350

One-crop farming, 46-49
 Open-hearth process, 37
 Open-market committee, 305
 Operating profit (*see* Profit)
 Opportunity costs (*see* Costs)
 Osborn, Dr. Fairfield, 95
Our Plundered Planet, 95
 Outlook conferences, 166
 Output per farm worker, 58

P

- Par check collection system, 301
 Parity, 624
 definition of, 625-626
 purchasing power, 455
 Partnership, 126
 Pearson, F. A., 212, 338
 quoted, 109-110, 149-150
 Pegging (*see* Wages)
 Pennsylvania Railroad, 434, 523
 Physiocrats, 9, 40, 681
 Picketing, 63, 354-355
 Pigou, A. C., 649
 Pittsburgh plus, 260
 Place utility, 75
 Plato, 29
 Pool, 245
 Pope-Jones Act, 575
 Population, birth rate and, 101
 distribution of, 60
 farm, 58
 Malthusian theory of, 97-106
 trends in, 99-103
 Possession utility (*see* Utility)
 Potato prices, Idaho and Maine, 184
President's Economic Report, 677
 Price Index, 18
 Prices, basing point, 260
 and beef supply, 236
 class, 254
 of commodities bought by farmers, 17-18, 617
 control of, 678, 701
 and cost of production, 224
 definition of, 178
 equilibrium of, 219-223
 of farm products, 16, 325-327
 and fixed and variable costs, 225-228
 forecasting of, 165-166
 general level of, 282
 Prices, and hog supply, 234-236
 inflation in, 330
 lags in, 323-324
 leadership in, 260
 level of changes in, 15-16
 market, 198-199
 measurement of, 311, 312
 monopoly, 250-256
 movement of, since Second World War, 680
 parity, 624-625
 stability of, 258
 and value of money, 312
 Principles of political economy and taxation, 8-9
 "Proclaimed" crops, 575
 Producers' capital (*see* Capital)
 Production, control of, 139-140
 cost and price of, 224-227
 early and modern, compared, 76, 77
 factors of, 78-79
 increased efficiency of, 103-110
 maladjustments in, 652-653
 mass, 232, 264-265
 nature of, 74-76
 Production credit, associations for, 564, 572-573
 corporations for, 564, 572-573
 method of disbursement of, 573
 Productivity theory, 332-333
 Profit, and the corporation, 434-435
 and the entrepreneur, 79, 137-138, 434
 and the farmer, 435-436
 gross, 136
 and managing ability, 433-434
 margins of, of larger food companies, 542-543
 net, 136, 138
 operating, 136
 price, 137-138, 332
 record of, 436
 and risk, 432
 Profit and loss statement, 133-134
 Property, changes in rights of, 23, 66-67
 Proportion of factors, and farmers, 123-124
 law of, 115-116
 (*See also* Diminishing returns, law of)
 Public domain, 590-592
 Public expenditures, 488-493
 and income, 489
 increase of, 488-493

Public utility, 512-514
 capital invested in, 514-515
 regulation of, 529, 675
 Public Utility Holding Company Act, 529,
 674
 Public works, planning of, 696-697
 "Pump priming," 659-663
 Purchasing power parity, 555
 Purnell Act of 1925, 57

Q

Quantity theory of money, 315
 criticism of, 316
 Quit-rents, 65
 Quotas, import, 466
 Quota provisions, in AAA Act of 1938,
 599-600

R

Railroad tariffs, 520
 Railway Labor Act of 1926, 516
 Railway transportation, and agricultural
 traffic, 523-524
 and costs, 518-519
 growth of, 48-50
 rate making and, 519, 520
 regulation of, 515-518, 523
 revenues and expenses in, 520-524
 valuation of property in, 520-521
 Rationing, 678
 Reciprocal-trade agreements, 478-479
 Reclamation, 592-594
 Reclamation Act of 1902, 592
 Reconstruction Finance Corporation, 146,
 307, 568, 643, 667, 673
 Rent, agricultural improvements and, 391-
 392
 capitalization of, 394-395
 commercial, 385-386
 criticism of theory of, 396-402
 definition of, 385
 economic, 137, 385-388, 389-390
 as cost of production, 399-402
 extensive margin and, 389
 intensive margin and, 388-389
 mine and timber, 393-394
 quasi, 395-396
 Ricardian theory of, 395-396
 submarginal production and, 390
 urban site, 392, 393
 Resettlement Administration, 573, 574

