THE ANALYSIS
OF
FINANCIAL STATEMENTS

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BY

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Preface to Third Edition

THE structure of the third edition is the same as that of the previous one. Extensive changes have been made, however, to bring illustrative material up-to-date, to include changes in accounting practice and law occurring in recent years, and to introduce references to fresh studies and literature.

Professor Harry L. Kunze has compiled a set of problems based upon his teaching of the subject at the University of Wisconsin to meet the numerous requests for this teaching aid.

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Preface to Revised Edition

SINCE the appearance of the first edition of this book, the literature on statement analysis has been greatly enriched; the average quality of published reports has measurably improved, and there is promise of more and better information. The disillusionment following the crash of 1929 bodes ill for corporation managers who are willing to use other people's money but feel superior to making any adequate accounting of their trusteeship. But the mere availability of information means little unless the ability to interpret is also present; so it appears that an appreciation of the meaning of the accountant's product will be increasingly important.

In preparing this revision, I am indebted for numerous suggestions to those who have used the first edition as a textbook in various universities and have taken the trouble to lighten the burdens of authorship. Professor Thomas A. Budd, of the Wharton School of Finance and Commerce, University of Pennsylvania, has read the revised material and given valuable aid. My colleagues on the staff of the School of Commerce have also given generously of their time to read the manuscript, and have made many helpful comments.

Preface to First Edition

THE majority of business men are more interested in being able to read a financial statement than in having the skill to construct one. Yet the literature on analyzing and interpreting statements consists chiefly of scattered articles and pamphlets, while accounting has a well-developed complement of texts and material. So the businessman and the business student both are usually invited to study bookkeeping and accounting to appreciate the use of statements. As a result, many learn considerable about construction but little about interpretation.

It is the purpose of this book to lay emphasis on how statements are to be read. The needs of the banker, the credit man, the investor, and the business executive are to be served rather than those of the accountant. The accountant, however, will also be interested in a knowledge of what is required in analysis, since it is from such knowledge that he gains the viewpoint of his clients toward his product—the financial statement.

The book has been divided into two parts.

The first part is devoted to the general principles of the work of analysis. While this material, consisting of terminology and the more general principles, will probably seem less interesting than the latter part of the book with its illustrations and applications, it provides a very necessary background for all intelligent interpretation.

The second part of the book treats of particular types of statements under three divisions: public utilities, industrials, and moneyed corporations. No attempt has been made to include all classes of statements, but those selected are among the most important and are sufficient to illustrate the method of attack.

It is hoped that the student will use this text as the businessman would, namely, as a starting point for the actual study of financial statements. In no other way can the material presented be made so interesting and fruitful. Such an attitude

prevents a blind memorizing of textual matter with no thought for its actual meaning and mode of application.

The author wishes to express his appreciation of the interest of credit men and bank men who have helped him. He is also pleased to take this opportunity to thank Professor C. Lloyd Sweeting for his aid in reading the manuscript, and Dr. Charles W. Gerstenberg for his invaluable suggestions drawn from a very considerable experience in the field.

Contents

PART I. GENERAL TECHNIQUE OF ANALYSIS

Part I

GENERAL TECHNIQUE OF ANALYSIS

CHAPTER I

The Place of Financial Statements in Modern Business

Analysis of general value. Among the subjects interesting to those connected with the administration of business is that of financial statements, a subject which may be studied from either of two viewpoints—construction or analysis. The construction of financial statements is the work of the accountant, and an ever-increasing number of accounting textbooks are devoted to an exposition of that field. The present volume, however, is concerned with the analysis and interpretation of financial statements, which is the aspect of the subject having the more general interest. For every accountant engaged in the construction of a statement, large numbers of persons are interested in the use of that statement—the executives, who need information the better to guide the destinies of the business; the bankers, who must have sufficient information to justify the making of loans; credit managers, who require adequate facts as a basis upon which to extend credit; and investors, who demand a sufficient record of financial success to warrant their purchase of the securities of the business. Even the accountant will find it valuable to study the analytical side of financial statements, in order to acquire the viewpoint of the users of his product, and to give his work more than the mere technical accuracy required of certified statements. His reports should be so framed as to possess a maximum of usefulness for interpreting the financial situation that they are intended to picture.

Although emphasis is thus placed upon the wider utility of the analytical side of this topic, no disparagement of the study of the constructive side is intended. The student or businessman who by actual practice has learned by what steps and upon what principles statements are constructed is to that extent better qualified to analyze the resulting product. What is needed, how-

ever, is more particular attention to the ultimate end which most persons wish to attain by such study. The question that confronts the majority of people who come in contact with financial statements is, "What is the significance and meaning of the figures presented?"

Before we discuss the subject, it may be well to point out that there are certain factors operating to bring about an increased use of financial statements. The most important are: (1) large-scale production; (2) governmental regulation, particularly of public service corporations; (3) income tax legislation; and (4) the regulation of security issues and the security markets by the Federal government under the Securities Act of 1933 and the Securities Exchange Act of 1934.

Large-scale production. Large-scale production is one of the outstanding characteristics of the present industrial era. The size of modern enterprises has in most cases been justified by the economy of large-scale operations. Savings have resulted from large purchases of raw materials by trained buyers, from the division and specialization of labor, from the use of labor-saving machines too expensive and too huge in their productive capacity to fit into the small plant, as well as from more skillful methods of marketing. But while, on the one hand, this trend toward large-scale operation has been effecting economies, on the other hand it has been making necessary a new type of administration—one which is able to understand and control a large organization through the instrumentality of accounting and statistical reports. The day has largely passed when the management could enjoy a face-to-face relationship with the men and the operations of a business or an industry.

The relationship has become impersonal not only within the individual organization but between businesses as well. The increased facilities for communication—the railroad, the postal service, the telephone, the telegraph, and the radio—have widened markets immensely. Moreover, individual owners have been largely replaced by corporations, which are dependent for their success upon the ability and character of a great many persons. Since it is possible to meet only the representatives of such corporations, some means must be provided to view essential financial results of the activities of the entire organization.

No adequate idea of the corporation's properties can be had from inspection, but a financial blueprint can be secured from which the elements of strength and weakness may be studied.

Such a statement of condition is found in the balance sheet. Further than this, although it is impossible to represent the multitude of changes which are constantly taking place, condensed motion pictures, as it were, may be made up that will show the presence or absence of financial progress. Such an account of the causes of changes in the condition of a business over a period of time is known as a profit and loss, or income, statement. Collectively, these two statements—the balance sheet and the income statement—are spoken of as the financial statements, or the financial report; and from them the business man must be able to understand the condition of his business and the effect of its operations. Men with this ability are comparatively few; but it is the ability of these few to interpret business activities from such abstractions that makes possible the executive control of large-scale industry and the consequent social economies. Today the ability to analyze financial reports is essential to bridging the gap in personal relationships created by the size of our business units.

Regulation of public utilities. A second factor that has tended to develop a better quality of financial statement, and so to increase its study, is governmental regulation. When public utilities on a large scale first came into existence, the government adopted the policy of granting a multitude of charters. In certain instances parallel railroads were chartered and constructed. At that time competition was considered as the only force needed to regulate commerce. Inevitably, however, there developed a tendency toward unification, as it became apparent that public service corporations rendered the most economical service when operated as monopolies. In the absence of the restraining influence of competition, regulation by governmental commissions became necessary for the proper protection of the public, particularly against unreasonable charges. The first and essential step was the standardization of accounting procedure, in order to obtain correct and adequate data for the construction of financial statements.

For railroads engaged in interstate commerce the Interstate Commerce Commission has prescribed what accounts shall be kept and their content. In most states public service commissions have put into effect standardized account classifications for the different kinds of utilities. Financial reports published by these various regulatory bodies have become invaluable to the investor and the economist.

Income tax accounting. A third influence that has made the use of accounting records more common, and so made more available the material necessary for financial statements, is the operation of the income tax law. This tax became constitutional for the Federal Government on March 1, 1913. A number of the states have also adopted the tax as a part of their fiscal programs. One of the most striking things brought out in the administration of the law was the number of businessmen either entirely without information or in possession of very inadequate figures in regard to the condition and operations of their businesses. Consequently, it has been necessary for the tax authorities to insist upon the keeping of suitable accounting records. Since the income tax has proved to be very productive of revenue and is levied on a basis that is widely regarded as socially advantageous, this source of encouragement to accounting activity will undoubtedly be a continuing one.

Federal security regulation. The Senatorial investigations of various financial situations and practices following the crash of 1929 brought home very clearly to the public the paucity of published information in many of the cases questioned. Huge sums had been raised by promoters and investment bankers on the basis of such slender information that, in effect, the investing public was participating in blind pools. Again, corporate administrations, sometimes owning but small amounts of securities in the concerns they manage, have pursued on occasion a policy of concealment which showed little appreciation of the principle of trusteeship which should be effective in such cases. The former situation has been met in the Securities Act of 1933, which compels a full disclosure of pertinent facts in the case of security flotations involving interstate commerce or the use of the mails. The latter situation is dealt with in the Securities Exchange Act of 1934, which, through the powers vested in the Securities and Exchange Commission, regulates the organized stock exchanges and requires corporations with securities listed on such exchanges to supply suitable financial statements. Possibly, this regulation may lead to such adequate reports as have characterized railroad accounting under the Interstate Commerce Commission. This regulation has resulted in more adequate reports from many of the corporations whose securities are listed or have been distributed to the public since 1933. The differences among the various kinds of business make uniform reporting, such as is usual for a given kind of public service corporation, difficult to prescribe. A

feeling also exists that very full reports may give competitors undue advantage, especially if the competitors are not publicly financed and so not obliged to make similar disclosures.

The work of the New York Stock Exchange in increasing the amount of financial information from corporations, prior to the advent of Federal regulation, has not been fully recognized, because of lack of publicity. Although officials created high standards for companies seeking to list their securities, they lacked the power of a governmental regulatory body in applying new rules of a stricter sort to old companies. Much of their work was persuasive rather than mandatory in nature, so that many reports of well-known companies were quite inadequate.[1] Full credit is due, however, to those corporate officials who recognized their position of stewardship and rendered full and detailed reports without outside compulsion. Even today, the reports of regulated corporations vary greatly in their informative quality, especially in background material such as is difficult to require by regulation.

Analysis for executives. While each of the four above-mentioned factors has tended to increase the use of statements, the first—the growth in size of the business unit—is the leading influence. Within the business it has forced the executive to feel the need for suitable accounting control; outside the business the banker, the merchant creditor, and the investor have come to rely largely upon the financial statements in making their decisions.

The first and most important function of financial statements is, of course, to serve those who control and direct the business, to the end of securing profits. In the task of control and direction, many problems are involved, and the assistance of reliable information is invaluable, although the exact nature of the assistance obtainable from the utilization of financial statements can be understood only after the principles of analysis have been developed and the features that merit attention pointed out.

Questions as to how efficiently the capital of the business is being utilized, how nearly exhausted the credit is, and whether the financial condition is improving may be answered from the statements.

Using analogy, we may say that the financial statements will

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[1] W. Z. Ripley cited cases of lack of adequate publicity in *Main Street and Wall Street* (Boston: Little, Brown, 1927) in Chapters VI and VII.

serve the business executive as gauges and charts serve the engineer. While nobody will assert that the ability to read gauges and similar instruments makes an engineer, anybody will admit that he should use as many devices as possible to register automatically the important things, so that his operations may be made more intelligently.

While appreciating the place and importance of statement reading in the administration of the field of business, many businessmen lack ability or training, or both, in this direction, even though much has been accomplished by widespread education in accounting in recent years. The accounting profession has also helped by seeking to clarify financial reports through improved terminology and supplementary explanatory notes.[2]

Analysis in banking. After the executive, there is probably no one quite so interested in the details of the finances of an enterprise as the banker. The banker stands in a particularly confidential relation to his customer. Because of the very narrow margin of profit in banking, caution is so necessary that it has become a proverbial characteristic of the banker. In general, the commercial banker discounts the notes of his customer for a short period, say, thirty to ninety days. He wishes to be assured, not merely that these notes will be paid ultimately, but that they will be paid when they come due. The policy of the Federal Reserve banks favors short-term paper. Although since 1935 these banks have been permitted to make advances upon any bank assets judged acceptable under regulations of the Board of Governors of the Federal Reserve system, the most favorable treatment is accorded to rediscounts or loans upon paper of not more than ninety days maturity at the time of rediscount.[3]

Furthermore, any Federal Reserve bank, in order to determine whether paper offered for discount or security offered for an advance is eligible and acceptable, may require that financial statements be submitted which will reflect the financial worth of the parties to the paper. The custom of requiring such statements is general.

While it is true that the banker seeks liquidity, he may feel it

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[2] As to the duty of the accountant in this latter respect, see Montgomery, Robert H., *Auditing Theory and Practice* (New York: Ronald Press, 6th ed., 1940), p. 9 *et seq.*

[3] Loans under sections 13 and 13a of the Federal Reserve Act. An exception is made for agricultural paper, which may be for nine months. Regulation A as revised October 1, 1937.

necessary to use leniency in periods of stress. His debtor occupies the position of a client rather than that of an ordinary customer. This means that the banker's analysis, in the first instance, should be thoroughly searching. He should extend credit only where the situation is fundamentally sound, even though the advance is in theory but temporary; and then, if it becomes necessary to carry his customer along, he can do so with confidence.

Another development that has increased the need for thorough banker analysis is the rise of the term loan. This credit, unlike the traditional short-term commercial banking paper, runs for an extended period, say three to five years. The principal is repaid by regular amortization that is designed to retire the whole indebtedness during the term of the loan. Such a loan, requiring a longer period of repayment, presumably is a greater burden in relation to the borrower's means than the usual commercial paper and so entails a greater credit risk. Moreover, the longer the credit period, the greater the opportunity for adverse developments that may cause losses.

The banker will usually secure his statement from the borrower's hand. In an effort to check the information from an independent source, a credit report may be drawn from the general mercantile agency, Dun & Bradstreet, Inc. Usually, the chief value of these special reports will lie in the other supplementary information they furnish relative to the antecedents, the payment record, and the standing of the borrower. A most valuable resource of the banker in making his analysis lies in the personal interview, in which it is possible to find out the borrower's explanation of any extraordinary items or apparent abnormalities.

The personal interview must be regarded, however, as a supplement to, and not a substitute for, financial statements. It is unfortunately true that some bankers fail to appreciate the utility of the statements, and persons can be found who will state that "the personal interview is worth more than an accounting statement at any time." Such a remark would seem to indicate either an inability to analyze statements, or poor preparation of such statements as the banker has had occasion to use. If one has analytical ability, surely the facts of a statement should count something against mere personal impressions; otherwise we should all be purchasing oil stocks and gold bricks instead of well-secured bonds.

The experience of a certain small bank which had extended credit to a local manufacturer for a considerable period without obtaining any adequate statements is illustrative of what may happen when too much reliance is placed upon personal impressions. During the period in which credit had been granted, the indebtedness had slowly increased, and when a statement of condition was finally demanded and analyzed, insolvency was only too apparent. The bank had been financing a growing deficit. Yet, in this instance there should have been ideal credit information, for the bank was serving a small community and had built up most intimate relations with its customers. It is evident that this very intimacy had made the banker careless in his demand for, and scrutiny of, financial statements.

This case is not to be regarded as characteristic of the banking business.[4] Such practice, however, not only indicates a lack of customary banking prudence, but it is in marked contrast to the practice which many banks have adopted in recent years of establishing a separate credit department with complete information files. The specialized credit department, with its intensive study, is but a logical development of changed conditions in two important respects. In the first place, the growth of keen competition makes it essential for a bank to know more precisely the condition of a customer so that it may grant him as large a line of credit as is merited in order to avoid losing his patronage; and, second, the bank's customers are spread over a larger area and have increased in numbers to such an extent that their relations are more impersonal, and statements constitute the only means of securing a complete picture of the financial situation.

Commercial paper houses. The commercial paper houses, as adjuncts of the banking system in this country, have an interest similar to that of the bankers. After making a thorough investigation, these houses purchase outright the short-term notes of large business concerns, and then market them among the commercial banks wherever funds are most abundant. The paper may be taken by the purchasing bank on approval, so

[4] This statement is made in spite of the numerous failures during the depression which began with the 1929 crash. Many banks were badly managed and deserved their fate, but many others paid off an extremely high percentage of their deposits within a very short period before closing their doors. No independent unit banking system could stand the strain of such heavy runs by depositors.

that the bank has an opportunity to study the paper offered. This work of checking up on the financial condition of the borrowing concern is usually very well done in the first place by the commercial paper house, since its reputation is involved when there is subsequent trouble. It is clear why such a house insists on statements with definite figures, rather than relying on mere trade opinions—that is, personal estimates of the debtor's standing by his merchant creditors.

Analysis in mercantile credit. Another field where the use of the financial statement is growing is that of mercantile credit-granting, that is, the granting of credit by one merchant to another. The margin of gross profit in this sphere has been wider than in banking, and there has existed a feeling on the part of some businessmen that the work of credit-granting was rather incidental to the main work of buying and selling. This attitude has made difficult the work of those other credit-granters who have appreciated the importance of care in credit extension if profits are to be realized, and who have sought co-operation among creditors in exacting adequate information from their debtors.

The usual object of granting a credit term is to permit the customer a period in which he may realize on his merchandise. This term may vary from one to six months, depending upon the kind of business, and in that respect it is similar to the short credit term of the commercial bank. The attitude of the merchant, however, is essentially different from that of the banker. The former is seeking an outlet for his specific goods and is willing to grant credit to open that outlet and thereby secure his profit; the latter lends for the sole object of obtaining interest on his funds. This greater inducement for the merchant to extend credit is the chief reason for his lower standard of credit. In a practical sense, though not in a legal sense, wholesale merchants make their customers partners in the profit-making job of distributing goods to the consumer. Such "partnership" is seen in the growing aid on accounting, buying, and selling methods given to retailers by wholesalers in an effort to prevent the extinction of the former by the competition of chain stores.

With the increase in competition has come a tendency for the margin of profit to decline, which, in turn, has gradually increased the need for improving the credit risk. In spite of this fact, much credit is still based on references. If a house has a record for prompt payment, it is eligible for further credit. The argu-

ment seems to run, "If he has paid, he will continue to pay." That this argument perhaps holds true is a tribute to the worth of the debtor rather than to the intelligence of the credit man who reasons in this way. A concern with a good record may be financially weak, and a slow-paying house with a poor record may be essentially sound. The true state of affairs would, in any case, be revealed by a properly prepared financial statement, since such a statement would indicate the probable reason for past promptness or slowness and what might reasonably be expected in the future.[5]

The value of statements has been recognized by the National Association of Credit Men almost since its organization in 1896. It has encouraged the wider use of this type of information by the adoption of a uniform statement blank which it supplies at a nominal cost. It may be noted in passing that this action in adopting a uniform statement blank in 1898 preceded similar action of the American Bankers' Association by a year. In their educational work they have urged the advisability of securing these statement blanks and having them properly filled in and signed by the credit applicant.

False statement laws. Written statements obtained in the manner just suggested are likely to be more accurate than information obtained verbally. The mere fact of writing the figures down in black and white makes for caution. In addition to this, the law protects the holder of a signed statement.[6] The protection afforded is threefold.

1. In practically every state there is some form of statute punishing those who obtain property by means of false representations. Such statutes are usually found in connection with the law relating to larceny. In this form, the law has been found

[5] A survey of 570 bankruptcies in the Boston district (November, 1930–June, 1931) by the Department of Commerce in co-operation with the Institute of Human Relations and the Law School of Yale University is illustrative of the lax credit-granting which multiplies the number of business failures. Any reasonable study would have shown many of these units as doomed from the start. Not only were 53 per cent poor-pay from seven months to two years before actual failure, but a study of their own credit losses in turn showed a loss ratio nine times as great (5.6 per cent of open credit sales) as that of capable concerns. Over half of the failing concerns kept no books; another 28 per cent kept inadequate records, and a large proportion took no inventories. (Sadd, V., and Williams, Robert T., *Causes of Commercial Bankruptcies, Domestic Commerce Series No. 69.*)

[6] For a full treatment of the remedies for defrauded creditors, see Arthur E. Fixel on *False Financial Statements* (Albany, N. Y.: Matthew Bender & Co., Inc., 2nd ed., 1934).

unsatisfactory because of the legal difficulties in the way of completing all the required evidence. For example, it is usually necessary to prove the delivery of the property to the defendant. And since, in transportation, goods pass from hand to hand and finally to some employee of the customer, it is frequently a task of unusual difficulty to supply this one point of evidence, even though it is practically certain that the goods have been received and used by the customer.

2. For the above reason, legislation has been sought in order to make the giving of a false statement for the purpose of securing credit an offense in itself. The National Association of Credit Men has been instrumental in securing a uniform false statement law. The only evidence required under this law is that necessary to prove: (*a*) that the defendant made a false statement; (*b*) that he intended that the statement should be relied on; and (*c*) that he gave it for the purpose of securing credit. Under such an act the question is not raised as to whether there was a "fraudulent intent," but only as to whether the debtor gave out a false statement for credit purposes. The spread of this law in the various states indicates that there is a growing use of the statement by merchants granting credit, and an increasing feeling of the need for assurance as to its correctness.[7]

3. Under the Federal law punishing those who use the mails for fraudulent purposes, a person sending a false statement in writing makes himself liable to even more severe punishment than is provided under state laws.[8] The law is very similar in its evidence requirements to the uniform false statement law used in the states as mentioned above under heading 2. The vital difference is the necessity of proving, when the case is prosecuted under the Federal law, that the statement in question was sent through the mails. It is to insure against the loss of the postmarked wrapper that the property statement blank of the National Association of Credit Men, referred to above, is printed on a form that, when folded, makes its own mailing envelope.

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[7] The *Credit Manual of Commercial Laws* for 1941, published by the National Association of Credit Men, lists 35 states (page 309) with false statement laws of the New York type, which is the model form approved by the association. Seven more states provide punishment for false statements when money, property, or credit has been obtained on the strength of the statement.

[8] *United States Code*, 1940, Title 15, Subchapter I, Section 77q (Washington, D. C.: U. S. Government Printing Office, 1941).

Analysis for investors. Turning from the banker and mercantile creditor to the investor, we find a somewhat different problem. Whether buying an interest in a firm or purchasing the securities of a corporation, the investor's interest in the enterprise will be continued for a number of years instead of for a few months. If he is buying an interest in a partnership, he is concerned with the net value of properties, the amount of earnings, and the financial strength of the business and the partners. If he is a prospective stockholder, his problems are practically the same, except that in a corporation there is likely to be a more complicated financial structure and his foothold may be more precarious owing to the greater number of obligations taking precedence over his interest as stockholder. The bondholder has a much easier problem of analysis. Under normal conditions, he is protected by a margin of property values in excess of his claim and by a surplus of income over the requirements for his interest. His problem is to assure himself that the margin of safety is sufficient to meet the requirements of his financial position and temperament.

Investors as a class need to know, first, that the whole financial structure is strong—not merely that the concern will be able to meet current obligations; and, second, that there is sufficient evidence in the history of its earnings to warrant a belief in future growth. One of the advantages arising from analytical ability is that it opens up a wider range of investment possibilities and a consequent increase in income without a corresponding loss of safety. To the person appreciative of the power of interest accumulations, increased return, small though it may appear to the uninitiated, is no inconsiderable attraction and suggests the value of a more thorough knowledge of how to study a financial report. Thus, so small a sum as $10 per month when saved regularly over a period of forty years would equal $4,800; but if 3 per cent interest compounded half-yearly were added, it would amount to $9,162. If, however, the rate earned could be raised to 4 per cent, the accumulation would reach $11,626; at 5 per cent, it would be $14,902, and at 6 per cent, $19,281.

The search for higher return often means the assumption of increased risks. If losses ensue, they counterbalance the higher return. The problem of the investor is to avoid risks which are likely to consume all of the extra income, or "premium for risk." This end may be achieved by avoiding investment fashions or by

selecting less well-known and less marketable commitments. Only by the most conscientious analysis of the record and study of the outlook can extra *net* return be realized, save as it occasionally arises from luck.

The investor seeking statements will find them supplied for practically all important corporations in *Moody's Manual of Investments,* which supplies information in separate volumes on (1) railroads, (2) public utilities, (3) industrials, (4) governments and municipals, and (5) banks, finance, and real estate. Suitably indexed supplements of current information are published between the annual volumes. The *Corporation Records* of Standard & Poor's Corporation contain statements and other financial information in loose-leaf and card form. *The Commercial and Financial Chronicle, Barron's, The New York Times,* and *The Wall Street Journal* are widely used for current financial information. Most corporations issue to their stockholders annual financial reports, which are sometimes condensed when reported by the agencies just mentioned. Even these stockholders' reports are not always in sufficient detail to be wholly satisfactory, but they are steadily improving in response to the demands of an ever-increasing number of readers who find the contents of use and interest.

The influence of the investor is doubtless one of the strongest forces working for financial publicity. Even before the rise of Federal regulation, one of the requirements of the New York Stock Exchange and of the Chicago Stock Exchange was that the corporation must agree to file its balance sheet and annual statement of operations before its securities could be listed for trading on these exchanges. The movement for publicity is made effective by the competition for the investor's capital and the desire for lower interest rates. Public confidence is a valuable thing to the financier.

Corporations whose financial statements are prescribed by the Securities and Exchange Commission or other regulatory bodies often report more fully than they otherwise would. Reports to these commissions are a source of information used by the investment services mentioned above.

Value of statement publicity. Thus far we have briefly outlined the utility of our subject to the executive, the banker, the commercial paper house, the mercantile creditor, and the investor. Important as these uses are and broad as these interests are, particularly in the case of the last class, it may not be too far-

fetched to suggest that the public, as such, has a real interest in learning "how to read figures." This statement may not apply to the general public, but it certainly applies to that part of the public which leads our thinking in economic matters. The professional economist, the journalist, and the legislator, when dealing with business, all stand in need of a much clearer understanding than is generally shown of this field, toward which so much of their attention is turned.

Big business, because of the power it wields, offers a convenient target for attack in times of unrest, regardless of the fairness of the censure. When a half-dozen business units supply practically the whole demand for an article throughout the United States, their very size gives them a semimonopolistic power which makes their policies a matter of considerable social importance. If mystery surrounds their operations, there is bound to be misrepresentation; the only avenue of escape from a serious hostility is publicity. Business is generally charged with being extortionate by those who are little acquainted with its ways rather than by those who are familiar with them, for the latter are acquainted with its losses as well as its gains.

A general feeling of hostility toward big business dates back to the early chapters of railroad history when the railroads were regarded as financial footballs by the warring "speculators" of that time. Public welfare was disregarded, and a "public-be-damned" attitude was current. Subsequent regimes have had to bear the stigma, with the result that legislation has been harassing and repressive rather than helpful and constructive. In view of the commercial importance of the railroad's services and of large-scale business generally, this attitude is unfortunate. However, it can only be regarded as the logical outcome of the past. When the public is disregarded and uninformed, it is quite likely to step in and enforce its rights with a harsh, if not an unjust, hand.

Some of the meat packing companies and dairy products distributors have adopted the plan of presenting in popular advertising form the relatively small amount of their profit when it is compared with the total cost of their product. Others have also shown how the sales dollar is divided among the various costs. The shares which go to wages and to capital are of particular interest. Often a full statement of the facts is valuable in refuting loose statements which exaggerate the extent of profits and so make for social conflict.

The logic of a policy of frankness is well stated in the following advertisement of the General Motors Corporation:

In recent years there has developed an increasing tendency on the part of forward-looking corporations to take their stockholders and the public more fully into their confidence.

With few exceptions, hardly any business of the first magnitude is any longer a private enterprise. Most of the major industries are publicly owned, and their operating officials recognize both the obligation of frankness to the owners and the benefit which can accrue from widespread public support based on complete public understanding.

General Motors has been privileged to take an advanced stand in promoting this new era in the relationship between so-called "Big Business" and the people.

The Corporation publishes not only annual and quarterly statements of earnings. It also publishes each month exactly how many cars have been sold to the dealers and delivered by them to the public. By statements to stockholders, and by frequent releases to the financial sections of the daily newspapers, timely and accurate information is given regarding its operations both in this country and abroad, its investments in related industries, and the important developments in progress and plans.