Resource orientation, 82
 Retailing, costs of, and margins, 543-548
 Returns, increasing, 233
 Revenue Act of 1948, 494, 508
 rates under, 501
 Revenue, marginal, 220
 Ricardian Theory of gold movements, 453-
 454
 (See also Exchange)
 Ricardian theory of rents (see Rent)
 Ricardo, David, 8-9, 333-334, 384, quoted,
 385, 399
 Risk, transference of, 414
 types of, 412
 (See also Insurance; Hedging; Con-
 tracting)
 Robinson, Joan, cited, 352
 Robinson-Patman Act, 284, 547, 675
 Roll, E., quoted, 5
 Roman Empire, 29-30
 Roosevelt, Franklin D., 668, 674
 Roosevelt Administration, 146
 Rorty, M. C., 402-404
 Rural electrification, 56, 575
 Rural Electrification Administration, 56,
 530, 531, 575, 577, 673

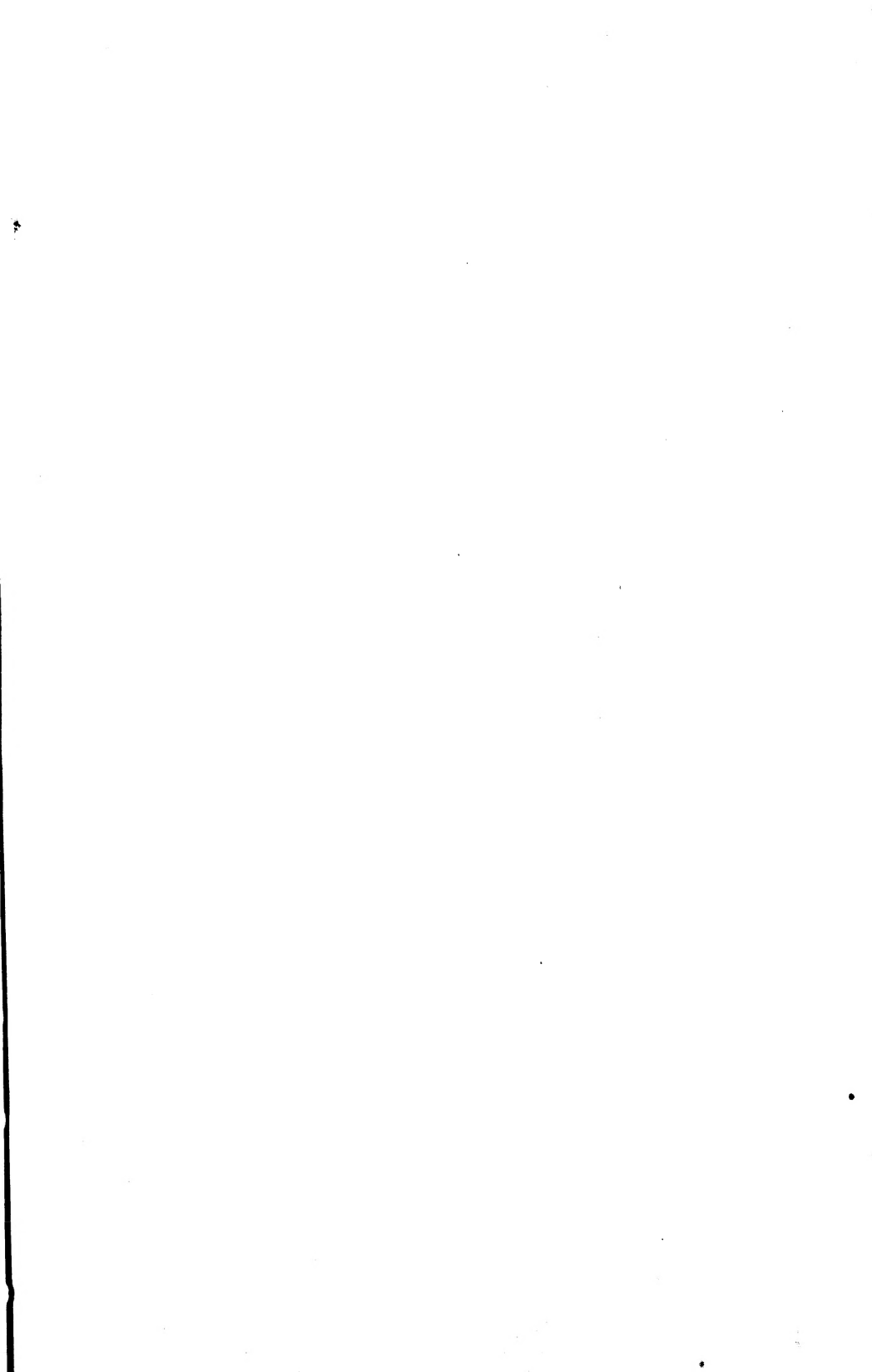
S

Sales Taxes, 496, 497, 507
 Samuelson, P. A., quoted, 654-655
 Sayre, C. R., quoted, 587
 School lunch plan, 622
 Schultz, Henry, cited, 201
 Schulz, T. W., cited, 614
 quoted, 627
 Second World War and United States
 economy, 683
 Section 32, amendment to AAA Act, 621-
 622
 Securities and Exchange Act of 1935, 529-
 536, 674-675
 Sellers, marginal, 199-200
 Senior, N. W., 368
 Shaffner, 647
 Shepherd, G. S., cited, 214
 Sherman Antitrust Act, 247, 262-265, 273,
 665
 Short term credit (see Credit)
 Silver Purchase Act of 1934, 289
 Single tax (see Henry George)
 Site rent (see Rent)

- Slater, Samuel, 58
 Slaves, 29-30, 47
 Slichter, S. H., cited, 107
 quoted, 239-240
 Smith, Adam, 7-9, 682
 quoted, 77-78, 244, 363, 384
 Smith-Lever Act of 1914, 57
Smyth v. Ames, 516
 Spillman, W. J., quoted, 602
 Social Security Act, 424
 Socialism, 22-23, 698
 in England, 703
 Soil conservation, 57
 practices for, 596, 598, 599
 program for, 596-598
 Soil Conservation and Domestic Allotment Act of 1936, 596, 619-620
 Soil Conservation Service, 58, 597
 Specialization in modern life, 1
 Standard Oil Company of New Jersey, 246
 Standards of living, 95, 96
 Static society, 223
Statistical Abstract of the United States, 445, 492, 556
Statistical Yearbook, 104
Statistics of Railways, quoted, 521, 524
 Steagall amendment, 575, 623, 624
 Stigler, G. J., 350
 Stockdyck, E. A., 614
 Stocks, kinds of, 128-129
 price of, 660
 Stokes, P. R., cited, 538
 Stokes, K. C., cited, 130
 Strikes, 63, 354
 Subjective value, 176
 Submarginal land, 587-589
 use of, 586-590
 Subsistence theory of wages, 333-334
 Sugar Act of 1937, 619
 Sugar Act of 1947, 481, 623
Summary of International Statistics, 101
 Sun-Maid Raisin Growers Association, 204
 Supply, curve of, 196-198
 charge of, 216
 elasticity of, 216
 market, 196-198
 under monopoly conditions, 250-252
 Surplus, definition of, 622
 disposal programs, 622
 "economic," 609
 Surplus Disposal Act of 1944, 623
 Surplus Property Act, 246
 Surplus-value theory, 699
Survey of Current Business, 18, 19, 381, 436, 542
 Swift & Co., 132-133
- T
- Taft-Hartley Act, 64, 143, 354, 679, 683
 Tariff Act of 1930, 483
 Tariff Acts of 1909 and 1922, 477
 Tariff Commission, 478
 Tariff Rates, 480
 Tariffs, agriculture and, 480-483
 balance of trade and, 459-460
 case for free trade, 471-475, 477
 case for protective, 468-471, 477
 import quotas and, 475
 on manufactured goods, 482
 points of view on, 467
 position of economists on, 475-476
 prohibitive, 466
 and width of market, 180-181
 Taxation, distribution of burden of, 497, 498
 farm, 501-505
 incidence of, 498, 502
 problems in, 507
 recent tendencies in, 507
 reforms in administration of, 504-506
 and submarginal land, 588-590
 system of Federal, state, and local, 494-495
 Taxes, definition of, 491
 delinquency, 594
 gasoline, 527
 general property, 498, 505
 income, 494, 500-501, 507-508
 trend of, 488-494
 Taylor Act of 1934, 591
 Temporary National Economic Committee, 248, 264, 675
 Final Report of the Executive Secretary, quoted, 244, 247
 Tenancy, 408-409
 Tennessee Valley Authority, 58, 144, 530, 677
 Thompson, W. S., 101
 quoted, 102
 Time utility, 75
 Tolley, H. R., quoted, 617-618