General Motors believes that this policy of telling the facts has done much to strengthen the confidence of the American people in their important industries, and that this increased confidence is well reflected in the generally increased number of owners of common stocks.

The stockholders of General Motors, who were less than 2,000 in 1917, increased to more than 71,000 at the beginning of 1929, and are more than 240,000 at the present time. [By 1940, the number was substantially 400,000.]

A number of banks and other corporations are publishing their balance sheets in a form intended to clarify their subject matter and awaken interest. Such an attitude of financial policy, *when honestly carried out,* will create valuable goodwill, greater freedom from unfriendly and burdensome legislation, and a growth of credit that will increase the ability of the corporation to secure capital from the public.

CHAPTER II

The Construction of the Balance Sheet

The two statements. There are two financial statements—the balance sheet and the statement of earnings. Before these statements can be appreciated and interpreted, it is necessary to understand the general principles governing their construction; and so this and the next chapter review some of the basic matters which should be familiar to those acquainted with the elements of accounting. Our starting point is a description of the general way in which each of the statements is put together and their interrelation. After this survey the two statements are more thoroughly explained, and in succeeding chapters the methods of interpretation are given.

The purpose of the balance sheet is to show the financial condition of the business on a certain date, generally at the time when the books are balanced and closed at the end of the calendar year or at the end of a fiscal year ending on some date other than December 31. The earnings statement summarizes the changes which have taken place since the date of the preceding balance sheet and which have affected the owner's share in the business in the way of either loss or gain. The balance sheets might be described as financial cross sections taken at certain intervals and the earnings statements as condensed history of the growth or decay between the cross sections.

Titles. The balance sheet, which is the more used of the two statements, is given various titles, partly because of a lack of uniformity in accounting practice and partly because of different conditions under which the information is obtained. The more usual titles are:

1. General Balance Sheet.
2. Statement of Financial Condition.
3. Statement of Assets and Liabilities.

4. Statement of Assets, Liabilities, and Capital.
5. Statement of Resources and Liabilities.
6. Statement of Worth.
7. Financial Statement.
8. Statement of Affairs.

The title, "Balance Sheet," is used most frequently, and when it is used the implication is that the figures have been taken from the balances shown on the books of account. The other titles, excepting the last, are used as alternatives for Balance Sheet. When used the statement so titled may not have been prepared from the account balances although it is expected that it will have been prepared in this manner if the work has been properly done. The "Statement of Affairs" is used only when an enterprise has reached the insolvent stage, and is made up to show the values which may be realized for the benefit of those who have claims against the business, and the amounts of the various claims. "Financial Statement" is such a general term that it is better not to use it when referring specifically to a balance sheet, for as a general term it is better applied to a whole report consisting of balance sheet, earnings statement, and any other pertinent financial data. Sometimes, it is true, the only information available for the financial statement is a statement of assets and liabilities compiled from estimated figures.

A not uncommon practice in connection with new financing, merger, and recapitalization or reorganization is the preparation of a hypothetical balance sheet which reflects the changes which are expected to result. Such a statement "after giving effect to" the proposed changes is called a *pro forma* balance sheet.

Form. The customary form of balance sheet, which accountants call the "account" form, shows the properties and their values on the left-hand side of the sheet and the claims or interests resting in this property ranged against them on the right-hand side. The English practice reverses this order. An argument for the English form would be that the balance sheet might be regarded as the account of the concern, and so should be credited (placed on the right-hand side) with all of the assets and debited with all of its liabilities. The American presents his balance sheet as a page torn from an imaginary ledger of the owners showing the accounts of the company. Lisle gives, however, as the actual explanation that the English form seems to have arisen through the Companies Act of 1862, which he sug-

gests must have been prepared by those unacquainted with the theory of accounts.[1]

A simple balance sheet might read as follows:

ORANGE GROCERY STORE
J. R. HAWKINSON, PROPRIETOR
BALANCE SHEET, DECEMBER 31, 1941

Assets		*Liabilities and Capital*	
Cash	$ 1,200	Accounts Payable	$ 2,000
Accounts Receivable	2,500	Notes Payable	2,000
Merchandise	8,500	Mortgage Payable	8,000
Fixtures	500	Net Worth	15,700
Land and Building	15,000		
	$27,700		$27,700

Assets. The assets are the whole properties which belong to the business. If the business is conducted by an individual or a partnership, the balance sheet does not necessarily include all the property which the creditors may levy on for the payment of their claims. Everything the proprietors own, whether used in the conduct of the business or not, with the exception of certain articles which are exempt by the laws of the various states,[2] is subject to creditors' claims. This possibility of going outside the business for the settlement of a claim is important in judging the credit rating of unincorporated businesses, such as that of the typical independent retailer. The reports of the general mercantile agency, such as Dun & Bradstreet, Inc., aim to include any outside property and debts, not only for their bearing on the real worth of the debtor but as indications of the outside financial activities of the owners.

One of the most vital points in understanding the construction of this side of the balance sheet is a knowledge of how the asset values are arrived at. In defining a balance sheet, it was stated that its object was to show the financial condition on a certain date; yet the asset values, generally speaking, show the cost at

[1] Lisle, George, *Accounting in Theory and Practice* (Edinburgh: Wm. Green & Sons, 1906), pp. 72–74. The difference in practice has been attributed, probably humorously, to the relative temperaments of the two countries, the conservative Englishman showing his debts first and the ever-hopeful American putting his property to the fore.

[2] Exemptions of homesteads, personal property, and wages which are free from the claims of creditors by the laws of the several states may be found in up-to-date form in the *Credit Manual of Commercial Laws* published annually by the National Association of Credit Men (New York).

which they were acquired. This variation from what would appear to be the common-sense method, that of using the current values at the date of the balance sheet, may be best explained by a brief statement and explanation of the principles which govern the standard accounting practice in asset valuation.

1. *Rule of valuation at cost.* In general, the value shown is the cost of the property at the time acquired. This amount, it is assumed, was determined by market conditions, and consequently is not of a theoretical or arbitrary nature. The rule has certain virtues. It prevents arbitrary manipulation by an interested management; it has given one basis, at least in theory, for rate-making in the case of public service corporations subject to governmental regulation; and it makes possible the accurate determination of profit or loss when the asset is finally disposed of. Even though this method fails to register present value, it makes it much more possible for an able analyst to estimate that figure than it would if the amount were set from time to time by the whims of business management.

2. *Chief exceptions.* The most important exception to the rule of valuation at cost is found in the case of those goods which are the stock in trade of the business and are being constantly bought and sold. These are the items which usually appear as either "Merchandise" or "Inventories." While cost price is sometimes used in the valuation of these items, the use of "cost or market price, whichever is the lower of the two" seems to be the common rule. The rule is to be commended more for its conservatism than its logic. The explanation of this rule of conservatism appears to lie in a dual objective: on the one hand, the management wishes to avoid showing an unrealized profit when inventories have a market value in excess of their cost, and, on the other hand, it does not want to mislead creditors as to the strength of the business by showing inventories at cost when market value is lower at the date of the balance sheet.

Another point to be noted with respect to the valuation of the stock in trade is that it is very often obtained independently of the accounting records by an actual physical count. Since the selling price is different from the purchase price, it is often inconvenient to keep a record of outgoing merchandise which is comparable in dollar terms to that of incoming merchandise. Many businesses keep a record of purchases only at cost and of sales at selling prices, so that an accurate current record of the inventory balance cannot be had from the books of account.

This lack makes necessary a counting and a valuation of the stock whenever a balance sheet is to be made. Even when there is a constant record of the amount of the stock kept at all times by the perpetual inventory method, it is verified from time to time by count.[3]

Another asset which should be valued on the same basis as inventory is temporary investments held as a support to cash in order to meet emergencies or unknown future needs. Such holdings are usually termed "Marketable Securities," and are shown close to the "Cash" in a properly arranged balance sheet.[4] Permanent investments will ordinarily follow the general rule of valuation at cost.

3. *Modifications of the cost rule.* Many assets used in the regular operation of the business are subject to a lowering of value which is not due to price changes. Plant and equipment tend to wear out. Balances owed by customers (accounts receivable) are subject to practically certain bad debt loss. Allowance for decreases in value of this sort is sometimes made by a deduction from cost before placing the figures in the balance sheet. In order, however, that original value may be known, it is preferable to show all such deductions or allowances on the face of the statement. In this way, our first principle of valuation is not changed but merely modified. The form for displaying this deduction is discussed below under Reserves.

In order to emphasize these principles of valuation, it might be well to add that it is ordinarily improper to alter the original cost to show either appreciation or depreciation in value where the change arises from fluctuations in market price, except in the case of depreciated inventories and temporary investments as noted above.[5]

Purchases of assets. The rule that assets should be shown at cost, while meeting the accounting requirement, leaves the

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[3] For a fuller discussion, see Finney, H. A., *Principles of Accounting, Intermediate* (New York: Prentice-Hall, Inc., 1938), Chap. XII, "Inventories."

[4] Kester suggests that the rule of "cost or market value, whichever is lower" be applied to all current assets. Note that substantially the same result follows from the application of rules 2 and 3 given here. Kester, R. B., *Accounting Theory and Practice* (New York: Ronald Press, 3rd ed., 1930), Vol. I.

[5] A tendency to modify this rule is discussed in Chapter VI. An unusual exception to the rule arose under the income tax law of 1918, when permission was granted to mark down property values to their "fair market value where the same were acquired for the production of articles to be used in the prosecution of the World War." Revenue Act of 1918, § 214 (A).

method of payment unstated—a matter of the greatest importance to one who seeks to interpret the balance sheet. Property may be purchased by a corporation and paid for in any of three different ways: with cash, with property other than cash, or with stocks and bonds issued by the corporation. Where the purchase is by cash, the problem of analysis is simplified by the fact that, when cash passes, it is usually safe to assume that the assets which the corporation has obtained have a market value fully equal to the amount paid. In the case of assets obtained in exchange for other property or for securities, the valuation is set by the financial managers, and may be highly exaggerated or ultraconservative, according to the temperament and motives of those in charge. The most familiar example of overstatement is found in those newly promoted companies engaging in speculative enterprises. The only cost to the corporation when it pays with its own securities is the expense of having the certificates printed. As a result, a stock certificate is as likely to be issued for $1,000,000 as for $100,000 if it suits the ends of the management.

While we are concerned in this chapter with the manner in which the balance sheet is put together rather than with the method of analyzing it, the foregoing discussion has brought out the following points upon which the analyst should be informed: (1) the extent to which good accounting practice is likely to have been employed; (2) the probable changes in value—appreciation and depreciation—that have occurred but that have not been recorded on the books; (3) the method of purchasing the assets; and (4) the honesty and temperament of the management.

Liabilities. Strictly speaking, a liability is a debt or an amount owed to someone who has a right of action at law. Reference to the simple statement of the Orange Grocery Store (page 26), however, will show that the claims against the assets are not all liabilities, in the strict sense of the word. The items on the liability side are of two kinds, those representing claims of creditors and that representing the claim of the owner. The former show the amounts contributed to the enterprise by trade creditors, banks, and, in certain cases, bondholders. These persons or concerns supplied a part of the property and have a fixed claim in proportion to their relative contributions.

The claim of the owner, on the other hand, is not for a fixed amount, but is the remainder of value after the subtraction of these debts from the assets. If any of the assets change in value,

it is the owner's equity or claim that registers a corresponding change on the opposite side of the balance sheet. In this way, the contributions of the owner or owners of a business serve as a financial shock absorber for the creditors, providing them with what is often referred to as a "margin of safety."

The balance sheet, then, might be defined as the dual financial picture of an enterprise, depicting, on the one hand, the properties that it utilizes, and on the other hand, the sources of those properties. The term *interests* would suitably apply to these sources or claims; but since the use of the word *liability* is common, there is no objection to its use here, provided the essential difference between the owners' and the creditors' interests is kept clearly in mind.

Accountants call the owner's interest his capital, and so use the equation:

Assets = Liabilities + Capital, or
Total property of business = Total owed creditors + Balance of value belonging to owner.

This equation is the basis of the balance-sheet idea, and underlies the whole theory of account-keeping.

It is important to note this use of the word *capital* as meaning the owner's share in the business, since it differs from the current usage of the word. Ordinarily, to the businessman capital means any and all property used in the business, and is equivalent to the term *assets;* but in works on accounting it may be assumed that it is used to refer to the owner's interest except where stated otherwise. The term *net worth* is also used by the accountant to describe the owners' share, and since it is less ambiguous, it will be employed throughout this book.[6]

Classification of creditors. The creditors may be classified as follows:

1. Secured creditors.
   For example, a mortgagee secured by a lien on a piece of real estate.

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[6] The word *capital* is used in four different senses: (1) by political economists to mean production goods, that is, wealth employed in production of further wealth; (2) by accountants to mean net worth, that is, the owners' share in a business; (3) by lawyers to mean capital stock, that is, the stated, or par, value of stock issued by a corporation; and (4) by businessmen to mean assets. Confusion would be reduced if each group would use the more precise alternative given here for the word *capital.*

2. Partly secured creditors.
   The property pledged may not be worth enough to cover the debt completely. If the exact value of the pledge were determinable, such an amount could be regarded as falling under the preceding heading and the balance under the following heading.
3. Unsecured creditors.
   a. Those with debts which have priority.[7]
      (1) Taxes.
      (2) Wages of employees.
      (3) Certain debts incurred by an insolvent business, such as those incurred by a receiver.
   b. General creditors.

The secured creditors are those who have some lien on specific assets and thus have a right to be paid from the proceeds of the sale of those assets if their claim is not paid in the course of business. This is true where real estate is mortgaged, or where personal property is pledged for the payment of a debt. Securities are frequently deposited for this purpose, in which case they are spoken of as *collateral.*

The preferred creditors are those having a right to prior payment through an act of law. Under the Federal Bankruptcy Act, all taxes legally due and owing to the United States, state, county, district, or municipality are preferred liabilities. Preference is also given to wages due to certain employees which they have earned within three months before the date of commencement of bankruptcy proceedings not to exceed $600 for each employee. State laws may give other creditors, such as judgment creditors or bank depositors, a priority. Such priorities are recognized in the application of the Federal Bankruptcy Act.

All general creditors have the same rights to a share in the remaining assets in proportion to their allowable claims. If the property pledged to a secured creditor is insufficient to satisfy his lawful claim fully, he becomes a general creditor for the unpaid balance.

Stating the owners' interest. The interest of the owners is stated in the balance sheet in slightly different ways according to the legal form of the organization—individual proprietorship, partnership, or corporation. The display is similar for the partnership and the individual proprietor.

[7] Priorities (not in order above) are detailed in the Federal Bankruptcy Act.

If there had been a partnership of James and Wynn Hawkinson, instead of the sole proprietorship, in the illustrative balance sheet shown earlier in the chapter, the form would have read:

ORANGE GROCERY STORE

BALANCE SHEET, DECEMBER 31, 1941

Assets		*Liabilities and Capital*	
Cash	$ 1,200	Accounts Payable	$ 2,000
Accounts Receivable	2,500	Notes Payable	2,000
Merchandise	8,500	Mortgage Payable	8,000
Fixtures	500	James Hawkinson, Capital	10,000
Land and Building	15,000	Wynn Hawkinson, Capital	5,700
	$27,700		$27,700

However obscured the worth of the owners may be because of accounting terminology, the amount may be had by taking the excess of the assets of the business over the claims of creditors. With this principle as a basis, balance sheets are sometimes written in what is known as the "report" form, which is clearer to the untrained reader who is confused at finding "capital" under the heading "Liabilities." In the report form, the liabilities are listed below the assets, and the difference is labeled *Capital,* or *Net Worth,* thus:

ORANGE GROCERY STORE

STATEMENT OF NET WORTH, DECEMBER 31, 1941

Assets		
Cash	$ 1,200	
Accounts Receivable	2,500	
Merchandise	8,500	
Fixtures	500	
Land and Building	15,000	
Total Assets		$27,700
Liabilities		
Accounts Payable	$ 2,000	
Notes Payable	2,000	
Mortgage Payable	8,000	
Total Liabilities		$12,000
Net Worth		
James Hawkinson, Capital	$10,000	
Wynn Hawkinson, Capital	5,700	
Total Net Worth		$15,700

This form, because of its simplicity, is of value in presenting the balance sheet to the layman, but is less valuable to the analyst because it makes mental comparisons between the two sides of the sheet more difficult. The greater value of the account form of balance sheet for analysis will be more apparent after a study of the internal relations that exist between the kinds of property and the various forms of liability.

Par value. The nature of par value has to be understood before the form for stating the owner's interest in the balance sheet of a corporation can be explained. In a corporation the owners are the stockholders, and their relationship with the enterprise is evidenced by stock certificates which state the number of shares that are owned. These shares may have a par value per share which is stated on the face of the certificate. The par value in legal theory is an amount which must be paid in full by a subscribing stockholder, else he or subsequent holders of his shares will become liable for any unpaid balance whenever the corporation is unable to meet its debts. In actual practice, the par value is a nominal figure of little or no aid in determining the actual value of the stock. The first reason for the lack of significance in par value is that stock may be paid for with property other than cash, which can be overvalued or undervalued. A board of directors can as readily declare patent rights to be worth a half million dollars as worth fifty thousand dollars. Since, in the absence of any evidence of actual fraud, the law leaves the matter of value to the discretion of the directors, such a case is neither impossible nor improbable. A second reason for the lack of correspondence between par and actual values is that every corporation either accumulates profits or has losses—a fact that alters the original worth of the owners' interests, even if it were exactly par in the first instance.

Stockholders' liability. Ordinarily, the owners' or stockholders' interest in a corporation will appear as follows, except when the stock is without par value, a condition discussed later in this chapter:

1. When the stock has been purchased and paid for at par, the amount of the par value appears under the title "Capital Stock."
2. When more than par has been paid to the corporation for its stock, Capital Stock will show the amount of the par value and the Surplus account (or an equivalent account, such as Premium on Stock) will show the excess paid in over par.

3. When less than par value is paid in, which is unusual, the account Capital Stock will show not par, but the amount paid in, except when it is intended to collect the balance within a short time; then the total par value subscribed may be shown as capital stock with the unpaid subscriptions owing by the subscribers appearing as an asset.[8] So important to stockholders and creditors is the matter of stock not fully paid that it should be clearly shown in the balance sheet, in either the text or a footnote.

The names of stockholders are not shown in the balance sheet, as the names of the members of a partnership are, chiefly because the reader has no interest in the stockholders as individuals, there being no recourse against them for debts incurred by the corporation. The corporation has a separate legal personality. Exceptions to the general rule that a stockholder cannot be held save for his original contribution to the corporation's assets are:

1. In most states, the stockholders are assessable for an amount equal to the difference not paid whenever the stock is originally issued for less than par value. This possibility explains why the stock certificate when fully paid is stamped "fully paid and non-assessable."

2. Some stockholders of banks have an additional liability to creditors in case of insolvency for an amount equal to the par value of their stock. The Banking Act of 1933 abolished this liability for stockholders of national banks. Many of the states have adopted the same measure. In those states, like Illinois, where double liability still exists, it constitutes a disadvantage for investors in bank stocks.

3. In a few states double liability attaches to the stock of insurance companies.

Special liability for debts due laborers for wages is found in a few states. To determine the amount of liability for a given corporation's stockholders and the conditions under which the liability would arise, the laws of the state of incorporation should be examined. Stockholders' liability is only significant when one is analyzing the statements of weak or insolvent corporations.

[8] The par value is ordinarily fully paid in, in order that no further liability may attach to the ownership of the stock, as stated in the second succeeding paragraph. The exceptional practice is illustrated in the balance sheets of the Federal Reserve banks, the stock of which is but 50 per cent paid in. It is improbable that the balance will ever be called, and the published statements show only the actual amount paid in.

Value of stock. The balance sheet of a corporation issuing stock with a par value of a half million dollars for undeveloped oil properties would appear as follows:

MIRAGE OIL WELLS CORPORATION

BALANCE SHEET, AUGUST 31, 1941

Assets		*Liabilities*	
Oil Properties	$500,000	Capital Stock	$500,000

All that can be told from the above is the total par value of the stock issued. The actual value of the would-be oil wells is a matter which will be more adequately determined by the results obtained from drilling. If there are 50,000 shares outstanding, that is, a par value of $10 for each of these shares, the actual value of one share of stock is one fifty-thousandth part of the total value of the stockholders' interest—an amount which may be nothing or many times par.

When financial statements are filed with the Securities and Exchange Commission in connection with the registration of new securities, disclosure is required as to the basis for the valuation of assets. Such information is essential for the interpretation of the balance sheet, unless it is known that the bulk of the assets have been acquired for cash through ordinary buying channels.

Paid-in surplus. Occasionally, a corporation sells its stock for more than par, in which case the excess is shown as surplus. Banking corporations frequently do this in order to provide a buffer against possible losses in the early part of their career which would "impair capital." [9] Capital is said to be impaired when the owners' interest is reduced to less than the par value of the outstanding stock. The following statements illustrate how paid-in surplus is used to reduce the probability of capital impairment.

FIRST NATIONAL BANK OF ALBANY

STATEMENT OF RESOURCES AND LIABILITIES

December 31, 1940

Assets		*Liabilities*	
Cash	$220,000	Capital Stock	$200,000
		Surplus	20,000
	$220,000		$220,000

[9] Note that *capital* is used here in the "legal" sense. (See page 24, footnote 6.) In the "accounting" sense of net worth, the "capital" is impaired as soon as losses reduce net worth below the owners' original investment.

In the above balance sheet, two thousand shares with a par value of $100 each have been sold for $110. If there were a net loss of $5,000 during the ensuing year, decreasing the assets by so much, the surplus on the opposite side would necessarily be reduced by an equal amount to show the loss in the interest of the stockholders. There would still remain, however, a surplus of $15,000. If the same amount of cash had been subscribed for stock sold at par, the capital stock would have stood at $220,000 at the outset and there would have been no surplus. Then had a $5,000 loss occurred, there would have had to appear that disagreeable title "Deficit" in the balance sheet at the end of the year, thus:

FIRST NATIONAL BANK OF ALBANY

STATEMENT OF RESOURCES AND LIABILITIES

December 31, 1941

Assets and Deficit		*Liabilities*	
Various Assets	$215,000	Capital Stock	$220,000
Deficit	5,000		
	$220,000		$220,000

The appearance of "Deficit" is due to the rule which keeps capital stock in the balance sheet at par value. Additions to the interest of the stockholders are shown under the heading of "Surplus." If the equity falls below par value, a deficit item must be added to the asset side to preserve the equality between the two sides.

In either case, the corporation has lost $5,000, but, for reasons largely psychological, it is undesirable to show the word *deficit*. The majority of people find a golden suggestiveness about the word *surplus* and a sinister warning in the word *deficit*. Neither term has any essential relation to the strength or weakness of the corporation.

Stock without par value. The misleading nature of par value in the case of common stocks and the fact that it sets a minimum price for which stock must be sold regardless of market conditions led to a wide use of common stock with no par value. Stock without par value puts the investor on his guard and makes him feel it necessary to inquire further into the real value of the security offered. There is a strong possibility that the financially unskillful may feel that par somehow constitutes "true" value, confusing the situation with that of bonds, where market value

tends to move towards par, which is the face amount of principal, as maturity approaches.

Under the New York law, a corporation may sell such of its shares as are without par value for such consideration as (1) its charter prescribes; or (2) at their fair market value, the judgment of the board of directors as to such market value being conclusive in the absence of fraud; or (3) a price fixed by consent of those owning a majority of the shares entitled to vote at a duly assembled stockholders' meeting. All shares without par value so issued are deemed fully paid and nonassessable.

For purposes of taxation and regulation, the state sometimes requires a certain "declared value," to take the place of the discarded par value.[10] The growing tendency is to require the corporation to state clearly the amounts contributed by the stockholders so that they can be distinguished from any surplus arising from earnings. If the Orange Grocery Store were incorporated and two hundred shares issued, each with a declared value of $5, its balance sheet would read as follows:

ORANGE GROCERY STORE, INC.

BALANCE SHEET, DECEMBER 31, 1941

Assets		*Liabilities*	
Cash	$ 1,200	Accounts Payable	$ 2,000
Accounts Receivable	2,500	Notes Payable	2,000
Merchandise	8,500	Mortgage Payable	8,000
Fixtures	500	Capital Stock (200 shares without par value, declared at $5 per share)	1,000
Land and Building	15,000	Capital Surplus	14,700
	$27,700		$27,700

Any surplus arising later from retained earnings might be designated as Earned Surplus or Profit and Loss Surplus.

The lessened emphasis upon par value in recent years and the

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[10] The balance sheet of the Allied Chemical and Dye Corporation states the interests of its stockholders on December 31, 1940, as:

Common Stock—2,401,288 Shares Without Par Value, Declared at $5 per Share	$ 12,006,440
Capital Surplus	101,037,235
Further Surplus	84,955,246

The Kennecott Copper Corporation, another company whose stock is without par value, shows on December 31, 1940:

Stated Capital (10,821,653 Shares of No Par Value Outstanding)	$ 53,199,636
Capital Surplus	190,914,923
Earned Surplus	109,567,007

taxation in some states of stock without par value as though it had a high par, such as $100 per share, has led some corporations to adopt a low or even a nominal par value and show a large capital surplus.[11]

Book value of stock. This discussion of par value has shown that in order to determine the value of the interest of the common stockholders the surplus should be added to the Capital Stock account; if a Deficit account exists, it should be subtracted from the Capital Stock account. In order to find the book value of the individual share, the total value of the stockholders' interest is divided by the number of outstanding shares. Surplus is sometimes to be found in the balance sheet under other titles, and then should be treated as though a part of ordinary surplus, in calculating book value. The title "Surplus" may be changed to "Undivided Profits," or "Loss and Gain Account"; or it may be disguised under the heading "Reserves," as described later in this chapter.

Preferred stock. Preferred stock is frequently issued in addition to the common stock, which has just been discussed.[12] It differs from common stock in having a claim to earnings prior to that of the common. It may also be preferred as to assets, in which case the holder receives, in the event of liquidation, the par value of his stock or some other stated amount after the creditors are satisfied and before any payment is made to the common stockholders. Preferred stock which makes no provision for a prior claim by its owner upon the assets is not preferred as to assets. Where provision is made, it may reasonably be balanced

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[11] The Glenn L. Martin Company showed the following low par value stock in its balance sheet for December 31, 1940:

Capital Stock outstanding ($1 par value each)	$ 1,097,323
Capital Surplus	11,427,835
Earned Surplus	8,549,856

[12] Debenture stock, found on rare occasions in this country, is actually preferred stock. The term "debenture" is really misused when so applied to stock, for in its derivative sense the term means "owing," and should be applied only to a liability. An example is the former E. I. duPont de Nemours Company 6% debenture stock. In English practice, debenture stock does not mean shares of stock, but a debt—an absolute obligation to pay principal and interest at fixed times. It may be secured or unsecured. Thus, the Dunlop Rubber Company, Ltd., has an issue of 4 per cent debenture stock, secured by a mortgage upon certain land, buildings, and equipment, and a floating charge upon the remaining assets. In general, Canadian financial practice resembles our own, but the Canadian Pacific Railway Company has perpetual 4 per cent consolidated debenture stock which is a first charge on the entire system except for minor underlying debt.

by the right of the common stockholders to take all of the assets after the preferred stockholders have received back their investment at par. In order to value the interest of the common stockholders, the nature of the preference that is given to the preferred stockholders must be known.

Preferred stock may be cumulative or noncumulative. If it is cumulative and the agreed dividend is not paid, the dividends that are passed must be paid before any dividend can be paid to the common stockholders. The dividends on a noncumulative share are lost when the company fails to declare them at the customary time. Preferred stock may also be participating or nonparticipating, although the former type is relatively uncommon. Participating shares receive an extra dividend in addition to the regular return under certain conditions, as, for example, when the dividend rate on the common rises beyond a stated rate.

Sometimes preferred dividends are said to be "guaranteed" by the issuing corporation, but such an arrangement is no more binding than the cumulative clause, since the guarantor is the issuing corporation. Such stock should not be confused with guaranteed stocks, which carry a guarantee of dividends by some outside guarantor, such as a parent corporation, and so are a credit obligation of the guarantor.[13]

Reserves. The reserves constitute a class of items which the average reader of the balance sheet finds more than ordinarily difficult to interpret. They may be so placed on the balance sheet that their interpretation is made easy; however, they are often placed between the debts and the statement of the net worth so that their nature is made to appear indeterminate. Reserves might be defined, somewhat loosely, as amounts set aside from the Surplus account for specific purposes. A more definite, as well as a more accurate, conception of the nature of these accounts may be gained from an examination of a statement before and after their introduction.

Apparently, the only account affected is the surplus. This point gives rise to the incorrect notion that reserves are always surplus. It is improper to relate them as a class to surplus, except to note that their omission would increase surplus, a result which could likewise be obtained by a failure to include all liabilities or by overstating certain assets.

[13] The bonds and stocks of a subsidiary company are often guaranteed by the parent company to improve their investment standing. Armour & Company (Ill.), the parent company, guarantees the dividends of the Armour & Company (Del.) 7 per cent preferred stock.

ILLINOIS REFINING COMPANY

BALANCE SHEET, JUNE 30, 1941

Assets		*Liabilities*	
Property	$12,500,000	Accounts Payable	$ 350,000
Investments	1,400,000	Accrued Expenses	20,000
Sinking Fund	50,000	Bonds	2,000,000
Cash	350,000	Capital Stock	7,000,000
Accounts Receivable	550,000	Surplus	7,730,000
Inventories	2,250,000		
	$17,100,000		$17,100,000

ILLINOIS REFINING COMPANY

BALANCE SHEET, JUNE 30, 1941

Assets		*Liabilities*	
Property	$12,500,000	Accounts Payable	$ 350,000
Investments	1,400,000	Accrued Expenses	20,000
Sinking Fund	50,000	Bonds	2,000,000
Cash	350,000	Reserve for Depreciation	4,300,000
Accounts Receivable	550,000	Reserve for Taxes	130,000
Inventories	2,250,000	Reserve for Contingencies	350,000
		Capital Stock	7,000,000
		Surplus	2,950,000
	$17,100,000		$17,100,000

Their effect is to reduce the apparent interest of the owners of the business. In the first statement, this was $14,730,000 (Capital Stock, $7,000,000, plus Surplus, $7,730,000), and in the second, only $9,950,000. If there were 70,000 shares, with a par value of $100 per share, then the surplus per share was reduced from $110 in the first balance sheet to $42 in the second. Since dividends may be declared only out of surplus, the reserves do reduce possible dividend declarations. The actual declaration is, of course, dependent on other factors as well, but the presence of surplus is essential.

Classification of reserves. For the proper understanding of reserves, it is necessary to classify them according to their relation to the other three classes of accounts in the balance sheet. They fall into three groups, although the analyst will find borderline cases which will be difficult to classify. The groups are:

1. Reserves that offset assets.
2. Reserves that are actual liabilities.
3. Reserves that are surplus.

Reserves offsetting assets. The reserve for depreciation of $4,300,000 is actually an offset to the Property account shown on the opposite side at $12,500,000. Buildings, equipment, machinery, furniture, and almost all the physical properties of a business form an endless procession of productive tools headed for the junk heap. Each year their life shortens, and the time approaches for their replacement. Where this truth is recognized, it is the usual custom to reduce the asset value at each accounting period by the proportionate share which that period bears to the whole life of the asset. These fixed assets (sometimes called "capital" assets) are being consumed by the production processes, and each year should show its share of the loss.

The method of showing the reserve for depreciation on the liability side of the balance sheet is confusing to many, and so it is considered preferable, for the purposes of analysis, to show it as a subtraction from the asset itself, thus:

Property	$12,500,000	
Less Reserve for Depreciation	4,300,000	
		$8,200,000

This treatment helps to show the true nature of the Reserve account by coupling it with the value of the assets that are wearing out.[14] By using the reserve as a subtraction from the asset instead of as a liability, the total of the asset column is reduced to the actual valuation of the assets, eliminating the corresponding inflation on the liability side. The situation would be clearer to many if the term "Allowance for Depreciation" were used instead of "Reserve."

The most condensed form of presentation shows merely the net valuation of the property—in this case, $8,200,000. The objection to this method is that it fails to show the original cost of the properties and prevents the reader from finding out the total allowed for depreciation. Both cost and reserve are useful figures, and both are more important to the analyst than the blind figure representing the net present book value of the asset. (The net

[14] Wall and Duning suggest the "capital strain" argument for placing the depreciation reserve between the total debt and the net worth: that the potential strain which the replacement burden may place on the business is then located so as to call attention to the potential debt or capital required, as the period of application approaches. (Wall, A., and Duning, R. W., *Ratio Analysis of Financial Statements*, New York: Harper and Brothers, 1928, pp. 80–81.) The argument seems to understress the "valuation" character of this reserve. Replacement is possible but not inevitable.

figure is called the "book value" of the asset.) Where only the net value is given, an idea may be gained as to the amounts of these allowances from the "statement of profit and loss," to be studied later.

Reserves of this first class are known to the accountant as valuation accounts, since when read with the corresponding asset they give the net valuation set upon the property. Other reserves of this class are those for obsolescence, for doubtful accounts, and for discounts to customers. Obsolescence is the premature loss of value in equipment that becomes out of date before it wears out, because of inventions and improvement in design of later models. It is taken into account only by progressive enterprises that realize the need for taking advantage of the constant progress of invention and are willing to scrap machinery before it is worn out. Since the life of a machine is shortened by this practice, the asset must be reduced in value more rapidly than ordinary depreciation would require, and the extraordinary deduction is entitled "Reserve for Obsolescence." Reserves for doubtful accounts and for discounts are an offset to the notes and accounts of customers, and indicate the management's estimate of the reduction in the value of those assets which is likely to occur in their collection.

Liability reserves. The Reserve for Taxes of $130,000 in the balance sheet of the Illinois Refining Company is an example of a liability covered by the title "Reserve." In this case, it is not only a true liability, but a debt that will mature in a very short period. In analysis, such an item should be added to the other debts. The use of the title "Reserve for Taxes" instead of "Taxes Accrued" may be justified by the uncertainty which sometimes exists as to their exact amount. Because of tardy legislation and a consequent late distribution of forms and regulations, corporations have been unable in some years to calculate their liability for the Federal income tax until some weeks after the end of the calendar year. Similarly, the assessment of local taxes may be faulty and subject to reduction upon appeal.

The liability reserve may be employed whenever a certain obligation is incurred the amount of which is indeterminate. Other liability reserves are those for insurance and pensions. When a corporation agrees to grant a pension to employees, it is in effect making an addition to the wage compensation. The burden for this should be borne by the period that receives the services of the employees. It is a debt, and should not be permitted to fall

as an expense in the later period when retirement has occurred and the employee is no longer producing. To neglect this point is to permit a balance sheet overstating surplus and understating debts. Corporate officials may, however, instead of understating the accumulating liability, overstate the amount, so that surplus is concealed under the Reserve account.

Surplus reserves. A third type of reserve is possibly illustrated by the Reserve for Contingencies of $350,000. If the contingency is definitely ascertainable, like the taxes, then it is another case of liability. If, however, the surplus was reduced by $350,000 on the general principle that some wholly unforeseen happening might arise, the reduction of surplus was arbitrary. All surplus might disappear through contingencies, and, in theory at least, one purpose of surplus is to act as a buffer in case of misfortunes and lean years. The phrase "reserve for contingencies" is so vague that it would be the part of wisdom to inquire of the officers as to its purpose whenever the amount is large enough to warrant attention. Whenever the nature of the "contingency" cannot be ascertained by the reader of the balance sheet, the customary "conservative" treatment is to exclude the reserve from net worth and treat it as a liability. In most cases, information is available that the contingencies provided for are uncertain and the amounts are then treated as a part of Surplus. A properly complete analysis should call attention to the method of handling any such doubtful items if they are of any importance.

A surplus reserve reduces the Surplus account and serves the purpose of restraining the hopes of those stockholders who regard surplus as a source of dividend distributions. Such a course is proper whenever it is necessary to conserve cash, which is the asset usually required to make a distribution.

The necessity of conserving the cash resources of the corporation is the only valid reason for these surplus reserves. Reserves that are unmistakably in this third class are the reserves for working capital, for improvements, for dividend equalization, and for sinking fund. The name indicates in each case the reason of the directors for conserving the corporation's cash resources.[15]

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[15] In recent years (1933–1940) International Harvester Company has shown in addition to the conventional allowances for depreciation and bad debts such various reserves as for (1) special maintenance, (2) collection expenses, (3) foreign losses and exchange fluctuations, (4) development and extensions, (5) contingent, and (6) fire insurance. The first three are apparently asset valuation reserves

Reserve for sinking fund. The utility of the surplus reserve may be illustrated by a study of the "reserve for sinking fund." The facts assumed, while much simpler than would exist in practice, will serve our purpose of showing how the reserve is not wholly superfluous, as some think. In the hypothetical case, a corporation made during 1941 a net profit of $100,000, which is reflected in the increase of Cash and Surplus in the second balance sheet.

BALANCE SHEET

DECEMBER, 31, 1940

Cash	$ 50,000	Bonds	$1,000,000
Other Assets	1,950,000	Capital Stock	1,000,000
	$2,000,000		$2,000,000

DECEMBER, 31, 1941

Cash	$ 150,000	Bonds	$1,000,000
Other Assets	1,950,000	Capital Stock	1,000,000
		Surplus	100,000
	$2,100,000		$2,100,000

It is desired to retire one-tenth of the bonded debt yearly, but the purchase of the bonds would reduce their total to $900,000 and bring the cash back to $50,000. Since a $50,000 balance is too small a sum to permit a dividend declaration in cash, it is decided to set up a reserve, thus making the surplus unable to support an unwise dividend. The revised balance sheet, including this reserve but made up before the bonds have been presented for payment and cancellation, might read:

DECEMBER, 31, 1941

Cash	$ 150,000	Bonds	$1,000,000
Other Assets	1,950,000	Capital Stock	1,000,000
		Reserve for Sinking Fund	100,000
	$2,100,000		$2,100,000

although it appears that the last may prove to be surplus reserve in part since all realized losses have been charged off as rapidly as they became known. The remaining three reserves are in the nature of surplus although some analysts might prefer to exclude the last from net worth on the grounds that if accurately set up it will tend to be used up by fire losses which are likely to fluctuate from year to year. Actually, this reserve has shown slow but regular growth in recent years save in 1934 when $5,000,000 was transferred to reserve for losses on receivables.

Funds and reserves. In our discussion of reserves, it is clear that we have used the term in an entirely different way from that in which it is popularly used. A reserve is popularly thought of as a sum set aside for some special purpose. When a sum is so set aside, the accountant calls it not a "reserve" but a "fund." [16] In the foregoing condensed balance sheet the cash might have been reduced by $100,000, if that sum had been set aside definitely for the sinking fund. This amount would then appear as the asset "Cash in Sinking Fund," or merely "Sinking Fund." In the balance sheet of the Illinois Refining Company the "Sinking Fund" account indicates that there was an amount set aside, probably in connection with some plan for the retirement of its bonded debt. This fund might be in either cash or investment securities. If the fund were as great as the reserve for sinking fund on the opposite side of the balance sheet, it would be said that the reserve was a funded reserve.

If complete provision is to be made for contingencies, the board of directors will not only set up a contingency reserve, but it will also invest a suitable amount in liquid securities which will provide ready funds for the emergency. Generally, no such fund is provided. The management argues that their capital will be more profitably employed in the ordinary course of the business than if set aside in a special fund. Under such circumstances, the directors must hope that in the event of the contingency, the remaining assets will provide cash or be an adequate basis for loans or a sale of securities sufficient to meet the occasion. Sometimes the contingency might be of such a nature that its happening would not give rise to a need for cash. The hazard might lie in a possible loss in the market value of an asset which would not impair its usefulness in the operation of the business.

The balance sheet on the next page shows how the statement appears when the reserve is funded.

If the management regarded the fund as unnecessary or undesirable, it might, instead of investing the $10,000,000 in a special fund, use the amount for additions to plant. If the latter course were adopted, the Reserve account would still be available to

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[16] Sometimes a balance sheet fails to follow the current accounting usage and employs the word *fund* for a liability, usually to denote a reserve account.

An unusual case of a special fund is the Plant Improvement and Replacement Fund first set up in 1936 by Libbey-Owens-Ford Glass Company. It was invested in cash and short-term Governments. Out of that fund came the first "Pilkington flow process" glass producing plant at Ottawa in 1938.

AMERICAN RUBBER COMPANY

CONDENSED BALANCE SHEET

Assets		*Liabilities*	
Cash	$ 600,000	Accounts Payable	$ 5,000,000
Accounts and Notes Receivable	12,000,000	Notes Payable	2,000,000
Inventories	30,000,000	Reserve for Contingencies	10,000,000
Contingency Fund—Marketable Securities	10,000,000	Preferred Stock	30,000,000
Plant and Equipment	70,000,000	Common Stock	50,000,000
		Surplus	31,000,000
	$128,000,000		$128,000,000

absorb any loss up to $10,000,000, which would otherwise reduce surplus; but the cash necessary to meet the emergency would have to be obtained by financing. Ordinarily, a concern in the excellent condition shown above would have no difficulty in such a situation, although unusual conditions have been known to give trouble even to such apparently well-intrenched corporations.

Conclusion. This chapter has been a brief review of the nature and manner of accounting for the three classes of items in the balance sheet: the assets, or properties; the liabilities, or debts; and the net worth, or balance of value remaining for the owners. The reserves, although sometimes called a fourth class, should fall within and be allocated among the three divisions according to their nature.

Before a balance sheet can be interpreted, the accounting conventions, such as the lower-of-cost-or-market valuation of inventory and the cost-less-depreciation figure for fixed assets, must be known by the reader. Those unfamiliar with the difficulties of accounting have from time to time suggested radical "reforms" that would require the reporting of "true current values" as of the date of the balance sheet. Aside from the uncertainty of such a value concept, such proposals generally overlook the confusion, the cost, and the chicanery that would result from the adoption of their innovations. Rules have no sacredness, but nevertheless they are the product of experience and, even though like most practical compromises they fall short of perfection, serve a useful purpose. The better the working rules of accounting construction are understood—and only the highpoints can be reviewed in this and the next chapters—the more can be gleaned from the analysis of financial statements.

CHAPTER III

The Construction of the Profit and Loss Statement

Function of the profit and loss statement. The balance sheet provides a single picture of the financial status of a business on a certain date. Since changes are taking place constantly, a summary of the operations which occur between the construction of the periodic balance sheets is necessary. All changes may be said to be significant—for example, the conversion of cash into inventory, and the substitution of a long-term bond issue for bank indebtedness—but interest centers around those transactions in which the business suffers a loss or realizes a gain. The profit and loss statement singles out and summarizes those transactions in which there is a loss or gain for the owners of the business. Such a statement of the operations of an enterprise provides: (1) a basis for forecasting the future, for creditors, investors, and speculators; and (2) a means for revealing to the management the sources of profit and the causes of loss.

Cash is not profits. A common error is an undue emphasis on the asset Cash. The bank account is frequently mistaken for a thermometer of prosperity. There are any number of possible combinations in which this may not be true. It is frequently the case that an expanding business with mounting profits has a bank balance much too small for its needs, while the cash balance may fail to reveal a declining business. The stock may be growing smaller and shopworn, or the fixed investment in buildings and fixtures may be deteriorating, while cash remains fairly constant or fails to increase rapidly enough to offset the loss of these other assets. Even very large cash balances should not be regarded as a sign of prosperity.

Fiscal period. The statement of profit and loss is the condensed and classified record of the changes in the owners' interest in the business. Since the balance sheet is ordinarily published

annually, the statement of profit and loss usually covers the activities for the intervening period of a year. Ordinarily this period coincides with the calendar year. Sometimes it is more convenient to close the books on some other date than December 31, in which case the fiscal year is distinct from the calendar year. A usual reason for the adoption of a special year is the opportunity which it offers for taking the inventory in an inactive season when the stock of goods is normally very low. Reports of profit and loss may be published for shorter periods than a year where the figures possess sufficient public interest, as in the case of the railroads, or where the management appreciates the utility of more complete and up-to-the-minute information.

Titles. The titles "Profit and Loss Statement" and "Income Account" are most frequently given to this report of changes in the owners' interest. Other titles, such as the following, are often used, however, and there is no uniformity of practice.

1. Profit and Loss Account.
2. Income Account, or Statement, or Sheet.
3. Statement of Income, Profit and Loss.
4. Statement of Income and Expense.
5. Statement of Revenue and Expense.
6. Revenue Statement.
7. Statement of Earnings.
8. Statement of Operations.

Relation to balance sheet. The chief difficulty of the average reader is to understand the relationship between the profit and loss statement and the balance sheet. The two are interrelated, and not independent; the former states the nature of the transactions which change the net worth as reported in the balance sheets at the beginning and the end of the period in which the transactions took place. A comparison of the balance sheets at the beginning and the end of the period will be of use in filling out the "story" of the operations that is told in the statement of loss and gain.

The interrelation of the two statements is best shown by a study of a simplified balance sheet and a profit and loss statement for the year following it such as appear on this page.

For the sake of simplicity, it may be imagined that these transactions were made on a cash basis, where that was possible. Before the sales were made, it would be necessary to assume production. These outlays (line 2) would be for material, labor,

and factory expense, and, assuming a cash basis, would affect only the asset side. The asset Cash would be reduced by $19,000,000 and the inventories increased by that amount. When the sales are made (line 1), however, the transaction is more com-

FLYING BOAT MANUFACTURING COMPANY

GENERAL BALANCE SHEET, DECEMBER 31, 1940

Cash	$ 600,000	Accounts Payable	$ 1,500,000
Marketable Securities	2,200,000	Reserve for Depreciation	2,000,000
Notes and Accounts Receivable	5,200,000	Contingency Reserve	200,000
Inventories	8,000,000	Preferred Stock	16,000,000
Plant and Equipment	12,000,000	Common Stock	26,000,000
Patents and Goodwill	19,600,000	Profit and Loss Surplus	3,200,000
Investments	1,300,000		
	$48,900,000		$48,900,000

STATEMENT OF PROFIT AND LOSS

For the Year Ended December 31, 1941

1. Sales Billed	$26,000,000
2. Production Costs	19,000,000
3. Manufacturing Profit	$ 7,000,000
4. Selling and Administrative Expenses	1,900,000
5. Operating Profit	$ 5,100,000
6. Other Income	200,000
7. Gross Income	$ 5,300,000
8. Reserved for Federal Taxes	1,300,000
9. Reserved for Contingencies	200,000
10. Net Income	$ 3,800,000
11. Preferred Dividends	800,000
12. Common Dividends	1,300,000
13. Surplus for the Year	$ 1,700,000
14. Previous Surplus	3,200,000
15. Total Surplus, Dec. 31, 1941	$ 4,900,000

plex, since, while inventory is reduced, the total assets are increased by $7,000,000. The change necessary on the liability side to balance this increase in assets is an increase of $7,000,000 in the Profit and Loss Surplus, which records all the changes in the stockholders' interest.

Item 4 represents a cash outlay for services which are required in the conduct of the business. This loss of cash from the assets is offset on the liability side by a reduction of surplus. Item 6,

probably representing the income from the securities, has just the opposite effect; that is, it increases cash and surplus.

Reserves are accounting devices and not directly related to cash. The setting up of reserves (lines 8 and 9) would leave the assets unchanged, while the surplus would be decreased by $1,500,000 and the reserves for taxes and the contingency reserve would show an increase equal to that amount. It will be necessary to add a Reserve for Taxes account to the list of liabilities. During the following year, when the actual cash payment is made, the decrease in the asset Cash will be offset by a reduction in the reserve for taxes, and not in surplus. The inclusion of this item in the profit and loss statement and the consequent change in the balance sheet work justice between the two years—1941, the year under consideration, and 1942, the ensuing year. The surplus will not have to bear the burden of taxes which are to be paid in 1942 but which were incurred in 1941.

The tax is really levied against the profits of 1941, and is a liability as of December 31, 1941. Failure to show this would overstate the net income in the profit and loss statement for the period and the surplus in the balance sheet at the end of the year. On the other hand, the omission would have made the tax appear as one of the expenses in the profit and loss of the second year, when it was paid, and so would have caused an understatement of the profitableness of that period.

From the resulting Net Income (10) of $3,800,000 a dividend of 5 per cent was paid on both the preferred and the common stock (11 and 12), which would reduce the asset Cash and the Profit and Loss Surplus.

If these changes which have just been enumerated are introduced into the balance sheet of December 31, 1940, shown above, we have the balance sheet for the end of the year 1941. It would show changes in cash, the reserves, and surplus only, and would appear as shown in the statement on the next page.

The improbability of the following balance sheet lies in the fact that a business with such a net profit would probably be expanding. Expansion implies that it would have more customers and a larger sum outstanding in accounts. It would be likely that the inventory would also increase, and possibly the plant would be added to. These factors would tend to reduce cash by a corresponding amount. The tendency to reduce cash would be offset by the use of the concern's credit, with the result that the increase in the assets, such as inventory, would result, not in a

corresponding reduction of the asset Cash but in an increase of the liability Accounts Payable on the opposite side of the sheet.

FLYING BOAT MANUFACTURING COMPANY

GENERAL BALANCE SHEET, DECEMBER 31, 1941

Assets		*Liabilities*	
Cash	$ 3,800,000	Accounts Payable	$ 1,500,000
Securities	2,200,000	Reserve for Depreciation	2,000,000
Notes and Accounts Receivable	5,200,000	Reserve for Taxes	1,300,000
Inventories	8,000,000	Contingency Reserve	400,000
Plant and Equipment	12,000,000	Preferred Stock	16,000,000
Patents and Goodwill	19,600,000	Common Stock	26,000,000
Investments	1,300,000	Profit and Loss Surplus	4,900,000
	$52,100,000		$52,100,000

Assets and surplus. It may be well to emphasize here that expenses or losses need not necessarily affect the cash at all. A loss of any of the other assets will produce the same effect on surplus. Securities may become worthless, customers may become bankrupt, a plant may be destroyed, and patents expire with time. When such facts are recorded on the books, thereby reducing the proper asset account, the profit and loss statement will show the loss in that year, and the surplus in the balance sheet at the close of the year will be reduced.

Liabilities, reserves, and surplus. In a corresponding manner, the incurring of liabilities or the increasing of reserves may cut down surplus. If the corporation is made the defendant in a patent suit or an action for damages and loses the case, a debt is incurred. Since the assets are unchanged, the increased liabilities reduce the interest of the stockholders, and a reduction in surplus appears.

An example of the effect of increasing reserves is illustrated in the two balance sheets and the connecting profit and loss statement shown above. The reserves showing an increase are for taxes and contingencies. It is also probable that the reserve for depreciation should have been increased. Loss from depreciation is not always shown as a separate expense in the profit and loss statement but is sometimes included in the production costs if the depreciating asset is employed in the factory.

The profit and loss statement must not be associated with any one asset or liability, but must always be regarded as the explanation of the year's changes in surplus. In this instance, the surplus was added to by manufacturing profits of $7,000,000 and

other income of $200,000, and was reduced by operating expenses of $1,900,000, allowances for taxes and contingencies of $1,500,000, and dividends to stockholders of $2,100,000.

This recital brings out the distinction between a statement of revenue and expense and a statement of receipts and expenditures —a distinction which is not clear to many. The former recapitulates changes in surplus; the latter, changes in cash. "Revenue" or "income" refers to amounts actually earned during the period of the report, regardless of the time or the form of the payment, and "expense" to any loss occurring within the period, without regard to the amount or time of the cash expenditures or disbursements.

The statement of cash receipts and expenditures is now regarded as inadequate for the practical purposes of business. About the only organizations of importance that adhere generally to its use are institutions, such as churches and charitable societies, and governmental units. Even among these, we find a growing use of the commercial methods. While the employment of the balance sheet and the revenue statement by such organizations is somewhat unusual, doubtless the successful experience of some of the larger charities and progressive municipalities in this direction will have a strong effect. The effects of the departure from a "cash basis" to one which gives recognition to the timing of the profit- or loss-making event rather than to the transfer of cash are illustrated in the following discussion of accruals.

Accrued income. Certain obligations accumulate from day to day to be settled on periodical occasions. An accrual is that portion of the obligation which has accumulated at the date of the balance sheet, and it is placed in that statement for the purpose of showing the condition of affairs more accurately. It may be an asset or a liability. If a firm owns a bond paying interest semiannually, and a balance sheet is constructed three months after an interest date, the asset "Accrued Interest Income" should appear, for there is three months' uncollected income which has not matured but which has been earned. If the bond were sold, the accrual would be calculated and added to the price of the bond. On the other hand, from the standpoint of the concern which owes the bond there is an accrued interest liability for the three months' interest.

Accruals are of chief importance in the studies of earnings. In the balance sheet they appear of minor nature; but the differ-

ence they may make in the correct calculation of earnings is considerable. In the case of the above bond, the omitted income was for three months—a fourth of the total interest for the year.

In the following example, the percentage change in assets is small; in the net income, considerable. If an investor bought some real estate on July 1 and collected his monthly rental on the first of each following month, at the end of the year he would have collected but five-sixths of the annual income the property had earned for him. If a monthly rental of $500 per month is assumed, the statements might appear about as follows:

BALANCE SHEET, DECEMBER 31, 1940

(*a*) Cash Basis.

Assets	
Cash	$ 2,000
Real Estate	60,000
	$62,000
Liabilities	
Mortgage Payable	$10,000
Capital Stock	50,000
Surplus	2,000
	$62,000

(*b*) With Accruals.

Assets	
Cash	$ 2,000
Accrued Rents	500
Real Estate	60,000
	$62,500
Liabilities	
Mortgage Payable	$10,000
Capital Stock	50,000
Surplus	2,500
	$62,500

PROFIT AND LOSS STATEMENT

FOR THE SIX MONTHS ENDED DECEMBER 31, 1940

(*a*) Cash Basis.

Rental Income	$2,500
Operating Expenses	900
Net Income	$1,600

(*b*) With Accruals.

Rental Income	$3,000
Operating Expenses	900
Net Income	$2,100

Accrued expenses. Accrued expenses are similar in character but opposite in effect to accrued income, and consist of such items as interest accrued on notes payable and mortgages payable, wages accrued, and taxes accrued. An accrued expense is a liability similar to an account payable. By the introduction of accrued expenses into the liability side of the balance sheet, the surplus is reduced. As a consequence, the profit and loss statement, which explains the changes in the surplus, will show increased expenses for the period. This restatement of expenses is only fair, for a period's operations should not be permitted to

escape the burden of an expense by postponing its payment to the next accounting period.

The correct allocation of expense and income to the accounting period in which the expense was incurred or the income earned, regardless of when cash is affected, is the principle which characterizes the accrual basis of accounting as opposed to the cash basis. It is the method approved wherever accountants aid in the preparation of the financial report. To calculate income and expense on the cash basis is inaccurate. Those who are not disposed to perform the extra labor necessary to make these accruals, argue that these accruals about offset one another. The argument may be true on occasions, but is just as likely not to be true. What the analyst wants is not a rough guess, but the actual truth so far as is possible. In the field of business, good accounting practice always uses the accrual basis. The accounts of individuals and small businessmen are often kept on a "cash basis," however, because it is simpler.

Deferred income. The expression "accrual basis" implies the calculation not only of accrued income and expense, but also of deferred income and expense. Deferred income is income which is received before it has been earned, and deferred expense is an expense paid for before the service or article has been used.