- Town and Country Planning Act, 600
 Townshend, Charles, 38
 Tractors on farms, 56
 Trade association, 245
 Traders, intramarginal, 200, 217
 Trainmen, Brotherhood of, 517
 Transfer payments, 142
 Transportation, agriculture and, 512, 513,
 523-524
 capital invested in, 514
 coordination of, 528-529
 employment in, 514
 (See also Railway, Water, Highway and
 Air)
 Transportation Act of 1920 (see Esch-
 Cummins Act)
 Transportation Act of 1940, 517
 Treasury, United States, influence of on
 business, 330
 influence of on quantity of money, 317
 Triffin, Robert, cited, 187
 Trucks, on farms, 50
 Truman, President, H. S., quoted, 624,
 630
 Trust, 245
 Trust agreement, 129
 Trust company, 293-294
 Twentieth Century Fund, 546
 Two-field system (also three-field system),
 31
 Tying contract, 261, 263
- U
- Unemployment insurance, 424-426
 Uniform tax clause, 496
 Unionism, craft, 352
 industrial, 352
 Union shop, 354
 Unit elasticity, 200
 United Automobile Workers, 352
 United Electrical Workers, 352
 United Mine Workers, 64, 679
 United Nations Economic Report, 74
 United Nations Relief and Rehabilitation
 Administration (UNRRA), 440, 461,
 680
 U.S. Census of Manufactures, 59
 U.S. Department of Agriculture, 57, 58
 and production, 167
 U.S. Shoe Machinery Company, 246, 247,
 261
- United States Steel Corporation, 246, 256
 United Steelworkers of America, 352
 Urban income and agricultural prosperity,
 607-609
 Utility, 75-76
- V
- Valgren, V. N., quoted, 423
 Value, derived, 212
 exchange, 176, 177
 fair, 517-518
 intrinsic, 268
 market, 178-217
 meaning in economics of, 176
 money as standard of, 285
 monopoly, 250-256
 and price, 177-178
 subjective, 176-177
 Veblen, Thorstein, 77
Vested Interests, The, 77
 Villein, 31
- W
- Wage and Hours Act, 356, 676
 Wage groups, 342, 343
 Wages, changing demand and, 349-350
 as cost of production, 338
 effect of unions on, 355-356
 and farm income, 601-607
 farm and urban, compared, 358-360
 as income, 336-337
 legislation and, 356
 and marginal productivity, 332-333,
 345-351
 real, 336-338
 rigidity of, 357-358
 theories of, 332-334
 trend of, 337-338
 types of, 335-338
 and wage fixing (pegging), 350-351
 (See also National Industrial Recovery
 Act)
 Wagner Act, 143, 353, 354, 676, 683
 (See also National Labor Relations
 Board)
 War Industries Board, 665
 War Labor Board, 678
 War Production Board, 678

- War Savings Bonds, 678
 Warren, G. F., 212, 338
 quoted, 109-110, 159
 Warren Potato Act of 1935, 619
 Water facilities program, 575, 594
 Water transportation, 524-525
 Watkins, Myron, quoted, 258
 Wealth, characteristics of, 71
 definition of, 71
 distribution of, 686, 687
 in the United States, 72-73
Wealth of Nations, 7
 Wehrwein, George S., quoted, 596
 Wells, C. F., 480
 Wells, H. G., quoted, 28
 West, E., 614
 Westward movement, land policy and,
 51-52
 motives for, 50, 51
 Westward movement, and regional read-
 justments, 52-53
 transportation and, 47-50
 Wheat Agreement of 1948, 485
 Whitney, Eli, 47
 Whittlesey, C. R., 455
 Wilcox, W. W., quoted, 587
 Wilson administration, laws passed during,
 665
 Wool Bill of 1947, 623
*World Economic Situation, Salient Features
 of the*, quoted, 74
World Food Situation, cited, 105
- Y
- Yearbook of Agriculture*, 595, 598, 608
 Yellow-dog contract, 353
 Young-Desmond Act, 273, 274



15
DATE OF ISSUE

This book must be returned within 3, 7, 14 days of its issue. A fine of ONE ANNA per day will be charged if the book is overdue.

25 AG '58

1 Se '58

6 AG '60

~~10/1/58~~

~~10/1/58~~

Class No. 330.063

Book No. ~~1000~~

Vol.

Author Dummeir

Title Economics with Applications

to Agriculture Acc. No. 38262

25 Ag '98 1229

4 Se '98 1109

6 Ag '00 1313

~~5/899~~

5/899