The following condensed balance sheet of a commercial bank will illustrate the use of a deferred income item:

Resources		*Liabilities*	
Various Assets	$1,000,000	Various Liabilities	$ 700,000
		Unearned Discounts	5,000
		Capital Stock	100,000
		Surplus	195,000
	$1,000,000		$1,000,000

A bank that discounts its customer's note makes its charge for the use of the money in advance. A merchant, for example, takes his $10,000 sixty-day note to the bank. He discounts it at 6 per cent and receives $9,900 credit against which he can draw his checks. The bank has taken out its $100 discount for sixty days, but will have earned it with the passage of time only. For this reason, if the bank includes its $10,000 note among its assets at full face value without any qualification, it is counting its chickens before they are hatched, or speaking literally, counting its profits before they are earned. Such a treatment would inflate surplus. By placing the deferred income, "Unearned Dis-

counts," on the liability side, the surplus is reduced to the proper amount.

Unearned discount is a liability in the sense that the bank still owes its customer for the portion of service it will have to render up to the date the note comes due.[1] In a similar sense, the landlord owes his tenants for rentals received in advance; the publisher, for subscriptions received in advance; and the manufacturer, for advance payments on contract. These items all appear on the liability side, but possess a distinctive characteristic: unlike the ordinary debt, they are not liquidated by the payment of cash, but are paid in services or goods.

Deferred expenses. Deferred expenses are services or goods, ordinarily regarded as expenses, which have been paid for and at the date of the financial statement have not been wholly used or consumed. They are also called "prepaid" expenses. If on the last day of the year it is found that the insurance or rent has been paid for a part of the following year, it would be unfair to burden the expenses of the current year with this prepaid expense. For this reason, the portion of the expense which represents prepayment is not included in the expenses in the profit and loss statement. The net profit for the year is correspondingly larger than it would be on the cash basis. The prepayment constitutes a thing of value to the business and so is listed among the assets in the balance sheet.

A few expenses that are likely to be met in advance are insurance premiums, rent, postage, and office supplies, and prepaid discounts on borrowing. These items are of varying importance. In some cases it will be found that a very serious difference might arise from a failure to take them into account. Such would be the case with a surface mining enterprise in which considerable expense had been incurred to lay the ore bare. There would be no tangible equipment or structure which could be termed "assets proper," and yet to count the cost of removing this overburden as a current expense would be clearly unfair. Such expenditures constitute a charge to be deferred to the operations of the year in which the product is removed and sold.

Summary of accruals. The following outline summarizes the effects of the use of the accrual basis in the preparation of the

[1] From a financial or actuarial point of view, the unearned discount might more properly be regarded as a valuation account offsetting the loan asset, for the present value of the note at the date of the balance sheet is the face amount less this "liability."

financial statements as contrasted with the results from the use of the cash basis:

Item	*Effect on Profit and Loss for Period*	*Effect on Balance Sheet*
1. Accrued income	Increases profits.	(*a*) Listed as an asset. (*b*) Increases surplus.
2. Accrued expense	Decreases profits.	(*a*) Listed as a liability. (*b*) Reduces surplus.
3. Deferred income	Decreases profits.	(*a*) Listed as a liability. (*b*) Reduces surplus.
4. Deferred expense	Increases profits.	(*a*) Listed as an asset. (*b*) Increases surplus.

This discussion serves to show some of the technical complications incident to the preparation of a statement of business progress. It is much more than a report of cash received and disbursed. Every change that occurs in any of the assets or liabilities which affects the wealth of the owners must be accounted for.

Profit and loss divisions. The statement of profit and loss, as used commercially, is generally constructed in three chief sections. The first section should relate the earnings of the regular and most significant operations; the second, the effect of the incidental, but not unusual, operations; and the third, the extraordinary changes in surplus.

Operating section. The first division is usually known as the *operating* section. It states the operating income and operating expenses. The difference is called the *net operating profit* (or *loss*), or the *net income from operations.* If a railroad is under consideration, its operating section will have to do only with its sale of transportation service. A manufacturer's or merchant's operations will have to do with the purchase and sale of commodities.

The operating section of a mercantile concern might read as follows if it were condensed:

Net Sales		$100,000
Cost of Goods Sold		60,000
Gross Profit		$ 40,000
Selling Expenses	$20,000	
Administrative Expenses	10,000	30,000
Net Trading (or Operating) Profit		$ 10,000

The manufacturer would merely substitute "Production Costs of Goods Sold" where the merchant puts his "Cost of Goods

Sold." In popular treatment, "Gross Profit," or the difference between cost and sales price, is referred to as the "profits of the business." This usage is misleading, and the expression "profits of the business" should be applied only to the net profit.

Although the titles in the operating section vary, the form is essentially the same in all types of business. In the case of the railroad, the "sales" consists of freight revenue, passenger revenue, and miscellaneous revenue. From this are subtracted the costs of rendering the transportation service, consisting of transportation expenses, such as the wage bill, the cost of maintaining the roadbed, structures, and equipment, the cost of getting business through the traffic department, and similar costs.

Nonoperating section. After the operating section come incidental, though not always unimportant, transactions included in what is often referred to as the *nonoperating* section. The nonoperating income is otherwise spoken of as "Other Income" or "Additions to Income."

The most usual source of this incidental income is income from investments. If, however, the corporation were a holding or investment company organized primarily for the purpose of owning securities, the revenue from that source would cease to be incidental. In such a case, the income from investments would be operating income. The distinction between operating and nonoperating income is made for the sake of clearness in analysis, and the separation should always be done with an eye to its effect in that respect.

Nonoperating expenses consist of: (1) fixed charges, which, if included in operating expenses, would make the net operating profit useless as a test of operating efficiency; and (2) expenses incurred in securing nonoperating income. Of the nonoperating expenses, interest on borrowed funds is the chief. Some corporations may find it advantageous to raise money by means of bonds and stock, rather than by stock alone. In a comparison of the profit-making capacity of two enterprises, the interest charges will be found to differ with the plan of capitalization—a financial, and not an operating, factor. For this reason it is desirable to state interest charges separately when comparing the earnings statements of the two organizations with a view to determining their relative operating efficiency.

Sometimes taxes, because they are expense factors beyond the control of management, are treated as nonoperating expense. Other items that are less frequently found under this heading

are rent, cash discounts to customers, insurance, and royalties. It is usually convenient, however, to class these last-named items as operating expenses. In a given industry they are likely to be either uniformly present or uniformly absent, save possibly in the case of rent, so that their inclusion in operating expenses would not constitute a factor of error in comparing different industrial units. Since rent is typically for the use of real property, which would require a heavy investment and additional interest or dividend costs, it is most appropriately treated as a nonoperating expense like bond interest. In condensed statements issued to the investing public, where it is desired to show net earnings available for interest charges, and where it would be inconvenient to show a great many expenses under separate headings, the items are classed with the operating expenses.

Unusual and irregular gains and losses. After the net income from all ordinary sources has been stated, there are left the extraordinary or irregular items. A useful distinction is sometimes made in the classification of these irregularly occurring items on the basis of whether they are the result of events during the fiscal year or during prior years. Thus, a write-down of inventory from cost to a lower market value at the year-end would fall in the first class and be called a Profit and Loss item, but the discovery that taxes for a prior year were in excess of the amounts accrued would result in a Surplus charge. This differentiation accords with the practice of some accountants, who gather all balances entering into the Profit and Loss statement into a summarizing Profit and Loss account in the ledger but place adjustments that should have been reflected in the operations of prior years in the Surplus account. This treatment recognizes that Earned Surplus shows the accumulated earnings retained in the business from operations of previous years. The net balance of Profit and Loss is itself finally transferred to this Surplus account.

Some items are not easily classified. A gain or loss on the sale of fixed assets is generally placed in the Profit and Loss class because it is deemed to accrue at the time of sale. Actually, it may reflect gradual appreciation of a period of years or excessive depreciation allowances in previous years.[2] Published reports

[2] Some would even argue that gain or loss from fixed assets represent changes in the value of the permanent investment, or "principal," rather than "real income" and so should be shown in Capital Surplus instead of in Earned Surplus. This position could best be supported on economic grounds when it could be

may recite the items but leave their classification to the analyst. In any case, the reader must be prepared to classify the facts to suit the purpose for which he is making his study. If he is attempting to judge probable earnings for the coming year, he is likely to disregard all unusual items as nonrecurring over the short term; if he is studying long-run earning power, he will eliminate only items so unusual as to be unlikely to recur over the long-term. Thus, loss from decline in the value of inventory below cost and adjustments due to errors in the statement of prior years' income would be eliminated in the first case but retained in the second. Profit or loss from the sale of major fixed assets would be eliminated in both instances.

Surplus reconciliation. In whatever form these irregular gains and losses are reported, they should be fully enough stated so that the reader can understand the causes of all significant changes in both earned and capital surplus. Formerly, the practice was not uncommon of making some of these changes in the surplus account during the year with no explanation in the annual report. The amounts reported as surplus in the initial and final balance sheets for the period consequently could not be "reconciled." Now a separate concluding section of the statement may be devoted to the Surplus changes, including the addition of any balance of net profits and the deduction of any dividends paid. This section may be called Surplus changes or Surplus Reconciliation.

Importance of good construction. The outlined construction for the statement of profit and loss is highly necessary for any satisfactory analysis. An improper and confusing mixture of items often exists in published statements. Again, the difficulty of insufficient detail is met. The executive familiar with his needs can demand the proper information. In the competition for the use of capital, the investor also has a lever to force better-constructed and more complete information: he can always refuse to purchase the securities of corporations which refuse to publish adequate information. The Securities and Exchange Commission and the various stock exchange authorities have been successful in compelling generally adequate reports where

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shown that the gain or loss has arisen from a change in the general price level and the proceeds from the sale of the fixed assets were just sufficient to maintain the purchasing power of the original investment. Because of the depreciation factor and the complex nature of most fixed property, such reasoning is difficult to support with evidence in practice.

the securities have been issued subject to the regulation of the former or are listed for trading on the exchanges. Such issues now constitute most of the corporate securities held in considerable amounts by the public.[3]

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[3] The extent to which the management in the large American corporation has ceased to be the owner, as a result of the public distribution of securities, is well illustrated by A. A. Berle, Jr., and Gardiner C. Means in *The Modern Corporation and Private Property* (New York: Macmillan, 1933). A colorful and popular statement of the former inadequacies of some corporation reports is to be found in W. Z. Ripley's *Main Street and Wall Street* (Boston: Little, Brown, 1927), particularly in Chapter VI, "Stop, Look, Listen!"

CHAPTER IV

Analysis of Working Capital

Division of the balance sheet. The balance sheet falls naturally into two divisions: the first has to do with the assets which are constantly changing form and the short-term liabilities; the second includes the permanent assets, the fixed liabilities, and the net worth. The first section might be termed the circulating capital section, since at one time the funds of the business are tied up in a stock of goods, later the goods are sold and there is an account receivable substituted, and then the account is turned into cash, at which time the cycle is ready to begin again. The assets engaged in this short cycle are readily convertible into cash and are known as current, liquid, or quick assets. Current assets include all those assets which in the normal course of business return to the form of cash within a short period of time, ordinarily within less than a year, and such temporary investments as may be readily converted into cash upon need. The short-term, or current, liabilities on the opposing side of the balance sheet are closely related and include those debts which mature within a year. They indicate how a part of the current assets were obtained for the use of the business.

Working capital. Working capital is the excess of current assets over current liabilities.[1] If the latter were larger than the former, the difference would be called a "working capital deficit." If working capital is insufficient, a time will come when some new funds from more permanent sources will have to be brought into the business or the current obligations cannot be paid off without liquidating so much of the assets as to halt operations. When this condition threatens, through such causes as are dis-

[1] In popular usage, working capital is occasionally identified with total current assets, and in order to avoid possible confusion some prefer "*net* working capital" or "net current assets." However, the definition used here is that adopted by the *Financial Handbook* (Montgomery, R. H., ed. New York: Ronald Press Co., 2d ed., 1933.)

AN OUTLINE FOR A CORPORATE BALANCE SHEET

——— COMPANY

Balance Sheet, ———, 19—

Assets

Current Assets:

Cash		$
* Accounts Receivable	$	
* Trade Acceptances	$	
* Notes Receivable	$	
Total Receivables	$	
Less Bad Debt Reserve	$	
Inventories:		
Raw Material	$	
Partly Finished Goods	$	
Finished Goods	$	$
Marketable Securities		$
Miscellaneous Accounts and Notes Receivable (not from customers)		$
Accrued Income		$
Other Current Assets		$
Total Current Assets		$
Deferred Charges		$

Fixed Operating Assets:

Land	$	
Buildings	$	

Liabilities and Net Worth

Current Liabilities:

Accounts Payable	$	
† Notes Payable	$	
† Loans Payable	$	
Dividends Payable	$	
Accrued Expenses	$	
Reserves for Current Liabilities (e.g., for taxes)	$	
Other Current Liabilities	$	
Total Current Liabilities		$
Deferred or Unearned Income		$

Fixed Liabilities:

Funded Debt	$	
Reserves for Fixed Liabilities (e.g., for pensions)	$	
Other Fixed Liabilities	$	
Total Fixed Liabilities		$

Net Worth:

Preferred Stock Issued	$	
Less Treasury Stock	$	$

Machinery and Equipment	$				
Total	$				
Less Depreciation Reserve	$		$		
Patterns, Dies, etc.			$		
Total Fixed Operating Assets			$		
Fixed Nonoperating Assets:					
Investments in Affiliated Companies			$		
Other Stocks, Bonds, etc.			$		
Due from Subsidiaries			$		
Sinking Fund			$		
Other Fixed or Miscellaneous Assets			$		
Total Fixed Nonoperating Assets			$		
Intangible Assets:					
Patents and Copyrights			$		
Organization Expenses			$		
Goodwill and Other Intangible Assets			$		
Total Intangible Assets			$		
Total Assets			$		

Common Stock Issued	$		
Less Treasury Stock	$		$
Paid-in Surplus, or Other Capital (i.e., Unearned) Surplus		$	
‡ Earned Surplus (or Undivided Profits)		$	
Surplus Reserves (e.g., for improvements)		$	
Total Net Worth			$
Total Liabilities and Net Worth			$

The outline, while not all-inclusive, suggests an arrangement for the usual items appearing in published balance sheets. Where one is in a position to request information, see the forms suggested for credit men (Chapter X).

* Receivables or other assets pledged to creditors should be so stated in balance sheet or in a footnote.

† Secured loans should be separately stated or indicated in a footnote. When balance sheet is for creditors, it should show to whom notes are payable, as banks, trade creditors, or officers.

‡ A deficit in place of surplus would be stated preferably in this position as a deduction, although in practice it is often shown on the asset side.

Contingent liability for indorsements or other obligation may be stated in a footnote.

cussed later in this chapter, the management will, if it is able and has sufficient foresight, acquire the needed fixed funds, that is, funds from owners or long-term creditors. Technical insolvency exists whenever the business is unable to meet its obligations as they fall due. Actual insolvency, on the other hand, exists only when the assets are actually insufficient to satisfy the liabilities in full. Capital stock is not a liability, and so the presence of a profit and loss deficit, indicating that the capital has been impaired, does not constitute insolvency. Since assets usually shrink very greatly in a forced liquidation, it is always possible that a condition of merely technical insolvency may be the forerunner of actual insolvency.

No creditor wishes to invite the risks attendant upon liquidation, and so the working capital is of vital interest to him, particularly if he is within the class of current liability creditors. Current creditors expect payment from current assets, and consequently if the balance sheet is being examined by a banker, a merchant creditor, or any other grantor of short-term credit, this portion of the statement will be the center of attention.

Fixed assets and liabilities. The second division of the balance sheet, as stated, is made up of the fixed assets, the fixed liabilities, and the owners' interests. The last two items are sometimes called the "capital liabilities," although the latter is not an actual liability. They represent the sources of those assets which may be retained for a long term of years, or indefinitely. It is customary to classify a liability as fixed, instead of current, if it does not come due within a year.

This second section of the balance sheet is of primary concern to those whose interest in the enterprise, unlike that of the current creditors, is to be a continuing one. The class referred to is made up, in the first place, of those who stand outside the business, viewing it purely from the standpoint of investors, that is, the bondholders and stockholders; and, in the second place, of the management, which directs affairs from within and defines the financial policies.

The natural division of the balance sheet into two parts is shown in the chart given below. It is constructed on the assumption that the business is in the normal condition of having working capital, that is, an excess of current assets over current liabilities contributed by the investor.

Balance sheet form. Before studying the details of the balance sheet, it is desirable to picture it in a form which will aid

in the analysis. A standard form cannot be said to exist, and the limitations of printing space in an annual report make the matter of proper form more difficult. The lack of standardization makes some regular outline useful to the analyst in rearranging items. Where, as for a railroad or a public utility, the problem of working capital is of secondary importance and the

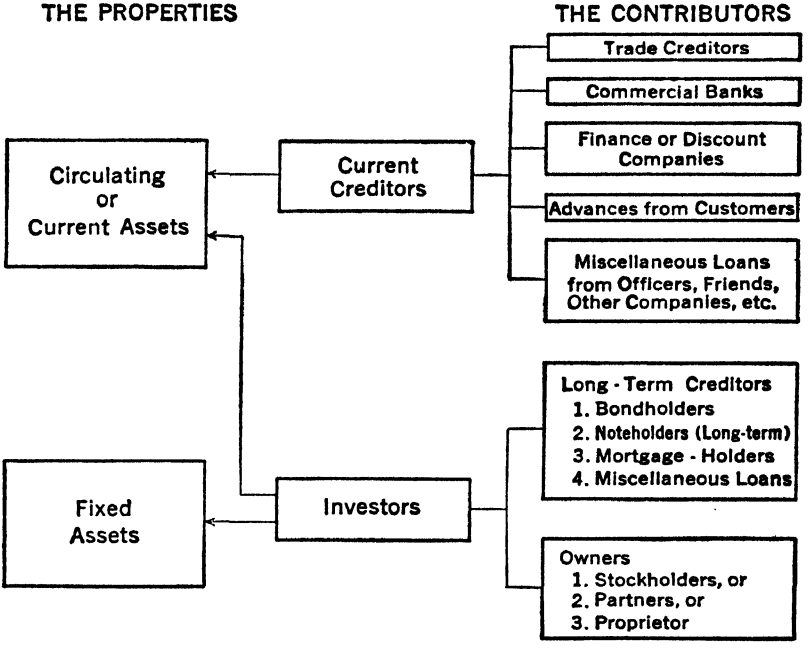

Fig. 1—The balance sheet as a chart, showing the division of interests in the properties.

fixed properties and liabilities are the chief concern, the latter may be placed first. In most cases, however, the current items are of first interest and should be placed first, as in the outline shown on pages 56 and 57.

Comparisons of working capital. In the suggested form, the current assets are placed opposite the current liabilities, making comparison easy. Where the purpose is to trace the changes in working capital from time to time, however, the figures for the years in question might be arranged in vertical columns. This form is illustrated in the following comparison (see following page).

COMPARISON OF WORKING CAPITAL

OF THE GOODYEAR TIRE AND RUBBER COMPANY
As of October 31

Current Assets: *	*1918*	*1919*	*1920*
Cash	$ 6,344,490	$10,395,242	$ 1,667,737
Accounts and Notes Receivable (net)	12,914,216	23,221,832	12,201,180
Inventory	30,507,967	35,566,779	41,167,758
U. S. Liberty Loan Bonds	1,466,950	2,285,800	.....
Total Current Assets	$51,233,623	$71,469,653	$55,036,675
Current Liabilities: †			
Accounts and Acceptances Payable	$ 5,687,407	$ 7,722,740	$22,444,745
Notes Payable	.....	9,500,000	18,534,924
Sundry Accounts Payable	1,432,046	2,766,022	.....
Unpaid Balance on Liberty Bonds	571,500	.....	.....
Accrued Dividends, 1st Pfd.	138,739	138,739	.....
Dividend Payable, 2d Pfd.	253,791	289,201	.....
Federal Taxes to 10/31/18 Unpaid	.....	1,368,782	.....
Total Current Liabilities	$ 8,083,483	$21,785,484	$40,979,669
Net Working Capital	$43,150,140	$49,684,169	$14,057,006

* In the above, the items "Other Securities Owned," "Notes from Officers and Employees for Stock," and "Advances to Agents and to Subsidiaries" are omitted.
† In 1918 and 1919, surplus was stated "subject to Federal taxes." The company was also subject to "Contingent Liability for Notes Receivable Discounted" amounting to $8,604,415 in 1918.

This statement taken from the balance sheets is significant if read merely in the light of current business events without any knowledge of the peculiar problems of the company. The reduction in cash and Governments between 1919 and 1920; the decrease in receivables, reflecting the decreased volume of business; the increase in inventory, despite a mark-down of almost $10,000,000 on October 31, 1920 to show loss in market values, indicating accumulation resulting from miscalculation of the course of business; and a swollen current debt all reveal the troubled state of affairs which resulted in a drastic financial reorganization shortly thereafter. This statement form brings out clearly the facts as to the changes in the company's working capital which made it impossible to pay off current indebtedness without new financing. Similar embarrassed cases among large industrial corporations were relatively rare in the crisis of a decade later when the decline in prices and sales volume was severe but spread over a longer period. A postwar reaction is a logical consequence of the inflation and the excessive forward buying that characterize a war period.

Need of working capital. Before passing to a discussion of the individual items in the working capital statement, it is well to point out the importance of adequate working capital.

The excess of current assets, contributed by the investing group, is essential to the permanency of the business, since it furnishes the means for the payment of the current obligations. It should also be sufficient, in proportion to the current liabilities, to provide against danger from a shrinkage in the value of current assets, particularly inventory. During periods of boom, the current assets and liabilities are rapidly increased, so that the proportion is less favorable. The danger of overexpanding on inadequate working capital may be illustrated as follows:

	1940	1941
Current Assets	$1,000,000	$2,000,000
Current Liabilities	400,000	1,400,000
Net Working Capital	$ 600,000	$ 600,000

The additional purchases of merchandise in 1941 increased current assets and current liabilities $1,000,000. The ratio of 10 to 4 is reduced to 10 to 7 (20:14). If the assets shrank in value one-third in 1940, there would still have remained more than the liabilities; but in 1941 the same proportionate loss of value in assets would have left the debts in excess.

	1940	1941
Current Assets	$666,666	$1,333,333
Current Liabilities	400,000	1,400,000
Working Capital	$266,666	.....
Working Capital Deficit	.....	$ 66,667

It is a rule of finance that as the volume of business increases for a given concern the amount of working capital must be increased (provided it was not redundant in the beginning) in order that the current liabilities may be provided with a proper margin of safety.

Inflation is very likely to have the same effect as that of genuine growth or expansion illustrated above. During a period of rising prices, "nominal" profits appear high even though "real" profits are low or lacking. The former exist whenever sales exceed costs and expenses in dollars, but the latter only when the concern has more purchasing power at the end of the fiscal pe-

riod than at the beginning. Whenever business fails to collect enough to replace stocks at the higher level of prices because of rigid rules of mark-up or competitive conditions, current debt will have to be expanded to carry even the same stock of goods at these higher prices. Inflation prior to the crash of 1920 undoubtedly explains why so many concerns were embarrassed with weak working capital positions at that time. Prior to 1929, the price level was relatively steady for a number of years, so that large industrials showed strength in the ensuing depression. Between 1929 and 1932, they actually maintained cash and increased current ratios in spite of falling prices and operating losses—a condition which might be expected as a logical converse of the above.[2]

Bank credit. The fact that commercial banks are not in a position to provide permanent capital for an enterprise leads to the practice of requesting the bank borrower to liquidate his indebtedness at least once each year in order to demonstrate the temporary nature of the loan. It is true that some firms have their paper outstanding the year round. One argument for this practice is that the business is constantly making purchases upon which it may take discounts that are greater than the discount paid the bank. If the bank credit were not used, the discount lost, and the full period of mercantile credit taken, a possible profit would be lost. Such a statement, however, is an admission that the management could employ additional permanent funds profitably, and the problem of securing these funds should be faced. Usually, continuous bank borrowing is practiced by small and medium-sized rather than by large business units. Such concerns often have difficulty in raising permanent funds by the sale of stocks and bonds. Working capital is generally built up in such cases from retained earnings.

Working capital inadequacy. Inadequate working capital is frequently stated as the cause of financial embarrassment and failure. As an explanation the statement is superficial. It simply states that the current assets are inadequate to meet the current debts. The possible causes of inadequate working capital in a going concern may be located by examining the earnings statement and comparing the consecutive balance sheets.

Some of these causes flow from unfortunate circumstances,

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[2] Guthmann, Harry G., "Industrial Working Capital During Business Recession," *Harvard Business Review*, July, 1934, p. 472.

and others, from bad financial management alone. A list of the causes of inadequate working capital would read:

1. The payment of unearned interest and dividends.
2. Operating losses.
3. Extraordinary losses.
4. Current funds used to add to fixed assets.
5. Reduction of stocks and bonds.
6. An expanded volume of business requiring more working capital than is available.

1. *Unearned interest and dividends.* The payment of interest and dividends reduces working capital by taking cash while leaving the liabilities unchanged. Interest payments are necessary, of course, to prevent the business from being declared bankrupt; dividends, whether earned or not, are improper when they seriously impair the working capital position. The payment of dividends that are not being earned currently may arise from a desire to maintain a financial record, to hold trade prestige, or to make a good showing preparatory to selling stocks and bonds.[3] When working capital and previously accumulated surplus warrant, the maintenance of dividends will make for satisfied stockholders.[4]

When earnings are sufficient for dividends, trouble may nevertheless arise from the management's attempt to use the profits to acquire additional fixed assets and to pay dividends at the same time. The balance sheet as well as the earnings statement must be read in order to determine the propriety of a dividend declaration. To a wise director a strong working capital position is as much a prerequisite of a dividend declaration as is a surplus account in the balance sheet.

2. *Operating losses.* Operating losses may also drain the working capital. The sales of services or goods may not yield

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[3] During the spring of 1921, the By-Products Coke Corporation continued dividends although operations had been unprofitable during the later months of 1920 and their plant had been operating at but 50 per cent of capacity from the first of the year. The dividend declaration in the spring made it possible to state that "dividends on the common stock have been paid every year during the last fourteen years" when floating a bond issue in May, 1921, to secure working capital. Dividends on common stock were discontinued shortly thereafter.

[4] For an unusual example of dividend maintenance, the record of American Telephone and Telegraph Company may be studied for the decade of the 1930's. The Company's $9 dividend rate, inaugurated in 1922, was kept up without a break in spite of earnings below that figure in a number of years.

sufficient amounts to repay the cost of goods sold and the necessary selling and administrative expenses. Such losses may be caused by lack of knowledge on the part of the executive, traceable to insufficient or tardy accounting information. On the other hand, the operating loss may be a loss consciously borne throughout a period of stress for the purpose of continuing business and keeping the organization intact for a period of profitable activity. The unrecognized losses which result from the accumulation of uncollectible accounts and unsalable merchandise will be taken up in the discussion of those accounts later in this chapter.

However, operating losses do not always draw upon working capital. The depreciation of the equipment is included among the expenses of operation. This loss drains the fixed assets instead of the current. An analysis of earnings statements frequently shows an abnormal reduction in repairs and replacements during a period of depression. The depreciation may also be understated, thus reducing the reported loss.

3. *Extraordinary losses.* A complete list of possible extraordinary losses is of course impossible, but it would include any unusual loss that might effect a reduction of any of the current asset values or increase any current liability without effecting any correspondingly favorable change in the working capital. A most common loss arises from a falling off in the value of inventory resulting from sudden violent changes in market price. An almost unlimited number of companies which suffered on this score during the deflation of 1920–1921 and that of 1929–1933 might be given.[5] A defalcation or a burglary would work the same result if not covered by insurance. The current obligations of a concern might suddenly be increased by an unfavorable court decision in a damage case or a patent infringement suit.

4. *Additions to fixed assets.* It not infrequently happens that an enterprise diverts cash to the fixed assets for additions or improvements. This is usually done during profitable periods, when it is vaguely expected that "profits" will pay for the work.

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[5] The Central Leather Company, for example, which had built up a surplus of about $30,000,000 from net earnings during the years 1912–1919, lost the entire accumulation and showed a deficit of almost $7,000,000 after 1920–1921. Companies carrying large inventories of raw materials, such as meat, leather, rubber, and sugar, which fluctuate violently in price, suffer heavily in such a period.

If the profits are sufficient and the work not too extensive, the matter may take care of itself. Sometimes, however, the expenditures reduce the working capital to a dangerous extent, and trouble has frequently resulted, especially where the lack of current funds is not noted until a period of restricted credit and high interest rates has set in. An inexpedient issue of securities may then have to be sold in order to replenish the cash, or failing that, receivership may ensue.

5. *Reduction of bonds or stocks.* So long as the retirement of bonds and stocks is voluntary, the management is not likely to drain working capital unduly for this purpose. Probably the two chief sources of trouble in this regard are: (1) the failure of management to balance the drain of such security retirements by a retention of surplus, and (2) excessive retirements during a period of depression when cash is temporarily idle as a result of low business activity. Difficulty may also follow when a rigid sinking fund requirement for a bond or preferred stock issue drains working capital more rapidly than it can be replenished by earnings.

6. *Expansion of operations.* Some businesses are embarrassed by prosperity. They find their volume of sales has grown so rapidly that they have insufficient working capital for their purposes. (See the illustration on page 60 above.) An increased volume of business means that a larger stock of goods and larger amounts of customers' accounts must be carried. Up to a certain point, assistance may be had from the bank and those selling to the business. Soon, however, the point is reached where the more observing creditors note that the margin of working capital which protects them is too small in proportion to the current liabilities. However, if the condition is discovered at a time when it is possible to obtain more permanent capital without embarrassment, the business may be saved from subsequent financial difficulties.

Of the six causes of inadequate working capital, the first five represent factors which act as a drain upon it; the last represents the failure of working capital to grow rapidly enough to keep the position sound. The first three causes will be reflected in the balance sheet by a decline in working capital which is balanced by a decline in the surplus. The profit and loss statement will have to be examined in order to determine which of the three are operative. The fourth and fifth causes are purely balance sheet

changes, the drain on working capital being balanced by increased fixed assets or reduced bonds or stocks. In the case of the last cause, working capital may actually increase, but because of a too large increase in the current debt, the situation becomes financially hazardous.

Working capital analysis. Since inadequate working capital is the forerunner, if not the real cause, of financial disaster, the analyst will constantly watch the progress of this half of the balance sheet. Moreover, care must be exercised to detect any inadequacy, since reports are sometimes published in a misleading form. The first precaution necessary is to make sure that all items in the balance sheet relating to working capital are properly located. Sometimes assets that are not current are included under that heading, while current liabilities may not all be stated as such.

The second problem is one of scrutiny of the details with a view to detecting whether misstatements exist, and whether the various values are in a proper proportion one to another. These two problems are discussed together in the following material.

Cash. Cash, the common measure of value, is the form toward which most of the current assets are traveling. The customers' accounts are but one step removed from cash. The merchandise account, since it is usually converted first into accounts receivable, may be said to be two steps removed.

Frequently, the cash is shown under two headings: Cash on Hand, and Cash in Bank. This arrangement is a desirable one, since it separates the part that may be verified most easily—Cash in Bank—from items that may be misrepresented and which, therefore, need careful analysis. Cash on hand has been distorted by the inexpert and the unscrupulous to mean a variety of items. It has been stretched to include "I O U's" of employees, loans to officers, advances to salesmen, and similar non-cash items. Where the Cash-on-Hand item is stated separately, it should be comparatively small; if it is not, the possibility of some such error as is here indicated should be considered. When the balance sheet has not been audited, a dishonest or an ignorant proprietor has been known to show his bank balance, without regard to his outstanding checks, as his cash in bank. Since his accounts with creditors have been reduced on his books by these checks, he overstates both his net worth and his working capital. Another sharp practice, but one which should be detected by an auditor, is the occasional attempt to

overstate cash in bank by depositing doubtful checks at the time of audit or statement-making. An auditor detects such items by checking up on any notes, checks, or other items in the course of collection at the bank.

Occasionally, cash in bank is not available for general purposes. It may be set apart for a specific purpose, for example, for a sinking fund. Such cash, in a properly prepared statement, will appear under a distinct caption, such as Sinking Fund. During the height of the period of bank failures between 1930 and 1933, cash in bank was not infrequently a frozen item. Good practice requires that such cash, in closed banks or subject to restricted withdrawal, be stated separately.[6]

Cash in foreign banks. Where a business house does an international business, or where a financial institution has banking connections abroad, there are likely to be cash balances carried in foreign banks. The value of such balances varies with changes in the rate of exchange for the currency of the foreign country in question. Such variation in value will be equally true of obligations, such as accounts and notes payable, in foreign cities, unless the transaction is on a dollar basis. There are also restrictions upon the withdrawal of foreign cash to the United States, so that it is regarded as desirable that balances abroad should not exceed actual needs for foreign payments. The danger of loss of assets in belligerent countries requires no comment.[7]

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[6] Further information for the auditor with regard to the security of Cash and other balance sheet items may be found in works on auditing (for example, Montgomery, R. H., *Auditing Theory and Practice*, New York: Ronald Press, 6th ed., 1940, Chap. VI). However, a credit man who analyzes statements is not an auditor, and so only such information is included here as is likely to be of value to the former. The statement analyst must depend upon the figures presented him and upon such questions as he may be permitted to ask. He rarely has access to the books of the business, and a description of the methods of the auditor in discovering errors and misstatements would consequently be out of place in this discussion.

[7] Warner Bros. Pictures, Inc. presented an unusually detailed balance sheet (1940) in which the amount of each item was reported for the U.S.A., the British Isles, and Other Foreign Countries. Foreign current liabilities exceeded the corresponding current assets, thereby relieving the Company of any problem of withdrawing any subsequent profits for its United States investors. Intercompany eliminations, such as, "Owing to foreign subsidiary companies," were also stated.

International Paper and Power Company reported (1940) that the Canadian Foreign Exchange Control Board permitted the retention of United States dollars from its sales for the payment of interest and debts and "substantially all the balance of net earnings of the principal Canadian subsidiaries."

Any such foreign bank balances or receivables should be separately stated in the balance sheet. Where the presence of such an item is known or suspected, a bank credit man should demand detailed information. The fact that failures are due to this cause indicates the serious need for such close investigation.

The place of cash in working capital. There have been attempts to lay down some rule as to the proper proportion between Cash and the other accounts that make up working capital, but no rigid rule seems practicable. The part cash plays in the working capital will, and should, vary with the nature of the business and the season. Cash is essential only so far as current expenses are incurred and current liabilities mature. Ample working capital will normally provide a basis for securing cash from the banker for both purposes. It is only when some question arises as to the liquidity of the other current assets, when doubt is raised as to the profitableness of the business, or when a concern runs upon a period of restricted bank credit that limited cash becomes hazardous.

There is, then, no fixed proportion between Cash and the other accounts. Many commercial borrowers, however, pursue the policy of keeping their bank balances up to a certain average percentage of their bank loans. It is ordinarily expected that the bank balances of such borrowers will average from 20 to 25 per cent of their bank loans. The objection is raised by some businessmen that this rule necessitates excessive borrowing. A firm needing $3,000 would have to borrow and pay interest on $4,000 in order to maintain a 25 per cent balance. In effect, the interest charge is raised by 33⅓ per cent. A nominal rate of discount of 6 per cent becomes 8 per cent for the amount actually used.

This objection may be valid in some cases. It overlooks, however, the fact that ordinary prudence requires the keeping of a balance for running expenses and for protection against those emergencies that are likely to arise in business. Moreover, the banker has a right to expect his customers to keep some balance to repay him for the expense of handling their accounts. If, however, the bank does not in each case base the balance requirement upon these two factors, the practice is a mere device for raising the rate of discount by indirection.

A business should, in general, keep cash balances (1) that will be sufficient in relation to other current assets and the current

liabilities to avoid unfavorable comparisons with similar businesses by creditors, (2) that will support a satisfactory line of credit with the commercial bank, if that is desirable, and (3) that will be enough to prevent trouble in meeting bills and expenses as they mature. Ordinarily, the last consideration will mean maintaining cash equal to the operating expenses for from thirty to sixty days.

Accounts receivable. The accounts receivable should represent the amounts owing from customers for the sale of goods or services. Since it has sometimes been used to include any amount owing to the business, occasional attempts have been made to use a more definite title, such as "Trade Debtors." The statement form of the National Association of Credit Men uses the caption "Accounts Owing from Customers Collectible."

Such a title excludes advances to salesmen, loans to officers, and the like. Accounts with subsidiary or allied companies, where the balances are likely to represent a more or less permanent advance, should be placed under the fixed assets. In any case, it would be bad practice not to state such balances separately. Goods transferred to branches of the organization should not be regarded as a charge to be shown as accounts receivable. The goods, until sold, are a part of the inventory.

Pledged assets. Whenever accounts receivable, or, for that matter, other assets, have been pledged in order to secure credit, they should be shown under a separate title, thus:

Accounts Receivable—Pledged ..... $_____

Such assets are subject to the prior claims of the secured creditor or creditors who hold the assignment or other evidence of pledge. Almost any of the assets may be pledged. Accounts or notes may be pledged to secure loans. Merchandise and equipment are sometimes pledged to the vendor to secure the payment for the same. Securities are frequently used as collateral security at banks.

The circumstances under which such pledges arise are various, and so will be discussed later, and more appropriately, in relation to the various liabilities for which such security may be given. Since the hypothecation of receivables is sometimes not mentioned in the balance sheet but may be stated in a footnote or even omitted altogether, the method of checking up on this point will be touched upon in Chapter X. The most helpful

practice is to show pledged assets and secured liability items under separate account titles.[8]

Notes receivable. The same analysis described for the accounts receivable is desirable for notes receivable, or, as they are sometimes called, bills receivable. The note, since it is an instrument signed by the debtor, is often paid more promptly than the open book account. The terms are unmistakable and a note lends itself more readily to the legal requirements necessary to collection by law. All bills of exchange or drafts that have been accepted are regarded as notes receivable. Because of their special quality, however, trade acceptances, which are described below, are preferably shown under a distinct caption, although frequently they are merged with drafts under the general caption of "Notes Receivable."

It is very important to learn whether these notes were given at the time of the sale or after the account had become due. If the latter is the case, the notes represent extensions of the original credit period and are clearly an inferior asset. They are overdue accounts. Familiarity with trade practice will often indicate whether notes receivable are to be expected in the balance sheet or not. When their use is unusual, it is frequently assumed by the reader that they represent a less desirable asset, representing either overdue accounts converted into notes, or special credits outside of regular trade, such as notes from officers or employees, and so of doubtful maturity and liquidity.

Certain wholesale lines customarily take notes. Examples of these are lumber, fur, jewelry, and agricultural equipment trades. In general, the use of the promissory note is limited in this country to lines dealing in commodities of large unit value, or lines which grant a long term of credit. In the statement of such a business the accounts receivable, if present, would be fairly small.

Trade acceptances. Before a note becomes due, it can be taken to the bank and discounted, in which respect it is superior to an open book account. Trade acceptances have been urged

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[8] The importance of a pledge may be seen in the statement of Warner Bros. Pictures, Inc. (1940) that to secure serial bank loans currently amounting to $4,000,000 the Company had pledged stockholdings in a subsidiary, which represented net assets included in the consolidated balance sheet of approximately $42,700,000. The lien is of distinct importance to the Debenture bondholders and other unsecured creditors. It is understandable in view of the mortgages on various properties, the considerable indebtedness, and the nature of the business.

on this ground, and are sometimes spoken of as notes. They have, however, two distinctive characteristics: (1) they are time drafts drawn on the customer and *accepted at the time that the sale is made,* whereas a note may be given at any time; (2) they cannot be used in transactions other than the sale of merchandise and properly be called trade acceptances. Recognition of these characteristics is shown by a written or printed statement on the face of the trade acceptance.[9]

The trade acceptance, because it is given by the customer in payment for merchandise which is resold in the ordinary course of business, is said to be a self-liquidating instrument. The merchandise being purchased for resale will normally provide the means for meeting, or liquidating, the obligation. This situation is essentially different from that in which the credit is used to obtain unliquid types of property.

The easy convertibility of trade acceptances makes it wise to show them under a distinct caption rather than under Notes Receivable. Their use is not widespread, and to show a small amount as notes might lead the analyst to mistake them for the undesirable kind of notes mentioned above. Trade acceptances might well be placed next to Cash, as the most ready first aid to that item.

The foregoing is wholly applicable only when the trade acceptance is used properly. In many cases it is abused. For example, a creditor sometimes sends his debtor a trade acceptance form to sign when an account is past due. In fact, attention has been called to houses which make this their regular practice. Other houses secure trade acceptances only from customers whose credit is not up to the usual standards. It is obvious, therefore, that whether the trade acceptance is of any better quality than a note depends entirely on how it originates. The future attitude of bankers toward its appearance among the

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[9] In the Uniform Negotiable Instruments law a draft or bill of exchange is defined as an unconditional order in writing, other than that of a banker, signed by the person giving it, requiring the person to whom it is addressed to pay, in the United States, at a fixed or determinable future time, a sum certain in dollars to the order of a specified person.

The standard form of trade acceptance recommended by the former American Trade Acceptance Council is the customary draft form with the following statement printed below the body and above the signature of the drawer: "The obligation of the acceptor hereof arises out of the purchase of goods from the drawer, maturity being in conformity with original terms of purchase. The drawee may accept this bill payable at any bank, trust company, or banker's office in the United States which he may designate."

current assets depends on whether creditors generally use the trade acceptance in the proper manner.

It is also pertinent to add that it is the custom for the strongest debtors to pay cash within a very short time in order to secure cash discounts. When necessary, such debtors discount their own single-name paper at their bank to obtain the cash. Only the relatively weaker concerns take the full time to pay, and hence only these would be likely to give trade acceptances.

In conclusion, the three advantages to lending bankers which trade acceptances have over single-name paper as a form of borrowing may be stated as follows:

1. By the practice of discounting trade acceptances only, the banker is automatically protected from lending more than the amount of these receivables. The result is that the banker is always lending on receivables, never on inventory or other assets.
2. The borrower, in turn, is prevented from using the receipts from collected receivables for current expenditures of any sort, which would be possible had he borrowed on his own single-name paper. Acceptances, when discounted, are turned over to the banker and, at their maturity, are collected by the bank, thereby liquidating the credit.
3. In a practical sense, the banker may be said to be a secured creditor by this plan. By discounting the acceptance he has taken over that particular asset, and it ceases to be subject to the claims of the general creditors, as are the accounts receivable in a business that borrows from the bank on its own single-name paper.

At the beginning of a depression, many concerns will show a suitable proportion of cash and receivables to their current debt. (See page 60.) As the depression continues, the cash collected from receivables is used to meet current needs, which, in the case of manufacturing concerns, means that it is used to increase inventory. Were the banks to lend solely upon trade acceptances, the cash would come directly to them as the holders of the instruments.

It is this line of reasoning which leads some bankers to regard acceptances with particular favor, although their use obliges the bank to handle a great many individual items, where single-name paper involves the care of only a very few promissory notes. In view of the suggested advantages, the banker might prefer the trade acceptance when the borrower was seeking the

maximum line of credit.[10] Because such a credit would liquidate itself through the maturity of the individual acceptances, whenever the banker refused to discount further paper, the common rule that "bank loans must be cleaned up at least once a year" might be suspended, since the object of the rule is to demonstrate the liquidity of the advance to the borrower.[11]

Working and trading assets. The inventories are often placed under this heading, distinct from the other current assets. This practice is followed by those who believe that the inventories are essentially different from the assets discussed so far. Before merchandise can be regarded as available for debt-paying purposes, it must be sold. Inventory is also subject to changes in market value, whereas receivables and cash are claims to definite amounts of money. It is for this reason that the cash and receivables are sometimes called "dollar assets" or "quick assets" to distinguish them from the other current assets.

A banker who follows this practice of separation in an analysis might desire to have the working capital portion of the balance sheet stated as follows:

Dollar Assets:		
Cash on Hand	$ 131.75	
Cash in Bank	630.18	
Accounts Receivable	5,940.82	
Notes Receivable	525.00	
Total		$ 7,227.75
Working and Trading Assets:		
Raw Material	$3,857.60	
Work in Process	1,430.40	
Finished Goods	1,972.02	
Supplies	315.08	
Total		$ 7,575.10
Total Current Assets		$14,802.85
Current Liabilities:		
Accounts Payable	$5,375.80	
Accrued Expenses	184.20	
Total		$ 5,560.00

[10] Actually, commercial banks were rarely interested in loans secured by receivables until the recent scarcity of lending opportunities. Such lending was and is largely the business of specialized finance companies. Guthmann, H. G., and Dougall, H. E., *Corporate Financial Policy* (New York: Prentice-Hall, Inc., 1940), pp. 484–489. Banks are still little interested in receivables save when they are evidenced by a written promise to pay, as in the case of most installment paper.

[11] In practice, a business which is nonseasonal and has a continued need for bank credit may meet this requirement by the subterfuge of shifting its loans to other banks, borrowing in the open market, or employing the usually more expensive mercantile credit temporarily. See McKinsey, J. O., and Meech, S. P., *Controlling the Finances of a Business* (New York: Ronald Press, 1923), p. 320.

In the above case, the prospective borrower, having made recent purchases of raw material, is desirous of securing a loan to pay off his accounts payable in order to take advantage of certain cash discounts. The loan will be made on the basis of the best type of current assets only—the dollar assets. In view of the hazards of the merchandise markets in some lines of business, this high standard for bank credit does not seem unreasonable. It is not, however, to be regarded as a general rule that is always followed, for there are some staple commodities which are more readily convertible into cash than are receivables.

Merchandise inventory. Under the head "Merchandise Inventory" may be considered the inventory of the trader who does not manufacture. In studying the value of the merchandise, three questions arise:

1. How was the amount of stock arrived at?
2. What was the method of valuing it?
3. What is the probable salability of the goods?

The amount of stock should be arrived at by a careful physical count at the end of each accounting period, that is, by inventorying. Sometimes the figure is arrived at by estimate. Or, a continuous record of incoming and outgoing stock may be kept, so as to have a perpetual inventory. Since there is but a very slight chance that a counted or perpetual inventory will come out in even thousands or hundreds of dollars, the use of estimates may usually be detected by the presence of round figures in the balance sheet. Another danger is that consigned goods will be improperly included, although such goods are the property of the consignor.

Ordinarily, the goods should be valued at cost. However, it has become the general rule to use market value instead whenever that figure is lower than cost on the date of the balance sheet. The basis of valuation should be learned, and, to aid the reader, it should be stated in the balance sheet itself. If a decline in the market below cost is shown in the balance sheet by an offsetting "Reserve for Market Depreciation of Inventory," the reserve should be deducted from the asset in the preparation of the statement of working capital.

Where goods have been received in exchange for merchandise, the valuation should be carefully scrutinized. The automobile

sales agency may be used as an example. The proper basis for valuation of second-hand cars in this case would not be the amount allowed for them, nor the amount for which they would sell, but the latter amount less a reasonable percentage for necessary selling and administrative expense as well as a reasonable profit, unless, by chance, that figure was more than cost, in which case cost would be used.

The matter of salability is important, in that it is only upon conversion that goods become available for debt-paying purposes. The goods may be without a market. Staple articles are least likely to lose their market, although even with them the price may drop to a ruinous point. In some lines of business, such as millinery or women's clothing, changes in style may render an overgrown inventory valueless. If a business is suffering from decay, the goods may be shopworn. These are possibilities to be considered in the light of internal analysis and business experience.[12]

Raw material inventory. Raw material will be put to the same general test of value as that given above for the inventory of a merchant. This inventory is the most favorably regarded of any in the manufacturers' working and trading group. Raw material is likely to consist of staple commodities possessing a wider market than the more specialized finished goods. The balance sheet is, however, the picture of a moment, and if the business becomes embarrassed at a later date, the raw material by that time may have been converted.

The size of the raw material inventory should be studied. Normally, it should be reasonably small, in order not to tie up an unduly large amount of capital. Where an impending scarcity threatens to halt operations, however, wisdom dictates the purchase of adequate supplies. This practice constitutes speculation, in the better sense of the word—a policy which should be pursued only with caution. Large purchases are particularly to be avoided after a period of rising prices. At such times the scarcity is exaggerated by the hysterical buying of ill-informed buyers. Prices over a long period tend to move in cycles, and a purchasing policy should depend upon the underlying conditions at the time.

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[12] Internal check, which is based upon a study of turnover, is discussed in the following chapter.

Partly finished goods. The partly finished product, or work in process, represents the value of raw material plus the labor applied to it and a proper proportion of the indirect expenses of production, such as the depreciation of machinery, power, heat, light, and similar items. The amount of indirect expense, overhead, or burden included in the value of this inventory represents, in the majority of instances, a more or less expert estimate. It should, however, be obtained through the use of cost accounts whenever practicable. Such accounts serve to show the cost of the product at the various stages of its production, and, where there is the production of more than one type of commodity, to distribute the cost scientifically among the different products.

The increased interest of businessmen in this special branch of accounting has been reflected in the growth of the National Association of Cost Accountants. There is a marked tendency to standardize the methods of cost accounting within the different industries. Standardization is valuable to the analyst since it assures him as to the comparability of statements to be used for determining the relative efficiency of competing units and discovering the reasons for differences in production costs.

Partly because of the doubtful correctness of the unfinished goods valuation, and partly because it has little value in a liquidation, the item is heavily discounted in the analysis of bankers and credit men. Unfinished goods, for example, in the clothing trades, usually have little value except as scrap. But when a liquidation basis of values is to be taken, nearly all inventories need to be heavily discounted. A forced sale invariably results in sacrifices of values. Even accounts receivable are hard to collect in receivership. The heavy loss in inventory values in bankruptcy cases led mercantile credit men to establish co-operative adjustment bureaus for the more efficient handling of embarrassed debtors.[13] The adjustment bureau acts in the capacity of a committee of creditors. Since the bureau devotes its whole attention to the work of handling embarrassed debtors, and since it represents a number of creditors as a unit, it is much more efficient than any creditors' committee would be. Where conditions warrant, the debtor is permitted to continue in business—a solution more likely to result in satisfaction

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[13] See Ettinger, R. P., and Golieb, D. E., *Credits and Collections* (New York: Prentice-Hall, Inc., rev. ed., 1929), p. 394 *et seq.*

to creditors than a resort to bankruptcy. Where it is necessary to wind up the affairs of the debtor, the bureau conserves the assets, securing a much better price than could be expected from the customary unsystematic sale. When it appears profitable, a bureau might even have any partly finished goods completed before it liquidated a business.

Finished goods inventory. The valuation of finished goods is not unlike that of ordinary purchased merchandise. The chief difference lies in the fact that its valuation, if it is to be more than a guess, is dependent on the cost accounting, as was the valuation of partly finished goods.[14] In the absence of such accounts, the door is left open to inflation on the one hand, and to ultraconservative understatement on the other.

While undervaluation of inventory is not usual, it is reported that some of the more conservative textile mills follow a regular practice of carrying their inventory at about one-half its actual purchase price. Although creditors are protected rather than harmed by such accounting, it is to be condemned. It is deceptive to stockholders, and would, if at all general, greatly hinder all attempts at genuine analysis. Statements must be as accurate as possible if they are to be satisfactory as information.

There is a temptation for the manufacturer—not presented to the trader—to increase unduly the stock on hand. It is natural to desire a continuance of manufacturing operations, not only to avoid the losses of idleness but also to keep the labor force intact. Unit costs are kept low by regular operation. This tendency is likely to increase liabilities through the purchase of materials required in manufacture and to reduce the cash resources to a dangerously low point. Therefore, the question is raised as to what constitutes overstocking. It is ordinarily unwise to acquire a stock in excess of what can be sold within the period which it normally takes to turn over stock, a point discussed in the next chapter.

The following statement of working capital for a furniture manufacturer, which we shall call the Bergstrom Furniture Com-

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[14] The difficulties of allocating costs are doubtless a dominant reason for the meat packers' use of selling price less an allowance for selling expenses in valuing inventories. The reasons for the method suggested by D. Himmelblau are: (*a*) it is easy to ascertain and apply to inventory scattered over a large number of points, (*b*) cost is not known in many cases, and (*c*) inventory is disposed of in a short time and hence is regarded as sold, for all practical purposes. (*Investigations for Financing,* New York: Ronald Press, 1936, Lecture 4, p. 7.)

pany, shows the position of a growing concern with its inventories stated in detail and apart from the other current assets:

BERGSTROM FURNITURE COMPANY, INC.

STATEMENT OF WORKING CAPITAL
As of December 31, 1941

Current Assets		*Current Liabilities*	
Cash	$ 11,127	Accounts Payable	$207,342
Accounts Receivable (allowance made for bad debts and discounts)	369,243	Notes Payable	95,234
		Accrued Expenses	19,420
Notes Receivable	78,629		
Inventories:			
Finished Stock	83,242		
Raw Materials	31,462		
Work in Process	19,352		
Total	$593,055	Total	$321,996
Working Capital			$271,059

In the above case, the inventories are of less importance than the receivables—which is most likely to be true in a seasonal business just after the selling season is over and before the accounts are collected. Sometimes unusually long credit terms, as in installment selling, result in a high proportion of receivables to other current assets. While the current assets are not twice the current liabilities, the cash and receivables are nevertheless so large a part of the total current assets that they alone are in excess of the current liabilities. Because of the none too high ratio of current assets to current debt, the quality of the former is a matter of concern to the creditors. With so much tied up in the item of receivables, their quality or collectibility becomes a point of central interest. The method of checking on this and other points of interest is considered in the following chapter.

Supplies inventory. The placing of the supplies inventory must depend upon the circumstances surrounding the business. In many cases it would be best to place this inventory under Deferred Expenses. This would be the case with stationery and other office supplies. Such an item is headed for the Expense account rather than ultimate conversion into cash through sales, and it has little or no value in meeting debts. Occasionally, as in some factories, supplies are important items, and in liquidation are as marketable as a raw materials inventory, and in such a case they may be placed with the other inventories.

Advances on contracts. Advances or deposits are sometimes made on contracts for special goods. Such advances are some-

times placed with accounts receivable. They are decidedly different, however, from accounts receivable. The former is a prepayment for merchandise to be delivered, and the latter is a claim to cash for goods sold to others. The advance indicates an approaching addition to merchandise and probably to accounts payable. If the prices are declining, this item points to a commitment likely to result in loss. It must be thought of as being a step further from cash than is merchandise.

Investments. Whether investments are a current or a fixed asset depends upon the policy and the intention of the management. If the investments are held for the purpose of controlling other enterprises, or are intended as permanent investments, or are not readily marketable, they should not be classed as current. Securities may be purchased, however, with the idea that they are to be sold or used as collateral for loans in case of need.

Unfortunately, such securities are likely to be purchased in good times when they are high-priced, and the cash thus tied up is often needed when security values are low. It is for this reason that securities, even of the best grade, are not regarded as a wholly satisfactory cash resource unless they mature within a short time. The proximity of maturity limits the possibilities of fluctuation if the security is of investment quality.

Ordinarily, investments are carried at cost. Conservatism would demand, however, that where they are carried as current assets, an offsetting reserve be set up for loss in market value or some other means (such as a footnote) be provided to enable the reader of the statement to ascertain the current value.

Deferred charges. Deferred charges, sometimes called *deferred assets* or *deferred expenses,* are usually stated separately from current assets. Very different sorts of items are included under this heading. When they consist of prepaid expenses, it could be argued that they should be included among current assets in computing working capital for a long-term analysis. Such treatment would be justified on the ground that prepaid expenses of a short-run nature relieve the cash of just that much of a drain which it would otherwise bear during the following period. The greater the deferred items, the stronger the cash. Exclusion is common, however, for two reasons: (1) seldom can they be converted into cash; and (2) frequently they are mingled, under the general account title of Deferred Charges, with other items which, unlike prepaid expenses, such as rent and insurance paid in advance, are a doubtful support to cash.

Two common deferred charges, unlike the prepaid expenses, are organization expense and discount on bonds issued. The costs of organizing a corporation are met before any profits are available to offset them, and so they are shown for a period as assets to prevent a deficit from appearing in the balance sheet. It is not regarded as conservative to carry organization expense as an asset beyond the first few years of a corporation's career.[15]

Corporations frequently sell their bonds for less than par value, that is, at a discount. When the bonds mature, however, the full face value must be paid to the bondholder. The discount plus the interest payments constitute the cost of borrowing. It would be clearly unfair to regard the discount as a loss for the year in which the bonds are sold. At the time when the bonds are introduced at par as a liability, the discount appears as a deferred charge among the assets to be gradually written off over the life of the bond issue.

The investor, then, might wish to analyze the deferred charges before classifying them and include prepaid expenses among the current assets. The common practice, however, is to treat all deferred items as belonging under a special classification allied to intangible assets. Credit analysis has invariably treated them in this manner. They are almost always a minor item and their classification would in any case have little effect upon the commonly studied balance sheet relationships.

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[15] While this is the conventional attitude, the author believes that organization expense is better classified as an intangible asset. Like goodwill, it represents an expenditure for an intangible which is necessary to the acquisition of a *going* business, and its elimination is to be regarded as a matter of expedient conservatism rather than of principle. Under the Federal income tax regulations, it has to be treated in the manner suggested. It cannot be deducted as an expense in the calculation of net income subject to the tax. Under the Federal excess profits tax, concerns find the retention of Organization Expense as an asset desirable in order to increase their "invested capital," just as the presence of other permitted intangible assets upon their books is helpful.

CHAPTER V

Analysis of Working Capital (Continued)

Current liabilities. The current liabilities represent the claims that will have to be liquidated within a short time. The short term implies that the credit is needed only briefly. When a businessman buys machinery or adds to his fixed assets by incurring current liabilities, he may be accumulating trouble as well as liabilities. A machine, unlike a bill of goods, cannot be converted readily into cash. Unless there has been a suitable surplus of working capital, such assets should be acquired by more permanent financing.

Even a bill of goods may not provide the means of meeting the liability thus brought into the balance sheet. The time required to realize on the goods may be greater than the credit period, or the price of the goods may fall, or the market itself may disappear, which possibilities explain why the banker, in most cases, lays less emphasis on the inventories than on the other current assets. The latter do not depend upon the sales organization for their cash quality.

While values may shrink or disappear on the asset side, it has been said that the liabilities are never overstated, and it is true that overstatement of the liabilities is exceedingly rare. An exceptional case was that of a banking house which inserted a fictitious account under the heading "Owing to Depositors." It was reasoned that if ever a severe loss was met with, this overstatement could be dropped from the liabilities and the consequent blow to surplus would be lightened.[1] The overstatement was, in effect, a hidden contingency reserve.

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[1] F. H. Hurdman describes another case as follows: "One concern I know made a practice of entering foreign purchases at the normal rate of exchange with a corresponding amount in liabilities. At the end of the fiscal period those goods unsold were valued on the basis of the prevailing rate of exchange, but the liability was not correspondingly reduced. The result was an overstatement of liabilities." (Paper on "Analysis of Financial Statements" read before Robert Morris Associates at Richmond, Va., November 24, 1922.)

Assembly of current debts. The usual problem of the analyst, however, is to avoid understating the current liabilities. The problem exists sometimes because of arrangement, sometimes on account of omissions.

The first work in preparing the balance sheet for study is to arrange the accounts in the form best suited to the work in hand. Some reserves, such as the reserve for taxes, may represent current liabilities. Sometimes there are shortly maturing fixed liabilities for which no provision has been made for retirement. If the business has been successful and conditions are normal, such debt may be replaced by another fixed liability. Until a definite arrangement has been concluded, such a fixed liability comes within the current class, and may so reduce or eliminate the working capital as to endanger the solvency of the enterprise.[2] It may be noted in passing that usually, though not invariably, mortgages and bonds become payable at once if their interest is not paid. Bank overdrafts are sometimes placed among the current assets in red ink or in italics, to be treated as deductions. Their proper place, however, is among the current liabilities.

Omissions, when they exist, are a more dangerous factor than misplaced items. An unscrupulous merchant might include, as inventory, goods which are not paid for but the liability for which has not yet been entered on the books. Such a possibility makes honesty a prime requirement in credit matters. Expenses, such as accrued taxes, may be omitted through a lack of accounting knowledge. Sometimes, because of the tardy enactment of Federal income and excess profits tax legislation or because of the uncertain application of some law, the proper tax liability can only be estimated. When tax rates are high, as in recent years, the possible error may be substantial.

Moreover, there may be impending current liabilities. An adverse court decision may be pending. Goods may have been contracted for, and the contracts may become a burdensome obligation in a falling market. Contracts for raw material or merchandise, especially when for more than ordinary amounts and when made in a boom period, may create heavy losses in the succeeding business recession. Again, contracts may have been made to deliver goods or render services for some time in

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[2] However, under the uniform classification of accounts prescribed by the Interstate Commerce Commission, funded debt is not treated as a current liability unless due and unpaid.

the future, which contracts would be unprofitable in a rising market.

Secured creditors. Ordinarily all creditors, except those few given priority by law, expect in case of liquidation to share in the assets in proportion to their claims. If there is any loss to creditors, it will be distributed pro rata. Where some of the creditors are secured by a pledge of a part of the assets, the risk of the others is correspondingly increased; for this reason a correctly stated balance sheet should show separately any creditors who are in this class, and also the properties which are pledged.

Since liens on any of the assets weaken the position of the general creditors, the giving of such pledges impairs the credit standing of a concern to that extent. Strong concerns, as a consequence, avoid liens to current creditors if possible. Whenever special security is given to creditors for merchandise, the situation should be carefully scrutinized. It is usually an admission of weakness.

On some occasions, custom dictates the giving of a lien. When this is true, adequate allowance should be made. Bank credit demands special concessions. It may be the part of wisdom, where a concern possesses inventory that has exceptional value as collateral or desirable installment notes from customers, to pledge them for a bank loan. A well-secured loan might easily lead to a lower rate of discount, or might be the only means of borrowing for the particular concern.

Accounts payable. "Accounts Payable" is generally the first item in the list of current liabilities. In a mercantile or manufacturing enterprise, the item should represent amounts owing to trade creditors. Just as the size of the accounts receivable indicates the rapidity of customers' payments, so the size of the accounts payable shows the rate at which the concern is paying its own bills. If the customary credit term is thirty days, then the accounts payable should not exceed one-twelfth of the annual purchases, except in the case of the business which purchases seasonally and so has a very heavy indebtedness at some times and a very small indebtedness at other times.

In most lines it is advantageous to pay on practically a cash basis. Not only are discounts given for cash, but prices may be shaded for a cash customer. For this reason, notes payable to banks are more suitable than an equal amount of accounts payable, except when the latter are so small as to indicate virtually a cash basis.

Notes payable. Notes payable, which are also known as *bills payable,* may be given to merchandise creditors, to banks, or to other parties, or sold for cash through commercial paper houses. Where the notes are given to creditors for merchandise, it should be ascertained whether they are given in accordance with trade custom or to settle overdue accounts payable. Where the notes payable are mingled without distinction, a figure ending in round numbers would usually indicate that they were notes given to banks or sold through dealers in commercial paper. Notes of this kind indicate, on the whole, that the enterprise has fulfilled a higher set of credit requirements than has the concern that has been able to secure only mercantile credit. The analyst, however, should not be biased in favor of concerns enjoying bank credit, since even banks may make injudicious loans, but should form his judgment independently.

Where the notes have been given to others outside regular business channels, there is a question as to the financial condition. It is not customary to borrow from friends, relatives, or officers except when a business is in financial difficulty and unable to finance in the usual way. There is an implication that credit from these persons is on a personal rather than a business basis. Where a personal interest is involved, there is the danger that such a liability may receive special consideration. If a storm breaks, these loans may be paid off before bankruptcy proceedings are started. Liens on the assets are sometimes given to these persons and the transaction not stated in the financial statement.

Loans payable. Loans payable are sometimes distinguished from notes payable. The difference, if any exists, would lie in the absence of a written instrument such as a promissory note. The loan might be recorded only upon the books of parties concerned. The Loans Payable item may represent miscellaneous borrowings of the character indicated above, which should come under Notes Payable to Others. Again, the title may represent the loan of a finance company making an advance on the pledge of the accounts receivable.

These finance companies, which are also referred to as "receivable companies" or "discount companies," make advances for from 75 to 80 per cent of the selected accounts receivable. The accounts are then assigned to assure the payment of the loan. The account may be collected by the lender, but usually this is objectionable to the borrower, who feels that his customers

would regard the arrangement with suspicion if not actual dislike. Under the more usual "non-notification" plan, the customer is not notified of the lien, and the liability may be concealed from creditors.

When a concern arranges to sell or to discount its receivables, a contract is signed which provides, among other things, (1) the charges to be made and the times of payment by the assignor; (2) that, under the non-notification plan, the assignor permits the finance company's auditors to call at their pleasure to inspect his books and other records; (3) that the assignor transmit on the day of receipt all original checks, drafts, notes, or other instruments received in payment or on account of any receivables sold to the company; (4) that the assignor give the company power of attorney to transact any business relating to the assigned receivables, including indorsement of checks, drafts, notes, and other documents with the assignor's name. In addition, the assignor gives an actual assignment of his interests and title in the receivables, listing each invoice.[3]

The above is a statement of the usual practice, from which a few variations may be noted as follows:

1. Some finance companies also take notes and acceptances as well as accounts receivable. This is likely to be the case with retailers who sell such goods as automobiles and take one or more notes in part payment on the same. Such notes are not usually of a sort acceptable for discount by the commercial bank.

2. Accounts may be discounted and also guaranteed *by the lender.* The commission or discount deducted is made sufficiently large to remunerate the lender for probable bad-debt losses as well as for interest. To secure the assignee of the account in case the invoice should be reduced because of returned goods, or because of any reason other than bad-debt loss, the actual advance will be somewhat less than the difference between the amount of the account and the commission. After the account has been paid, the assignor receives the remainder of his share in the account.

Institutions that make this latter type of advance are not ordinary finance companies, but are known as factors and may occupy a special relationship to the assignor. An example is

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[3] For a description of these various specialized financing companies, see Guthmann, H. G., and Dougall, H. E., *Corporate Financial Policy* (New York: Prentice-Hall, Inc., 1940), Chap. 20.

the commission house which sells the product of a cotton textile mill and also serves as factor. An agent who not only sells the merchandise but also guarantees and collects the account is known as a *del credere* agent.

3. Under the "notification" plan, the person who owes the amount receivable may be notified of the assignment of the account and directed to make his remittance directly to the finance company. The objection to this plan has been noted above. The non-notification method is used in the majority of instances.

Possible concealment of this obligation from creditors is one of the objections to such a plan of financing as it is ordinarily used. The assignee takes as security the choicest receivables, thus making the practice dangerous to the general creditors in the event of insolvency. As was pointed out in the preceding chapter, the "dollar assets" are the most favorable basis for short-term credits. The rate of discount charged by these companies is also substantially higher than the bank rate. For this reason it is resorted to only where banking accommodation is lacking. The danger of concealment is one to be guarded against chiefly by the merchant creditor.

This practice of borrowing on pledged accounts is used by some concerns during periods of expansion to convert capital that is "frozen" in the form of accounts receivable. It is criticized as permitting unwise overexpansion. The chief hardship seems to be in the burden of risk which it throws on the merchant creditor. If this form of credit is utilized, the business should be in a position to pay cash for the goods it buys, and should take its cash discount with regularity, in which case the objections to the practice are usually invalid.[4]

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[4] Mr. J. H. Tregoe, formerly secretary of the National Association of Credit Men, in a comment on the danger of secrecy, is quoted as follows: "After the commodities furnished by a creditor have been exchanged by the debtor into accounts receivable, they should be held as giving reasonable assurance of the satisfaction of the debt. For the debtor to transfer them to some finance company as a security for a loan without notice to the creditors is a bad practice and contrary to public interests. . . . It was long ago deemed a matter of public policy and a legitimate protection to creditors that chattels be not subject to a valid lien holding good against creditors except as the arrangement was recorded and therefore a matter of public knowledge. The accounts receivable are just as valuable as the chattels, and public policy demands equally that this part of the assets be not subject to a lien that will hold good against creditors, except upon some record of the loan arrangement that is open to all inquirers." *Daily News Record*, August 11, 1922, p. 6.

Accrued expenses. Accrued expenses are seldom of a sufficient amount to be important. They are chiefly significant as indicating careful accounting. The presence of this item with the other accruals is an indication that the statements are not on a cash basis. The more usual accrued expenses are salaries and wages accrued, taxes accrued, and interest accrued. Sometimes the word *payable* is substituted for *accrued,* as "interest payable."

The accrued expenses differ from the other liabilities in that the latter are the result of business transactions that have been entered in the book of account. The account payable is shown only when a purchase has been made and the invoice received. A note payable is shown only when a promissory note has been given, or when a time draft drawn by a creditor has been accepted. An accrued expense, however, is an amount especially calculated as of the date of the balance sheet and anticipates *an approaching transaction,* such as the payment of wages, taxes, or interest, to the extent that the past period is responsible for the future obligation.

Dividends payable. Accrued dividends are sometimes found in the list of accrued expenses. Such an account title would indicate that the dividends to stockholders were regarded as an accruing liability, an assumption which is incorrect. Dividends, even on preferred stock, are not a liability to the stockholders until the directors have met and declared the same; but a dividend once properly declared becomes an obligation as much as any debt, and should be stated as Dividends Payable or Dividends Declared.

Occasionally a corporation that wishes to continue its past dividend record but needs to conserve its cash temporarily will declare a scrip dividend. This scrip is a promissory note to the stockholder and will show as a current liability, "Dividend Scrip." [5]

Unearned income. Deferred, or unearned, income, while frequently stated as a separate division of the liabilities, might on occasion be included among the current liabilities with suitable

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[5] On February 15, 1921, Sears, Roebuck & Company paid its dividend of $2 a share in scrip redeemable on or before August 15, 1922, with interest at 6 per cent. The company had heavy current obligations at the time. Stockholders owning 50 shares or less were notified that the company had accepted an offer of Julius Rosenwald to purchase scrip certificates at par, so as to save such shareholders any inconvenience.

allowance made for its difference from ordinary current debt. For example, the publisher of a periodical at the end of a year finds that he has been paid for 100,000 subscriptions that extend into the coming year for a period varying from one to twelve months, and the average is found, after testing, to be for a half year. If the receipt for these subscriptions were $300,000, the unearned portion is $150,000. An amount equal to the unearned portion should still be available in the form of current assets. As the year passes, the amount will be consumed by publication costs, except for whatever portion remains as profit.

The deferred income "Prepaid Subscriptions" is the liability of the publishers for the goods yet to be delivered. Like any ordinary current liability, its extinction will reduce the current assets. Unlike the usual current debt, however, it can be met by the delivery of merchandise rather than cash, and so is not dependent upon the sale of inventory and the collection of receivables. The three reasons for regarding deferred income as a special kind of liability are, then: (1) the liability may be liquidated by a delivery of goods or services rather than the payment of cash, (2) a portion of the item may represent profit, and (3) in the case of some publishers additional revenue from advertising may accrue as the publication is printed and delivered to the subscriber.

The temptation exists to regard the entire receipts as they are received as so much immediately available income, although such treatment of receipts can arise only from a misunderstanding. The omission of the liability for unearned, or deferred, income will be discovered if the analyst considers whether the business which is being studied is one which is likely to receive payments before the delivery of its goods or services.

Inquiries on details. The foregoing study of working capital that has been outlined is a general one and has not taken up the question of securing details not reported. Ability to obtain additional facts will vary with the person and with the situation. Much can be done by shrewd analysis, but there are also differences in the power to demand details.[6] The executive of a company being studied clearly holds first place in this respect. His chief problem is to understand the significance of the figures

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[6] Further explanation of the type of information sought to clarify the balance sheet and to supplement it is given in Chapter X.

presented, and to know when additional information is needed. He must also learn to place himself in the position of the unprejudiced outsider. Where possible, he should familiarize himself with reports of like enterprises. Comparisons will bring out any weaknesses. The banker, because of his broad viewpoint in this regard, may be able to offer valuable assistance.

The bank credit man will ordinarily occupy second place in his ability to secure details. Because of the high standard of bank credit, the banker requires a particularly good insight into the financial affairs of his borrowers. As the banker, he can watch the deposits and withdrawals of the borrower, which may furnish him with useful information.

The other creditors with current claims stand in the third place in their ability to secure details. They should be able, however, to secure such information as has been outlined. The creditors for merchandise have not been able to do this in the past, but their position has materially improved in recent years. By persistent, united effort, they have found it possible to secure better and more complete information.

As a rule, the investing and speculative public are not in a position to secure intimate details. Their purposes are fairly well served, however, by the more condensed statements that are generally issued periodically. This publicity measure obtains a higher credit rating for the company issuing statements, and thus renders it easier to secure capital and to do so at more reasonable rates.

Factors in working capital requirements. The following is an outline of the factors which are fundamental in determining the amount of working capital required by a business, and is applicable to industrial enterprises which are engaged in trading or manufacturing. The factors have been classified under the particular current asset or liability affected.

I. Inventory.
   1. Volume of Sales.
   2. Distribution of Sales throughout Year, or Seasonal Variation.
   3. Operating Conditions.
      a. Need for Securing Stock in Advance of Manufacture or Sale.
      b. Period of Manufacture.
      c. Time Interval between Manufacture and Sale.

II. Accounts and Notes Receivable.
   1. Volume of Credit Sales.
   2. Terms of Sale.
   3. Collection Policy.

III. Accounts and Notes Payable to Merchants. Credit Terms Applying.

IV. Notes Payable to Banks.
   1. Credit Standards Which Limit Amount of Credit Allowed on Current Assets.
   2. Protection Afforded by Other Than Current Assets.
      a. Amount of Other Assets.
      b. Method of Other Financing.
   3. General Business Conditions.

V. General Factors.
   1. Efficiency of Management.
   2. Attitude of Management.

The inflow of cash could balance the outflow; a healthy business, however, should add a further item to the above list for cash balances. A reasonable amount of cash will insure the prompt payment of obligations, meet emergencies, compensate the bank for its services, and help credit standing. Actually, many small struggling business concerns are so pinched for working capital as to have virtually no cash balance at the season of maximum need.

As the volume of business is large or small, the inventory requirements of a business will vary. A business which is subject to considerable seasonal variation in the volume of its business will need a larger maximum inventory for a given annual volume of sales than one which enjoys a regular flow of business. The inventory purchases of a straw hat manufacturer would be more or less bunched together at a single time during the year, while those of a retail meat market would be spread more evenly throughout the year, with frequent turnovers.

When there is uncertainty of supply or when transportation problems are to be met, increased inventories serve as a measure of protection. A long period of manufacture also adds to the inventory burden. If two plants are each disposing of 10,000 units of product per month, and they require two and three months respectively to manufacture, the first concern will be moving but two-thirds as much production through its plant at

a given time as the second. On January 1, the former company will have two months' sales in the process of production which will be completed on or before March 1, or 20,000 units; the latter company, however, since it requires three months to complete its product, will have to have in process such work as is to be completed on or before April 1, or 30,000 units.

Upon the completion of manufactured goods, there is the waiting period before sale. Concerns which manufacture to order or which sell as rapidly as goods are produced have no problem of financing finished inventory. The reverse condition would exist where it is necessary to carry on hand large stocks of finished product. Whenever any of the conditions with respect to operation or sale mentioned in this paragraph can be improved, inventories can be reduced and turnover can be correspondingly increased.

The terms of sale and the pace at which collections are maintained determine the amount of capital which will have to be tied up in the receivables. The concern which grants credit is obliged to finance not only its own inventory but the goods which are on the shelves of its customers.[7]

Easy terms of purchase will, in the reverse manner, aid a company in solving its working capital problem. Since advantageous cash discounts are ordinarily offered, trade credit will be used only when absolutely necessary. Available bank credit, which is less expensive than trade credit as a means of reducing the working capital requirement, is dependent upon the credit standards of the bankers. These standards are the result of a study of the amount and suitability of the current assets as a basis for short-term credit. The amount and character of the fixed assets may also influence the banker in establishing his line of credit, if there is no other indebtedness to be applied against them. The cotton textile mills, for example, are allowed a certain amount per spindle in addition to that credit which their working capital position justifies. Experienced bankers will also temper their standards in the light of current business conditions, making more stringent requirements in times of price uncer-

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[7] A hypothetical example showing the working capital requirements month by month for a new company engaged in selling adding machines is shown in C. W. Gerstenberg's *Financial Organization and Management of Business* (2nd rev. ed., 1939), pp. 446–449. The example chiefly illustrates the need for working capital that arises in a new and expanding business which extends considerable credit to customers.

tainty, particularly after a period of exceptional prosperity and price advances.

The points which have just been covered (points I to IV inclusive in the outline) are mainly significant in differentiating one type of business from another. As between individual businesses of the same type, variations will result from differences in the efficiency of management. A vigorous collection policy will, for example, reduce the volume of outstanding receivables. Operating conditions will also be made favorable for low inventories by improved production methods. Superior accounting and statistical control make for the maintenance of minimum inventories.

The attitude of the management, conservative or speculative, will be an important element in the situation. Conservative persons will avoid large inventories for the purpose of price speculation, will tend to carry larger amounts of cash, and will utilize bank credit to the maximum only in exceptionally difficult times.

General working capital considerations. The advantages of ample working capital have been summarized by C. W. Gerstenberg as follows: [8]

1. The morale of the management is maintained by the consequent feeling of security.
2. Trade credit is maintained by prompt payments.
3. Cash discounts may be taken.
4. Bank credit is made available.
5. Operations can be more efficient if adequate inventories are on hand.
6. Difficulties are met more easily in periods of stress.

The objections to redundant working capital are that:

1. Waste may be encouraged.
2. Manipulation, in the form of investment in undesirable side lines, may be invited.
3. Interest may be lost on idle or low-yielding bank balances.
4. The retention of funds which would more properly be used for business expansion or for dividends may be indicated.

Ratio study of working capital. The preceding chapter and this chapter up to the present point have discussed the anatomy of the working capital section of the balance sheet, as well as the general considerations governing its amount and administration. A suitable conclusion of this topic would seem to be a study of the usual relationships by which the reader is enabled to arrive

[8] *Ibid.*, pp. 456–457.

at a decision as to the strength involved. The primary objective of this study, as of most balance sheet study, is to determine solvency, that is, the likely ability of the business to meet its debts promptly and without loss.

The current ratio. The ratio of current assets to current liabilities is probably the most frequently used ratio or proportion. (A ratio may be defined as the relationship, or proportion, which one amount bears to another. It is expressed as a percentage or as a fraction, of which the first number is the numerator and the latter the denominator.) The "two-to-one ratio" is often referred to as a banker's rule-of-thumb test of the liquidity of a business. A demand for a 100-per-cent margin of current assets over the current liabilities is a precaution based on the practical knowledge of the possible shrinkage which may always occur in the property values of a business.[9] Such a requirement, where set up blindly, fails, however, to recognize the varying quality and characteristics of the current assets of different businesses. An even higher ratio does not assure liquidity in some cases. In a given class of retail stores, the quality of the receivables and inventory will vary considerably with the ability of the management. As between different kinds of businesses, the character or liquidity of the current assets, particularly the merchandise, will vary. For example, articles such as women's fashionable shoes are very much more likely to vary in value and salability than groceries.

Aside from these differences, left out of consideration in a blind insistence on the "two-to-one" rule, there is the further objection that the ratio is practically sure to change in any business that has any seasonal fluctuations in its trade. If the season starts from a dead halt, it will find accounts liquidated, shelves bare of stock, and cash in the bank. Activity begins with the purchase of merchandise and the assumption of debt. As goods are sold, the inventory is replaced by customers' receivables, while cash is diminished by the expenses of operation. The cycle is completed when the collections from the customers permit the liquidation of current indebtedness.

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[9] The current ratio might be inverted, dividing the current liabilities by the current assets, with the result showing the amount which it would be necessary to realize upon the current assets in order to pay the current liabilities in full. Thus, a four-to-one current ratio reversed would equal 25 per cent. If a business with such a ratio were liquidated and 25 cents were realized on the dollar, an amount would be had from the current assets equal to the current debt.

These changes in condition might be roughly illustrated in a balance sheet form as four successive steps, as follows:

	Current Assets		*Current Liabilities*	
1.	Cash	$20,000	Accounts Payable	$500
2.	Cash	$20,000	Accounts Payable	$40,500
	Inventory	40,000		
3.	Cash (less $10,000 expenses paid)	$10,000	Accounts Payable	$40,500
	Accounts Receivable (inventory sold at 50 per cent mark-up)	60,000		
4.	Cash	$30,000	Accounts Payable	$500

While this gives but a very crude picture of the cycle of business profit, it serves to bring out the point previously made that mere expansion of operations through purchases of merchandise reduces the current ratio. From a ratio of 40 to 1 ($20,000:$500), the ratio is changed to 1½ to 1 ($60,000:$40,500) by the addition of the same amount to both sides, a transaction involving neither profit nor loss. It is consequently necessary for the banker to know what the intentions of his customer are, as well as his present status, if he counts this ratio of any importance.

To summarize: the significance of the current ratio varies with (1) the seasonal influence, (2) the extent to which the balance sheet accurately reflects the actual values at the date of the balance sheet, (3) the proportions of the different current assets—cash being more stable than receivables, and receivables generally more stable than inventory, (4) the degree of risk of possible value fluctuation in the particular kind of business, (5) the probable expansion or contraction of operations likely to occur subsequent to the balance sheet date, and sometimes (6) the form of current liability (see the discussion of deferred income above). The weight of these factors is a matter of judgment based upon a knowledge of the business in a given line. A wide study of statement material develops the necessary background.[10] The second point in the list is checked by means suggested later in this chapter.

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[10] This, and other, balance sheet and earnings ratios for large corporations may be found already computed in some of the investment services, as *Moody's Investors Service* (see blue section of annual *Industrials* volume). The *Survey of American Listed Corporations* studies by industrial groups and of individual companies for various years, and *Statistics of American Listed Corporations*, a study by industry groups of 1937 figures, have been published by the Securities and Exchange Commission. Average ratios for medium and small concerns in retailing, wholesaling, and manufacturing may be found in *Behind the Scenes of Business* by Roy A. Foulke (New York: Dun & Bradstreet, Inc., rev. ed. 1937).

Limits on the line of credit. If in a given case "two-to-one" is regarded as a proper minimum ratio, the current creditors, by referring to the balance sheet, may find what the limit to their line of credit should be. In the preceding illustration there was at the start a working capital of $19,500 ($20,000 – $500). With a two-to-one ratio, the amount of the working capital represents the limit of credit which may be had from current creditors. The limit of expansion would show a statement reading as follows (accounts receivable are omitted for the sake of simplicity, and the cash may, of course, be used for further purchases in so far as it is deemed wise):

Current Assets:		*Current Liabilities:*	
Cash	$20,000	Accounts Payable	$19,500
Inventory	19,000		
	$39,000		$19,500

With a working capital of $19,500 and a minimum current ratio of two-to-one, the line of credit or maximum current indebtedness may not exceed $19,500, and the total current assets cannot be increased beyond $39,000. The size of the stock of goods which may be carried under these restrictions will be determined by the need for carrying cash balances and for extending credit to customers.

To reduce to a formula the procedure for finding the line of credit:

1. Subtract one unit from the minimum current ratio permitted.
2. Divide the amount of working capital by the result, and the quotient will represent the maximum line of credit.

Thus, if our minimum current ratio is 3 (that is, 3:1), there will always be required two dollars (3 – 1) of working capital for every dollar of credit granted. If, then, the working capital is divided by two, the maximum line of credit under the stipulated ratio is found.

The proportions of the current assets, current liabilities, and working capital will appear as follows when the minimum ratio of three is reached:

Current assets	$3	Current liabilities	$1
		Working capital	$2

Then, if working capital = $100,000,
the line of credit = $100,000 ÷ 2 = $ 50,000.

Consequently if the business with a working capital of $19,500 made any further purchases through an expansion of credit with creditors, the current ratio would fall below two to one.

It may be argued that the line of credit computation is of theoretical rather than of practical significance, since creditors act independently and no one of them is in a position to enforce a limitation. If a business paid its bills on virtually a cash basis and sought short-term credit only from a single bank, the latter would be in a position to set up such a credit limit and enforce it. In view of the greater cheapness of bank credit than mercantile credit in many lines of business, this course is at least possible.[11] Furthermore, if buying were concentrated so that one or a very few houses supplied the total short-term mercantile credit, a similar controlled credit situation might exist. That the significance of the point is recognized may be seen in the statement form of the Federal Reserve Bank of New York (see page 215), where the question is asked as to the maximum and minimum amounts of current liabilities during the fiscal year and the time of their occurrence. This information as to minimum indebtedness sheds light on the ability of the business to clean up its debts during the period of minimum need; the maximum permits a rough calculation of the current ratio when the high point of credit use is reached.

The desire to prevent overexpansion gives rise to the provision sometimes found in present-day bond indentures and in preferred stock agreements whereby the corporation issuing the security agrees that at all times it will keep the current assets in excess of the current liabilities by a certain per cent. Thus the requirement that "the quick assets shall at all times be kept at least 150 per cent in excess of the current liabilities" simply means that the former must always be at least 250 per cent of the latter—a two-and-one-half-to-one ratio. A business with a working capital of $1,500,000 could not, under the above rule, expand its current assets beyond $2,500,000 without exceeding the limit. At this point it would have:

Current assets..... $2,500,000 Current liabilities..... $1,000,000

(Working capital, $1,500,000; Ratio, 2½:1)

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[11] Gerstenberg, C. W., *Financial Organization and Management* (2nd rev. ed.), p. 462, footnote 23; Clark, F. E., *Principles of Marketing* (New York: Macmillan Company, rev. ed., 1932), pp. 396–399.

An understanding of this principle reveals the double evil of the malpractice known as "window-dressing." A comparison of the two following balance sheets will illustrate the practice. The notes receivable in the first statement were of a doubtful character, having been given by customers of past-due accounts. By discounting these notes, cash was realized which was used in the reduction of current debts, giving the condition shown for "B."

BALANCE SHEET "A"

Cash	$ 200	Accounts Payable	$ 6,000
Accounts Receivable	5,000	Net Worth	5,200
Notes Receivable	2,000		
Merchandise	4,000		
	$11,200		$11,200

BALANCE SHEET "B"

Cash	$ 200	Accounts Payable	$4,000
Accounts Receivable	5,000	Net Worth	5,200
Merchandise	4,000		
	$9,200		$9,200

The above transaction has made two changes that are likely to lead the analyst astray. The "window-dressing" has (1) improved the appearance of the current ratio, and (2) eliminated an asset that would probably have aroused unfavorable comment. If, however, the notes are not paid at maturity by the makers, this business will be called upon to pay them. A contingent liability was assumed upon the indorsement of the notes. This illustration shows why the vigilant auditor looks for discounted notes and insists on adding to the balance sheet a footnote indicating their presence.[12]

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[12] In contrast, a legitimate form of "window-dressing" would be the purchase of U. S. Treasury Tax notes, which may be used as payment for Federal income taxes, and their deduction from the accrued tax liability, instead of showing them as a current asset. The result improves the current ratio. Note that here no question can arise as to the acceptability or value of the asset for satisfying the liability from which it is subtracted. Also note the difficulties which may arise if a company fails to accumulate cash or tax notes during the year in which the taxes accrue if profits are not earned in the following year in which the tax liability becomes payable. For a discussion see "Accounting for United States Treasury Tax Notes" (Accounting Research Bulletin No. 14) issued by the Committee on Accounting Procedure, American Institute of Accountants, New York (January, 1942).

The limitation of credit to a given "line" is applicable even when the credit is extended by a bank in the form of discounting notes which the borrower has received from his customers.[13] If the restriction were not made to cover these borrowings as well as the notes given by the borrower himself, it would be possible to obtain credit in indefinite amounts, limited only by the concern's ability to secure notes.[14] Some believe this condition would be ideal if such notes were only those received from customers in the ordinary course of business for a normal credit period. The danger of such "unlimited" credit would arise from notes of unsatisfactory character, which would be apparent were the volume of notes known. The importance of this point is increased by the frequent omission of all discounted notes receivable in the calculation of the current ratio. The following working capital statement of the H. B. Claflin Company, for example, omits all reference to such discounted notes:

H. B. CLAFLIN COMPANY

STATEMENT OF WORKING CAPITAL
As of December 31, 1913

Cash	$ 2,800,000	Open Accounts	$4,500,000
Bills Receivable	2,100,000		
Accounts Receivable	2,000,000		
Merchandise	5,800,000		
Total Currents Assets	$12,700,000	Total Current Liabilities	$4,500,000
Working Capital			$8,200,000

A two-to-one ratio would permit the above working capital to support a credit line of $8,200,000—or even a one-and-one-half-to-one ratio, only $16,400,000. Actually, the Claflin Company had discounted about $30,000,000 of notes receivable in addition to securing trade credit of $4,500,000.[15] The notes were not all trade receivables, a fact which presumably would have been apparent from comparison with sales had the figures been available.

Ratio study would be improved, then, by the inclusion among

[13] Although the line may be more generous when customers' notes or acceptances are discounted. See the discussion above, page 72.

[14] The arguments for such lending are those for the use of the trade acceptance stated above on page 72. It might be argued that, once the sale of merchandise has been effected, the subsequent extension of credit is purely a "banking" function and so most properly shifted to the commercial bank and that bank credit extended for "general" purposes is likely to go into improper nonliquid uses.

[15] The case of the H..B. Claflin Company is discussed more fully in Chapter X, under the heading "Contingent Liabilities."

the current assets of all notes, whether discounted or not, until their maturity. An offsetting item would appear for the proper amount under the heading "Discounted Notes" among the current liabilities. While such a practice is unusual in the balance sheets of manufacturing and trading concerns, it is the form which banks employ to show the amount of notes received from their customers which they have rediscounted, and likewise that employed by the Federal Reserve banks.[16] The reader can appreciate the possible value of such a method by imagining its operation upon the statement of working capital just used, where such a form would have clearly revealed the condition of overexpanded credit.

Dollar assets and current debt. The frequent superiority of receivables to inventory as a basis for credit suggests a second ratio of "dollar" assets (that is, cash and receivables) to current liabilities as a supplement to the commonly used current ratio. (Cash and receivables are claims to a fixed number of dollars, while inventory has a fluctuating price.) A creditor bank might even find it desirable to have an understanding with its customers that both the current ratio and the dollar asset ratio be kept up to at least a certain standard. It might be wise, for example, in a given business, to keep the dollar assets at least equal to the current obligations at all times. In many lines of business, a concern whose current assets consist largely of inventory can very easily become technically, if not actually, insolvent within an incredibly short period of time, and so some writers have suggested calling this ratio the "acid test" or the "quick ratio."

Marketable securities, representing cash temporarily invested, are normally added to cash and receivables before this ratio is computed. When the investments are truly liquid, that is, both marketable and stable in price, no problem arises. But if the commitments can fluctuate in price, they hardly merit the designation of "dollar" assets and rather resemble inventories. Fortunately, concerns that possess marketable securities are generally those which invest because they have an abundance of working capital and do not have a current debt problem. Wherever the working capital is not indubitably strong, assurance should be had that the rule already cited of "cost or market, whichever is lower" is observed in respect to the marketable securities before they are included in the "acid test" ratio.

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[16] For the treatment of "rediscounts" by banks, see Chapter XVI.

Testing receivables. A third ratio, designed as a test of the receivables, compares that figure with the net sales. As suggested in the discussion of the current ratio, much of the significance of that widely used test of solvency depends upon the accuracy of the valuation of the current assets shown in the balance sheet. In most mercantile and manufacturing balance sheets, the receivables and inventories are of greatest importance, and any clue to their real current value is of the utmost importance. If the person making the study is privileged, as the banker usually is and the merchant creditor sometimes is, he may request that the accounts be classified as to whether they are overdue or not. Such a classification is better than one which distributes them under the headings "Good," "Doubtful," and "Uncollectible." Such terms are entirely too indefinite to indicate the degree of collectibility. If the report is for the executive, the latter may even have the overdue accounts divided still further, according to whether they are overdue from one to 30 days, 31 to 60 days, 61 to 90 days, or for a longer period. Such a classification, together with the amounts allowed for losses through bad debts, provides a basis for a general estimate.

A more definite test is found in the ratio to be had by dividing the receivables (accounts and notes receivable from customers only) by the average net credit sales per day. Thus, if the net credit sales for the year were $360,000, the average daily sales would be $1,000, and accounts receivable of $60,000 would give a ratio of 60:1 ($60,000 ÷ $1,000). (It is customary to use a 360-day basis rather than the accurate 365 days.) The receivables would represent, then, uncollected accounts for sixty days, or two months.[17]

The purpose of this comparison is to learn how old the accounts are. If in the above case the credit period is 30 days, it appears that at least half the accounts are overdue. If the average customer took the full period of 30 days, it would be expected that but one month's sale, that is, the accounts of those persons sold to in the last 30 days, would be outstanding. Less than that amount in the balance sheet would show that customers were prepaying or discounting bills. Since some customers are likely to prepay or discount their accounts, even a total of only

[17] The average collection periods in days for 60 lines of business activity, chiefly manufacturing, in the years 1931–1935 are reported in Foulke, Roy A., *Behind the Scenes of Business* (New York: Dun & Bradstreet, Inc., rev. ed., 1937), pp. 189–205.

30 days' sales in the form of receivables would indicate the probable presence of some overdue accounts. This test indicates the *average* age of the receivables.

In practice, the ratio of sales to receivables is sometimes used as a crude but more readily computed test of "receivables turnover." In this form it may be readily converted into the ratio suggested here by dividing the ratio into 360. Thus, if sales are 12 times receivables, then the business has 30 days' (360 ÷ 12) sales outstanding.

The lower this ratio is, with reference to the usual credit term, the less likely is the receivables account to contain old and valueless amounts. The more quickly the customers pay, the less the risk from bad debts, the lower the expense of collection, and the more liquid the nature of this asset. Clearly, where this ratio is high, indicating an unfavorable state, the greater must be the allowance for loss of value in the liquidation of the receivables, and the higher must be the current ratio in order to protect the current creditors.

Some credit men in estimating the position of debtor customers from their balance sheet apply some arbitrary method of elimination to accounts receivable which run in excess of the amount expected in view of the usual credit term. Thus, if the credit term were 30 days, the analyst might allow 100 per cent value for receivables equal to 30 days' sales, 50 per cent for receivables equal to another 30 days' sales, and a zero value for all receivables in excess of that amount. After making such a reduction in the valuation of the receivables, the current ratio and "acid test" ratio would be recomputed. Such a plan does not attempt exact justice, but is a practical rule of thumb based upon experience and designed to bring about some rough comparability between the ratios of debtors who obviously have receivables of greatly different quality or value.

A weakness in the use of this ratio is the frequent failure to take the credit sales only, omitting cash sales; but this use of total sales may be made necessary by the absence of detailed information. Again, seasonal variations are a factor. If a quarter of the year's sales were made in the month preceding the date of the balance sheet, it would be unfair to expect accounts receivable equal to only one-twelfth of the total year's sales. It might well be that the most convenient time for preparing a balance sheet would be just after the busy season, when the stock of goods was low, especially if the customers' bills had come due

and been collected. Both the seasonal factor and the length of the credit term granted customers must be considered in analyzing this relationship.[18]

The Retail Credit Survey (1938) of the United States Department of Commerce in its figures for the "per cent collected monthly on open credit accounts" throws indirect light on the amount of uncollected receivables which would be expected. Data are given for different lines of retail business in different

AVERAGE NUMBER OF DAYS ACCOUNTS OUTSTANDING AND AVERAGE PER CENT COLLECTED MONTHLY ON OPEN CREDIT SALES IN VARIOUS RETAIL LINES IN 1938

	Per Cent Collected	*Number of Days Accounts Outstanding*
Automobile	81.7	36.7
Automobile Tire and Accessory	56.1	53.4
Coal, Fuel Oil, and Wood	54.6	54.9
Department Stores	46.5	64.5
Furniture	44.9	66.8
Groceries	71.1	42.1
Hardware	50.2	59.7
Heating and Plumbing	58.3	51.4
Household Appliances	59.1	50.7
Jewelry	49.2	60.9
Lumber & Building Material	47.4	63.2
Men's Clothing	39.5	75.9
Shoes	47.2	63.5
Women's Specialty	41.5	72.2

parts of the country.[19] The figures suggest similar paying habits among retail open-credit customers in most lines of business save groceries and automobiles. The amounts given in the first column of the table (shown on this page) can be converted into the equivalent figures for the ratio of receivables to average daily credit sales given in the second column. If a business collects only 40 per cent of its accounts owing at the end of a month in the following 30 days, it will take two and one-half times 30

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[18] A table of customary terms of sale for a long list of commodities is given in Beckman, Theodore N., *Credits and Collections in Theory and Practice* (New York: McGraw-Hill Book Co., 4th ed., 1939), pp. 603–608. Also see Foulke, *Behind the Scenes of Business*, pp. 206–207.

[19] The reader interested in the performance in different sections of the country, in different months of the year, and of different-sized business units will find a wealth of material in this survey (*Domestic Commerce Series*, No. 109) and those for earlier years. Table in text is from page 16. The survey also gives the proportions of cash and credit business, and the percentages of bad debt losses for both open-credit and installment credit in these various lines of business.

days, or 75 days, to collect 100 per cent. An average of 75 days of uncollected credit sales would be expected of a business which showed 40 per cent collected monthly on open credit accounts. To calculate the figure for one column from the other, it is only necessary to divide the given figure into 30.

An examination of the original detailed figures shows that, in general, the smaller concerns were slower in their collections and suffered the larger bad debt losses.

While it is beyond the scope of this work to suggest what credit terms should exist, a note of caution might be added. The fact that a certain credit period has gained acceptance does not prove that it represents sound practice. Whenever the credit period is long, the danger of large and possibly fatal losses should be considered in the light of surrounding business conditions. Thus, when the cotton market broke in 1914 and again in 1920, the heavy losses of Southern farmers were reflected in credit losses not only of local houses, but also of many large-scale enterprises reaching into that territory.[20] Again, during the development of installment selling for automobiles and automobile trucks during the 1920's, competition and lack of experience led to overlong credit periods and unduly heavy credit losses. Stricter credit policy, especially in installment selling, during a period of war inflation should reduce losses in any postwar deflation.

Testing inventory. The fourth important ratio is a test of inventory to judge its probable quality. It is a comparison of the amount of goods sold per year with the stock carried. The method of stating this ratio may be either:

$$\frac{\text{Cost of the Goods Sold}}{\text{Inventory at Cost}}$$

or,

$$\frac{\text{Sales}}{\text{Inventory at Selling Price}}$$

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[20] The large amounts tied up in uncollectible receivables were an important factor in the financial difficulties of the Virginia-Carolina Chemical Company and the International Agricultural Corporation, both engaged in the production and sale of fertilizer. It was reported in connection with the reorganization of the first-named company that bankers felt that the credit methods of the entire industry needed revision, and that the differential in prices to cash and to credit customers needed increasing so as to offer a decided encouragement to the payment of cash.

The result is called the *merchandise turnover.* If goods costing $12,000 were sold, and a stock of $1,000 at cost is carried on the shelves and in the stockroom, the merchant would be said to have turned over his stock 12 times. Since the amount of inventory is likely to fluctuate, the most nearly exact method of figuring this ratio would be to use the average figure for the year. To obtain an average, the business must either keep a perpetual inventory, that is, a record which shows the exact balance of stock on hand at any given date, or take inventory at frequent intervals. Such figures are available only to the management. The ratio is useful, when employed with judgment, as a rough index of whether stocks are excessive or subnormal with relation to the volume of business.

The creditor or investor must ordinarily be content with annual balance sheets, and so knows only the initial and final balance sheets for the year. The two inventory figures thus available may be averaged to compute merchandise turnover. Other methods are possible. Some agree that since stock is purchased with respect to *future* sales prospects and can be turned only *after purchase,* the initial inventory should be used in computing turnover. Probably, however, in computing this ratio the final inventory figure alone is most frequently used by persons outside the business. Sometimes, only a single annual report is available. In any case, the outsider is as much, or more, interested in testing for excessive inventory on the principle that its presence may reveal overvaluation as he is in merchandising efficiency and proper stock control. By testing the quality of the inventory figure, the significance of the current ratio as a measure of solvency is clarified.

This practice may be criticized on the ground that the final inventory is not representative of the stock carried during the year, and, therefore, is no fair basis for testing the turnover or merchandising efficiency. Thus, a manufacturer might have an enlarged inventory of supplies in anticipation of a very much expanded business for the ensuing year. This larger inventory would result in an understatement of his turnover for the preceding year as compared with the result which would have been obtained had the beginning inventory or average inventory for the year been used in figuring this ratio. In general, however, the final inventory is as representative as the beginning inventory. The outstanding advantage of employing the final inventory is that it is the inventory of chief interest to the analyst

for credit purposes, and this ratio is used not only to test turnover efficiency, but to give an idea as to whether the size of the inventory itself is proportionate to the volume of business.

If the analyst after learning what normal turnover is finds that the business under study has an inventory at the end of the year so large as to give a subnormal rate of turnover, he should seek the reason. Three unfavorable possibilities are suggested: (1) that the stock contains accumulated unsalable goods; (2) that the business has overbought; or (3) that the value of the stock has been overstated.

It is well, however, to look forward as well as backward, since the stock held at the end of the period is to be sold in the following period. Thus what might seem to be an overbought condition may be forehanded purchasing for an expanding market. On the other hand, an apparently normal inventory may be an overstock in view of a waning demand.

Another limitation upon the analysis by the outsider is his inability to obtain the figure for the cost of goods sold. The details usually provided are limited to Sales and a lump figure representing the sum of the cost of goods sold and operating expenses. For want of a better method, the ratio is then computed as Sales (goods sold at selling price) to Inventory (goods in stock at cost price). The result is not true turnover but an overstatement by the per cent which sales exceed the cost of goods sold. The figure is useful, however, for comparative purposes.[21] If the analyst is familiar with gross profit margins of the particular line of business and they are not too variable, he can estimate a figure which will be substantially correct from the formula:

$$\frac{\text{Sales}}{\text{Inventory}} \times \text{Usual Ratio of} \frac{\text{Cost of Goods Sold}}{\text{Sales}} = \text{Actual Turnover (approximate)}$$

Thus, if the gross profit margin is usually 20 per cent, it is the equivalent of saying that the cost of goods sold is usually 80 per cent of sales. To get actual turnover, the ratio of sales to inventory would be multiplied by 80 per cent, and in a case in which the ratio was 5, true turnover would be 4.

What the turnover should be for any given business must be determined by the experience of concerns in that line. Recent

[21] See footnote 10, page 94 above. Inventory turnover is reported for fifty lines of trade in Mitchell, Walter L., Jr., *Standard Ratios for Retailing* (New York: Dun & Bradstreet, Inc., 1940).

researches have shown that among retail stores in certain lines, a close relation exists between size and turnover, the larger units showing higher turnover.[22] Hence, the averages in the following table are subject to variation growing out of natural differences in operating conditions:

TABLE OF AVERAGE STOCK TURNOVERS FOR RETAIL STORES*

Dairy & Poultry Products	36
Restaurants	26
Filling Stations	16
Groceries (Independent)	10
Specialty Stores	5
Drugs	3
Furniture	2.7
Dry Goods & General Merchandise	2
Hardware	2
Shoes	1.8
Jewelry	1

* Compiled from Mitchell, Walter L., Jr., *Standard Ratios for Retailing.*

The chief cautions to be observed in the use of this ratio are to allow for:

(*a*) The seasonal influence, when present. If the balance sheet of a manufacturer is made up in a slack season, when inventory is much less than average, an impression of very high turnover is given.

(*b*) Conditions of supply which require stocking in advance. A chain of metropolitan grocery stores with markets at their doors and therefore able to replenish stocks on a few hours' notice might well show better turnover than a rural store located at a distance from markets.

(*c*) Difference in functions by businesses in nominally the same field. Of two chain store systems, one might buy at wholesale what it sold at retail while another might engage also in warehousing, importing, and even manufacture. Of two manufacturers, one may do little more than assemble parts made by others, while another may not only carry on the manufacturing but may also acquire sources of raw material and integrate a long series of processes. The more functions assumed by the

[22] Illustrations of the relation of turnover and store size for hardware, department, and specialty stores, drawn from results of the Harvard University Bureau of Business Research, are shown in convenient form in John W. Wingate's *Retail Merchandise Control* (New York: Prentice-Hall, Inc., 1933), p. 170. For a discussion of the turnover problem, see Duncan, D. J., and Phillips, C. F., *Retailing Principles and Methods* (Chicago: Richard D. Irwin, Inc., 1941), pp. 424–435.

business, the longer the period between purchase of inventory and its sale in final form, or, in brief, the slower the turnover.

(*d*) The trend of prices. Larger inventory and consequent lower turnover is likely when the prospect is for higher prices, and vice versa. While such a course is speculative and should be kept within bounds, it is a necessary incident of business.

(*e*) The trend of volume for the business. Since stock is purchased for future sales, the inventory may reasonably be somewhat higher than usual in relation to past sales when the prospect is for larger volume.

Overstock and fraudulent failure. Overstock is a weakness, but it may mean more. It is a likely forerunner of the fraudulent failure. The proprietor who intends to defraud creditors first establishes his credit with a few houses by prompt payments. He later buys as widely and as heavily as possible on the basis of this reputation and then makes away with such assets as he is able. This method of fraud is so well recognized that agencies supplying credit information watch closely whenever a debtor suddenly shows unusual buying activity.

This condition can seldom be detected in the statements, since it is a disease which works rapidly from what is superficially a normal business condition. While the business that fails fraudulently in this way is ordinarily a new one and frequently has a proprietor with a doubtful history, there have been instances where these frauds have been worked by unsuccessful merchants who have become disheartened by their lack of success. Some of the latter cases have been traced to the instigation of persons with a bad record who were familiar with the "profits from failure."

Current debt turnover. The "current debt turnover" ratio is designed to show how long the business would require to retire its current debt. It parallels the test of receivables described above but is usually stated on a per-month basis, although the day basis could be employed. The formula is:

$$\frac{\text{Current Debt}}{\text{Sales Minus Expenses (Average per Month)}}$$

Thus, if sales amounted to $5,000 per month and expenses were $1,000, a balance of $4,000 would be available to retire current debt. If the latter amounted to $6,000, it would indicate that one and a half months would be required to retire such debt. This period is regarded as the probable average length of time

which the debtor will take to pay. The test is crude but often useful in mercantile credit work, where it can be checked against the actual record of the debtor, by inquiry among his creditors and by an interchange of ledger experience.

The weakness of this ratio may be seen by noting the conditions necessary to make it a true test.

1. Seasonal influence would have to be absent. Because the average monthly sales and expenses are used, it is being assumed that the flow of business is regular throughout the 12 months.

2. Accounts receivable would have to be paid at the same rate at which sales are made. Sales are used in the formula as though they provided cash immediately for the payment of debt, a condition true only of cash sales. But if old receivables are collected in amounts equal to those at which new ones are being added by sales, then all sales, whether cash or credit, may be treated alike in the ratio. This condition would be untrue (*a*) in a seasonal business, (*b*) when a business was growing rapidly, or (*c*) when receivables were growing because of a weak collection policy.

3. No part of the current debt should be carried along by regular renewals. If a part of the current debt were in bank loans which were being renewed from time to time, then the accounts payable could be paid more promptly. Thus, if one-third of the $6,000 current debt mentioned in the illustration were in a bank loan renewed as it came due, then the $4,000 of net receipts each month would equal the remaining two-thirds of the current debt. Such a concern enjoying a 30-day credit period should be able to pay its bills promptly.

4. No distribution of profits should be made. If cash is distributed as dividends or as withdrawals of the proprietors, such amounts, like the expenses, reduce the net receipts available for debt-paying purposes.

5. No cash should be used outside the working capital section of the balance sheet. If cash is used for making fixed asset additions or for retiring fixed liabilities or stock, the net receipts are less than indicated by the formula.

The list of assumptions which are being made when this ratio is employed explain why its use is ordinarily limited to the field of mercantile and bank credit analysis where the concerns are known to be relatively nonseasonal in their business and fairly static in condition.

Composite turnover ratios. Some have argued for a "turnover of total current assets" ratio, to be obtained by dividing the total of current assets into sales. At best, it may be said that such a ratio will reflect in a blurred composite, the joint influence of the two major current assets, receivables and inventory, which are more fittingly analyzed separately in their relation to sales volume. The factor of cash, or cash and marketable securities, cannot be fittingly analyzed with respect to sales alone. Small cash in relation to sales would help to raise the "current asset turnover" and so produce the impression of "efficient turnover" but it might really mean that the concern was hampered by inadequate cash. On the other hand, large cash resources which would lower this ratio and so show "inefficiency," in spite of satisfactory receivables and inventory turnover, would merely mean a strong current position. Moreover, high turnover of inventory and receivables means speedy conversion into debt-paying ability, but a high turnover of current assets resulting from small cash balances would actually mean less ability to meet obligations promptly.

Another allied ratio is the working capital turnover ratio: Sales divided by Working Capital—designed to reveal the efficiency with which the working capital is employed. To the extent that this ratio is the resultant of the relation of receivables and inventory to sales, it contains a significant element in common with the current asset turnover ratio; but its use is open to all the objections made against the latter plus the fact that it introduces the influence of current debt. If the business suffers from a relatively high current debt—that is, has a low current ratio—the business will show a relatively higher ratio of sales to working capital. A high working capital turnover may reflect efficient receivables and merchandise turnover, but it may just as well reflect the combination of a dangerously low current ratio balancing an inefficiently slow receivables and merchandise turnover. But a ratio which can tell either of such opposite stories, clearly tells nothing. The composite is merely a useless blur of a number of relationships of which the chief are more suitably studied individually in the ratios previously discussed, namely, the current ratio, the receivables test, and the inventory test.

An illustration of the points made with respect to these two composite ratios follows. (They are composite because they represent a complex of influences which are subject to individual analysis.) The sales and current assets for Companies *A* and *B*

are alike, so that current asset turnover is the same. The reason the ratios are alike is that the stronger cash position of *A* lowers its ratio to *B*'s figure, although *B* shows slower turnover of receivables and inventory. As for working capital turnover, *B* has a higher and presumably more favorable figure largely because of its higher and presumably unfavorable current debt.

COMPARATIVE WORKING CAPITAL OF COMPANIES *A* AND *B*

	A	*B*
Cash	$ 10,000	$ 5,000
United States Bonds	15,000	—
Receivables	10,000	20,000
Inventory	25,000	35,000
Total Current Assets	$ 60,000	$ 60,000
Current Debt	$ 10,000	$ 30,000
Working Capital	$ 50,000	$ 30,000
Sales	$100,000	$100,000

Receivables to merchandise. It has been pointed out that when merchandise is sold, a profit has been added, thereby raising the proportion of current assets to current liabilities. Because of this fact, it is argued that the current ratio is "inflated" to the extent of the profit. As a matter of fact, the gross profit is largely offset by operating expenses incurred during the same period. To draw an analogy between carrying merchandise at selling price and carrying receivables at their face value is to ignore the fact that the sale marks the point of profit realization. An increase in the ratio of receivables to merchandise is not necessarily a signal for raising the current ratio requirement; the change normally denotes increase of strength in the asset group in that the receivables are often a more liquid item. An increase in the proportion of receivables will represent a weakness only when it is due to slower collections or accumulated bad debts—a condition to be detected from the sales to receivables ratio. When the ratios previously discussed have been studied, the ratio of receivables to merchandise adds little or nothing to the information of the analyst.[28]

Summary. The study of working capital is primarily a test of short-run solvency, although some light may be shed by it

[28] Other ratios relating to working capital position which have been suggested are (*a*) Cash to Current Assets, as a test of liquidity, (*b*) Cash to Notes Payable, Bank Loans, or Current Debt (see page 99), (*c*) Receivables to Current Assets, as a test of frozen receivables, and (*d*) Inventory to Current Assets, as a test of overinvestment in inventory.

on the effectiveness with which the business is being conducted. Tests of receivables and inventory should be regarded primarily as relating to solvency rather than to efficiency. Definite and fixed standards of turnover should always be held as tentative, for the final test of the effectiveness of business management is found in the ability to produce adequate profits. Where, however, the profit test (discussed later) has been applied and appears satisfactory, a question may be raised if the study of receivables and inventory suggests slow collections and low stock turn. The possibility exists that reported profits may be actually overstated because of a failure to make sufficient allowance for losses from bad debts and from obsolete or shop-worn merchandise.

The study of working capital will ordinarily involve: (1) the proper arrangement of the balance sheet items, if that has not already been done; (2) a scrutiny for unusual or improper practices; and (3) the computation and study of the ratios suggested, which are: (*a*) the current ratio, (*b*) the "acid test," or ratio of current assets less inventory to current debt, (*c*) the receivables test, (*d*) the inventory test, and sometimes (*e*) the ratio of current debt to the excess of average monthly sales over expenses. Some further discussion of the subject will appear in appropriate places in the subsequent chapters.

CHAPTER VI

Analysis of Fixed Assets and Capitalization

Relative importance. The fixed items of the balance sheet present even more intricate problems for the skillful analyst than the working capital section of the statement. Where the fixed properties and the capital liabilities through which they were secured make up the bulk of the balance sheet, their analysis becomes vitally important. While the banker and the mercantile creditor very generally regard this half of the balance sheet as of secondary importance, to investors in the business it is likely to be equally as important as the working capital section if not of primary interest.

The double balance sheet. With this second portion of the balance sheet before us, we are presented with two problems: (1) What is the proper value of these fixed properties? and (2) What relation do these assets bear to the opposing security issues? The current items should at least be classified and separated in order to make the figures to be analyzed stand out more distinctly. The following is a special form of double balance sheet which divides the balance sheet into two parts: the first shows working capital, and the second, fixed assets and capitalization.

As the current assets exceeded the current liabilities, it was necessary when making a division to put their difference on the asset side of the fixed capital section, to bring the latter into balance. This treatment emphasizes the fact that the working capital is that part of the current assets contributed by the investors (bondholders and stockholders) instead of by the current creditor group.

Asset valuation. "Value" has such various meanings that it is desirable to state some of the chief ones. The differences between these meanings should be kept in mind in any discussion, since they explain many of the discrepancies existing between "valuations" made by different persons. Standards of valuation

NATIONAL DAIRY PRODUCTS CORPORATION

CONSOLIDATED BALANCE SHEET
December 31, 1940

Working Capital Section

Cash	$ 16,900,000	Accounts Payable	$ 17,600,000
Accounts & Notes Receivable (net)	17,600,000	Reserve for Federal Taxes	4,600,000
Inventories	29,800,000	Debentures Maturing in 1941	1,500,000
Supplies	4,000,000	Payable to Foreign Subsidiaries	300,000
Life Insurance—cash surrender value	400,000	Working Capital (see below)	44,700,000
	$ 68,700,000		$ 68,700,000

Fixed Capital Section

Working Capital Balance	$ 44,700,000	Serial Debentures, 1942–1950	$ 13,500,000
Plant & Equipment	145,200,000	3¼% Debentures of 1960	55,000,000
Less Reserve for Deprec.	50,200,000	Minority Stockholders' Interest	300,000
Properties (net)	95,000,000	Reserve for Contingencies	3,000,000
Investments & Advances	5,800,000	Common Stock	51,300,000
Invest. in Foreign Subsidiaries (net)	5,400,000	Capital Surplus	2,200,000
Prepaid Expenses	900,000	Earned Surplus	48,500,000
Goodwill	22,000,000		
	$173,800,000		$173,800,000

Note: The original balance sheet is condensed and rearranged here for the sake of simplifying the illustration. Figures rounded to nearest hundred thousand.

will vary with the purpose in each case. Because fixed assets are less liquid and are turned over only after long intervals or not at all, the problem of their valuation is more complex than that of current asset valuation.

The first, and the most generally accepted, value, for balance sheet purposes—as stated in the discussion of balance sheet construction—is the original cost with proper deduction, or offsetting reserve, for depreciation.[1] This method of valuation provides a uniform and objective basis for judging present value, even though its usefulness after a period of violent change in the price level is open to question. Despite the virtues of the cost basis in preventing arbitrary manipulation, several disturb-

[1] Indicative of the common practice is the statement of the Texas Corporation in its annual report for 1932 to the effect that in acquiring the properties of the Indian Refining Company it had charged off $1,275,824 appreciation of physical properties previously capitalized by the latter company. Its own policy, as stated, is to carry property at cost less depreciation and depletion.

ing possibilities, illustrated by the following questions, still remain:

1. Was the original purchase price inflated or more than the market value at the time of purchase?
2. Have repairs and ordinary maintenance been improperly added to the amount, as though they were additions and betterments?
3. Have betterments or improvements been made without any corresponding increase in the book value of the property?
4. Are allowances or reserves for depreciation inadequate or excessive?

Replacement value less depreciation. These vexing problems explain one reason for the advocacy by some of a second valuation standard, that of present replacement value with due allowance for depreciation. If one is a stockholder, he is interested in the value of the properties on the basis of present construction costs. If the value represented is greater than original cost, a prospective competitor would be obliged to calculate on so much greater investment of capital. These higher costs of securing capital enable those already in the field to take profits, not in proportion to original investment, but up to the point where the profits would yield a rate of return sufficient to induce potential competitors to make the increased investment necessary to enter the field, provided, of course, there are not already so many producers in the field as to result in excessive competition.

This cost-of-replacement figure may be important in the case of public utilities subject to rate regulation. If the regulatory body has a valuation of the property made, it is likely to be on the cost-of-replacement basis, and it may give weight to that valuation in determining the amount of "invested capital" upon which the utility shall be allowed to earn a fair return.[2]

The two chief reasons for the use of a new appraised valuation rather than original cost less depreciation are: (1) the difficulty,

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[2] However, the current tendency is to lay primary, if not complete, emphasis upon original cost less an allowance for depreciation. The calculation of the fair value of a public utility's properties for the purposes of regulation requires both legal and engineering ability. For further reference on this subject, *Valuation of Public Service Corporations*, by Robert H. Whitten and Delos F. Wilcox (New York: Banks Law Publishing Company, 2nd ed., 1928, 2 vols.), may be used. This work covers the legal and economic phases of valuation for rate-making and public purchase.

in many cases, of obtaining from the corporate records information sufficiently accurate to justify the use of the latter figure in determining "value"; and (2) the constantly changing level of construction costs. After the rising prices of the first two decades of the present century, some argued that public utilities should be given the benefit of the higher prices by being allowed to use a reproduction or replacement, rather than an original cost, basis of valuation.[3]

Industrial corporations find other possible advantages in an appraisal of their fixed assets. In some cases, the appraisal may be desired because of the difficulties of interpreting the fixed asset accounts, which may show only as one or more lump sum amounts on the books of the company and which may represent an accumulation over a long period. In other cases, a permanent inventory (that is, a detailed record of the cost of the individual pieces of real estate, machinery, etc.) may have been kept, but the figures may be wholly unrepresentative of current price conditions. The possible reasons for revaluation or appraisal are as follows:

1. To provide the basis for a permanent fixed asset inventory, where none has been kept before.
2. For its effect on plant accounting. Since depreciation charges are based on book cost, two changes will result from a change in that figure.
   a. The operating costs will be increased if the appraised value is greater than former book value, and vice versa. Some believe that operating costs should be based upon current rather than upon historical prices.
   b. The amounts reserved from earnings by the depreciation allowances will more nearly equal the amounts required to replace the depreciated assets, if the basis for figuring is replacement cost. This point is

[3] Such persons frequently overlook the fact that increased earnings cannot remedy the position of the bondholders and preferred stockholders who supply so large a part of the funds of our utilities. Moreover, those who advocate revaluation usually fail to note the possible results under a falling price level. A policy of revaluation in such periods would tend to confiscate stockholders' interests and possibly reduce the margin of safety to bondholders to a point which would threaten the financial standing of the utilities. Such weakness might, in turn, prevent the financing of improvements or expansion essential to adequate service to the public.

particularly important after a period of rising prices. Depreciation allowances based on original cost may be quite inadequate to conserve the true investment at the higher price level.

3. To serve as a basis for recapitalization, as by stock dividends.
4. To determine the present value of the fixed assets in the event of the sale of the business or its consolidation with others in a combination.
5. To show the current condition in the event of financing, as in the case of a sale of securities.
6. To provide a basis for possible fire-loss adjustments. Under the present-day "co-insurance" clause, it is particularly essential to know current values, for otherwise, under-insurance may reduce the protection of existing policies.[4]
7. To provide data for tax adjustments.

Some accountants, who are influenced by the reasons which have just been given, agree that revaluations may be made and introduced on the books provided that original cost and applicable depreciation are not obscured.[5] Where the appraisal results in an increase in the book value of the assets, it would be proper to require that the increase be reflected in a special surplus or Surplus Reserve account, so that the profit and loss surplus will not be affected and the increase will not be used as a basis for dividends (other than stock dividends). The persons making the appraisal and the method of appraisal should be clearly stated in the annual financial report of the company. There are concerns which devote themselves exclusively to appraisal work.[6]

Market value. Most frequently, the market value of the properties of a going concern as an aggregate bears no close relation either to original cost or to the cost of replacement less depreciation. The business is a profit-returning investment, and

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[4] For a description of co-insurance, see Riegel and Loman, *Insurance Principles and Practices* (New York: Prentice-Hall, Inc., rev. ed., 1929), p. 367.

[5] Paton, W. A., *Advanced Accounting,* pp. 337–338 (New York: Macmillan Co., 1941).

[6] Since appraisals are made only at infrequent intervals, if at all, they should be made when price conditions appear to be fairly stable, so that the valuation may continue to have usefulness for the statement reader for a maximum length of time. Revaluations made in the depth of the depression in 1932 and 1933, when prices were abnormal and unstable, appear to have been ill-advised in this respect.

the investment market sets its value in proportion to its estimate of future profitableness. If, for instance, the purchase of the properties of the General Electric Company or the Coca-Cola Company were contemplated, both book value and replacement value would be of secondary interest. The purchase price or market value of their properties would be determined by the prospects of income to be derived from ownership. From this viewpoint, the balance sheet, together with the earnings statement, is merely an aid in making a forecast of the probable value of the properties as an investment. The market value of the stockholders' interest—and indirectly the value of the properties as a going concern—may be found by multiplying the market value of a share of stock by the number of shares outstanding.

Liquidation values. A fourth method consists of a valuation of the assets on a liquidation basis. This attitude is often taken by the cautious creditor who will venture only where he feels protected against the worst—a state of bankruptcy. It may be objected that such a basis is unfair to any business. Such an objection overlooks the natural difference in temperament between the various persons supplying funds to a business enterprise. A conservative creditor like the banker who takes but a small rate of return should not be expected to take disproportionate risks.

These different uses of the term "value" are not to be thought of as conflicting, but rather as the result of different viewpoints, each of which serves a different purpose.

Tangibles and intangibles. The fixed assets fall into two general groups—tangibles and intangibles.[7] The usual examples of the latter group are goodwill, patents, copyrights, and, sometimes, franchise rights. These assets are neither physical goods nor evidences of property such as notes or bonds. These intangible assets may be valuable, but the value to be assigned to them is so much a matter of opinion that conservative businesses frequently eliminate them. Sometimes the analyst removes them from the total of assets before calculating the book value of the stockholders' rights. A report using this reduced figure

[7] The accounting and financial, rather than the legal, usage of the word "intangible" is employed here. In legal and tax circles, "intangible" is applied to property rights evidenced by instruments, such as stocks, bonds, notes, and accounts, and the term "tangible" reserved for physical goods, such as real estate, machinery, and inventory.

should refer to the resulting figure as "the net tangible assets available for the common stock" rather than "the book value of the common stock."

In the balance sheet of National Dairy Products Corporation, for December 31, 1940, as shown above, the Common Stock appears as $51,300,000. When the Capital Surplus of $2,200,000 and the Earned Surplus of $48,500,000 are added to this figure a total figure of $102,000,000 is arrived at as the book value of the common stock. (Had a Deficit existed instead of Surplus, it would have been deducted.) This figure has relatively little significance as compared with the "net tangible assets available for the common stock," that is, the total *tangible* assets at book value which would remain net after settling all prior claims. Since National Dairy Products Corporation has goodwill of $22,000,000, the net tangible assets available for the common stock amount to $80,000,000. A further deduction would have to be made in case of any accumulated and unpaid preferred dividends, which are a claim upon the tangible assets prior to that of the common stock. Such an accumulation is often mentioned in the balance sheet in a footnote but not shown in the liability column since it becomes a liability only after declaration.

When the net tangible assets for the preferred stock is being computed, the claims of the preferred stock are not deducted and the total net worth is taken and a deduction made for the amount of the intangibles. In this case, the net worth does not include any preferred stock, as it was recently retired through the sale of low interest rate Debentures. A substantial portion of the latter is in serial form to be retired as they mature each year between 1942 and 1950.

Should the net tangible assets for the bonds be desired, the sum of the bonds and the net worth is found and the intangible assets deducted. This practice is followed even though its effect is to treat all the debts other than the bonds as prior claims, which they clearly are not when, as in this instance, the bonds are debentures. Should this practice, which is commonly followed in security analysis, give a very misleading figure, because it fails substantially to show "the tangible assets available for bondholders net after *prior* claims," the resulting figure should be either dropped or amended so as to give a comparison of net tangible assets with all of the debt which stands upon a common ground of priority.

To summarize the preceding:

1. Book value of common stock = $102,000,000.
   ($51,300,000 + $2,200,000 + $48,500,000.)
2. Net tangible assets available for common stock = $80,000,000.
   ($102,000,000 — $22,000,000.)
3. Net tangible assets per share of common stock = $13.
   ($80,000,000 ÷ 6,255,000 shares.)
4. Net tangible assets available for preferred stock. None outstanding.
5. Net tangible assets for debenture bonds = $148,500,000.
   ($80,000,000 + $68,500,000.)
6. Net tangible assets per $1,000 bond = $2,168.
   ($148,500,000 ÷ 68,500.)

Note: The foregoing figures omit the Contingency Reserve of $3,000,000, which may constitute surplus.

In the foregoing solution, three points should receive particular attention, for they involve procedures which recur commonly in analytical work.

1. *Preferred stock.* The par value of the preferred stock rather than the call price is used as the amount of the prior claim of the preferred in figuring the balance available for the common. In the case of preferred stock without par value, a nominal amount sometimes appears in the balance sheet. In such cases, the most logical figure to employ as the equivalent of par is the amount which the preferred would receive as a prior claim in the event of involuntary liquidation.[8] That figure is ordinarily a round sum, such as $100, $50, or $25, and will usually be found to bear a normal relation to the stipulated preferential dividend.

2. *Discount on bonds.* No unamortized Discount on Bonds appears among the assets of this company, but where a bond issue is sold for less than its face amount the full par value is nevertheless shown as a liability and the discount set up in that section of the assets devoted to deferred charges. Some analysts regard the bond discount so reported as an intangible asset and deduct it in finding net tangible assets. The better practice

[8] If, as a result of taxation of capital stock, the practice of using a nominal par value for preferred issues should develop to take the place of no par stock, it will become necessary to adopt the same rule of "amount of preference as to assets in involuntary liquidation" as a substitute for par value in these computations. In some unusual cases, the preferred stock will not be preferred as to assets, but will share equally in some stipulated proportion with the common stock.

would be to treat it like the prepaid expenses for the purposes of that computation, as though it were tangible. Actually, from the standpoint of financial mathematics, the item is an offset to the bond account, the difference giving the current, or present, value of the liability, which approaches par as maturity comes nearer. The treatment of bond discount as an intangible results in the anomaly of the corporation's showing much lower net tangible assets for the common stock after financing simply because the company had found it advantageous to float a bond at a discount rather than to attach a coupon high enough to make it salable at par or at a premium.[9]

3. *Reserves.* The item appearing as Reserve for Contingencies in our condensed balance sheet appears in the original statement as two amounts under the titles: "Insurance" and "Prior years' Federal income taxes and general contingencies." Since the company has apparently provided adequately for all *known* liabilities elsewhere and these amounts represent no known asset losses or certain liabilities, they are, in effect, surplus under a special heading. On such grounds some would add them to the surplus in the computations made above. A safer and more conservative course is to omit them and state in a separate figure the amount which their inclusion would add to the book value of the common stock. In this case, these reserves would add 48 cents to the book value of each share of common stock. Sometimes these reserves have very substantial importance.

Real estate. In the balance sheet of an individual corporation, there is frequently one large amount labeled "Plant and Equipment," or "Real Estate, Machinery, etc." [10] Sometimes the title is very broad and intangibles are included under it. The latter procedure is an especially bad practice. In the better type of balance sheet, not only are intangibles shown apart, but the real estate or land and buildings are shown separately from the other fixed tangible property. An example of separate treat-

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[9] It has been argued that discount it not an offset to the bonded debt because par value is the "real liability in the event of default." Such a position employs a liquidation or bankruptcy point of view rather than that of a going business, which is more normal.

[10] This heading should include only fixed assets used in operations. Fixed assets no longer in use should be stated separately and are characteristically valued at liquidation value since they are no longer elements of the going concern and are to be disposed of as soon as that can be done advantageously.

ment of the several items of the Property account appears in the balance sheet of:

RAYONIER, INCORPORATED

As of April 30, 1941

Property, Plant, and Equipment, at Cost:	
Buildings and Structures, and machinery and equipment	$30,671,323
Less Reserves for Depreciation	9,692,856
	$20,978,467
Construction in Progress, the Estimated Additional Cost of Completion of which was $335,000	321,746
Land	425,836
Timberlands and Timber, Less Depletion	1,599,075
Total	$23,325,124

It is further desirable that the land be shown apart from the buildings. Land is not subject to depreciation allowances as buildings are. Land is valuable as a site; the value of buildings rests in their adaptability to use. The value of a building may decrease while the value of the site is increasing. In addition to being used as a site, land may be held as an investment, or for resale, as in the case of real estate speculation. Also, it may be held for the sake of its natural resources, such as minerals, timber, water power, or other rights to be obtained through the ownership of the land. Where held for a special purpose, it is desirable that it be shown separately, as were the Timberlands reported above.

The matter of land value is of interest to the alert financial manager. A site used for a factory might conceivably become so valuable as to make it profitable to sell the land and move to another location. The current value of a given site may be estimated by comparisons with similar parcels of land in the vicinity which have recently been sold. Assessed valuations are very frequently quite unreliable.

The factor that makes a given site valuable is its surroundings, that is, whether it is situated in a residential, commercial, or industrial neighborhood, and the character of that neighborhood.[11]

In the valuation of buildings, it should be noted that the present value of two buildings that originally cost the same to construct may vary later with location, age, type of occupancy,

[11] The valuation of land giving title to mineral deposits is considered later in the chapter devoted to mines (Chapter XV).

and (in case of the liquidation of a business) the adaptability of the structure to other uses. The first two factors are readily recognized, but the latter two are sometimes overlooked. A building constructed for theatrical purposes or for a banking house is specialized and cannot be used for another purpose unless virtually rebuilt. A more general type of building can usually, when the tenants are unsuccessful, find new occupants much more easily.

Lack of adaptability of the banking structure, together with the extreme conservatism of some bankers, helps to explain why the value of buildings is sometimes understated in the bank balance sheet. The building's book value may have been reduced year by year until it very materially understates the real estate item and so the surplus. Such procedure may be detected by the analyst who will study this asset from year to year.

An error that must be guarded against is the stating of the value of the real estate less any mortgage, thereby showing only the net equity or difference in the assets—a procedure which is clearly misleading. A building worth $50,000 free and clear is quite different from a $120,000 building with a $70,000 mortgage on it. The former would, in the event of a forced liquidation of the business, in practically every case yield a larger amount for the general creditors.[12]

Leaseholds. Leaseholds are sometimes found instead of real estate, or in addition to that asset. A leasehold may be purchased from a person who has taken a lease for a period of years at a rental which, at the time of purchase of the leasehold, is less than the character of the property justifies. The purchaser of the leasehold will pay to the person holding the lease the discounted, or present, value of this rental saving. Such an asset must gradually be extinguished as the expiration date of the lease approaches.

This situation is similar to that of the holder of a long-term lease who erects a building on leased land. Such property, being fixed to the land, becomes the property of the landowner.

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[12] While not concealing the mortgages, the consolidated balance sheet of Wilson & Company and subsidiaries on December 29, 1923, showed Plant and Equipment $46,117,093.32, beneath which appeared Mortgages Payable and Purchase-money Obligations $467,500.00, with the net amount in the asset column. The mortgages would more properly have been included among the liabilities, where even the inexpert reader could not fail to include them in totaling the indebtedness. Certain statistical agencies actually did fall into the error of showing only the net amount in reporting the balance sheet of the company.

Such a building with its fixtures must gradually be written off over a period not longer than the life of the lease, unless a special agreement has been made by the landlord to repay the lessee for the building he has erected. The amount written off annually is virtually so much rent, and the building is in effect a payment to the landowner for the use of his land site, unless it is assumed that the building will be without value by the time the lease expires. Where buildings are listed among the assets, without an item of land or real estate, inquiry should be made as to the actual situation.[18]

Equipment. Equipment and furniture should be stated separately from the building figure. They are usually subject to a more rapid rate of depreciation than the building. Moreover, machinery and other equipment, especially where highly specialized, may be of little more value than so much scrap in the event of liquidation, while the building may be rented or sold for other purposes. A separation of these items also makes possible a comparison of each with the maintenance, repairs, and depreciation allowance figures and an intelligent estimate as to whether the different classes of property are being properly cared for.

The mercantile or bank credit man who is interested in the possible resale or second-hand value of the equipment in the event of liquidation will ask the following questions as he studies the item:

1. Is the equipment of a standardized type which will give it ready marketability, or is it of unusual size or specially adapted for purposes of this one concern? To be considered "standard," the equipment should, of course, be sufficiently modern to meet the current standards of efficiency.
2. Is it widely enough used to offer the likelihood of a broad market?
3. Is it located at or near a potential market? Silk looms, for example, if owned in Paterson, New Jersey, a silk-manufacturing community, would be well located for a possible resale.
4. What is the likely physical condition of the equipment? Is it well preserved? On the one hand, the equipment of construction contractors is frequently exposed to severe weather conditions and allowed to deteriorate; while, on the other hand, certain types of machinery, such as those that are used in a

[18] See S. L. McMichael's *Long and Short Term Leaseholds* (New York: Prentice-Hall, Inc., 1925), Chapter XIX, "Appraising Long Term Leaseholds."

cotton textile mill, are ordinarily kept in an excellent state of repair.

Occasionally, appraisals are made which greatly help the analyst to estimate the current value. An appraisal is sometimes based on "condition, type, and service" without regard to age. Such an appraisal may overlook the fact that condition based on operating efficiency is misleading, because mechanical efficiency is usually fairly good up to the time of retirement. Book value, however, should reflect from the start the approaching end; otherwise, an unfair burden will be thrown on the expenses of the year in which the replacements occur.

Present value based on general price levels. Where it is desired to form only a rough estimate of the present cost of replacing certain structures and equipment, the device of index numbers may be helpful. These numbers, as their name implies, show relative price change from month to month and year to year. They are calculated and published by various agencies. One of the best-known indices in this country suitable for the purpose of interpreting the fixed property account is the index of construction costs published by the *Engineering News Record.*[14] The figures are shown in the table below. Costs were relatively stable during the years 1923–1930, variable since.

INDEX OF CONSTRUCTION COSTS
(*Engineering News Record*)

1913 = 100

1914	89	1921	202	1928	207	1935	195
1915	93	1922	174	1929	207	1936	206
1916	130	1923	214	1930	203	1937	235
1917	181	1924	215	1931	181	1938	236
1918	189	1925	207	1932	151	1939	236
1919	198	1926	208	1933	170	1940	242
1920	251	1927	206	1934	198		

These indices measure the relative prices in the given years. The probable cost of reconstructing a building in 1940 actually built in 1925 would have been as the relation of the index 242 to 207, or an increase of 17 per cent. If it is known in which years the property was constructed, a rough approximation in terms of current building costs may be made. Unfortunately for the out-

[14] The index weights steel 38, lumber 17, cement 7, and labor 38. A convenient source of these monthly data is the Statistical Bulletin of the Standard Trade and Securities Service.

sider, the property account of most large concerns is the net result of many additions and subtractions over a period of years, and the allocation of the parts of property to different years is impossible. The method is chiefly useful to the management in making estimates, and to the outside analyst in those cases where he knows the property was chiefly constructed in a few major units in certain years.

The method assumes that the original figure was the market or fair cash value of the property. A plant might be erected by promoters and then resold to the operating company for stock of par value greater than the cash cost. This practice would make possible a considerable inflation of the book value.

A construction company might sell a plant costing $4,000,000 to the corporation that was to operate the same for $4,000,000 par value of preferred stock and $2,000,000 of common stock, and give the plant a value of $6,000,000 on the books of the operating company. The promoters might then be able to sell the preferred stock at par by offering a 25 per cent bonus of common stock. They would have a block of $1,000,000 of common stock remaining to pay themselves for their efforts. This reward would, of course, be valuable only as the new company succeeded.

Consolidations of going businesses, likewise, may result in inflated balance sheets. Probably the most common practice now follows the course of taking over tangible property of the former companies at the values shown on their books. If that figure greatly misstates current values, an actual appraisal by disinterested experts may be made and current replacement value less depreciation used. If there is any stock issued in excess of this amount, the difference is set up as an intangible asset, under the heading "Goodwill" or some other title that clearly shows the reader the fact that the values are intangible in character.

Patterns, dies, and plates. Patterns, lasts, models, dies, and drawings are shown by many industrial corporations among the fixed assets. Their value is likely to be very temporary, and should not be large. The same is true of plates and cuts found in the asset column of publishers' balance sheets. If the product is a success, the first printing will usually yield sufficient revenue to repay the outlay for plates, and it would be conservative to write their book value down to a nominal amount. If the product is unsuccessful, the value of such items is so questionable as to make their inclusion among the assets poor pro-

cedure. These items as a class are more of the nature of deferred expenses than of fixed assets.

Investments. Investments usually consist of securities, which frequently can be sold without disturbing the regular operations of the business, or which may be useful as collateral for securing a loan. If either of these two situations exists, the securities serve as valuable support to working capital. When the holdings are temporary investments, they will, of course, appear among the current assets rather than as "Investments" among the fixed assets. The analyst may profitably ask the following questions as he examines this asset:

1. How readily may the investments be sold? Securities on the stock exchange will have an advantage. Unlisted stocks of small companies owned by only a few persons will usually be at the other extreme in marketability.
2. Is the value of these investments likely to change greatly with changes in business conditions? The more speculative an investment, the less it can be depended on when making a judgment of the future.
3. What is the present value of these investments?
4. Are the investments self-supporting? In other words, do the investments yield sufficient income to pay the expense of carrying them? Since the investment income reported in the profit and loss statement will show only interest and dividends received, and the latter figure may be a very poor measure of the actual earnings of stockholdings, it is practically impossible to answer the question proposed here without a detailed list of holdings and suitable statement material about the companies concerned.[15] Where the property yields no present income but is held for future developments, as in the case of undeveloped mining or timber properties, it is usually impossible to form any reasonable estimate of value, except when a disinterested appraisal of recent date is available.
5. Is the investment in allied or affiliated companies primarily for the purpose of securing concerted action? In such a case,

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[15] The Securities and Exchange Commission requires that corporations registering new issues (Form 10) or making annual reports (Form 10k), because their issues are dealt in on a registered stock exchange, submit detailed schedules of their investments. Book value, basis of valuation, and, where possible, current market value, are required for both marketable securities and other investments, when they amount to more than a certain per cent (usually 15) of total assets. See Instruction Book for using SEC Forms 19 and 10k.

the benefits, if any, may be indirect rather than from any direct revenue in the form of interest and dividends.

6. Is the investment in subsidiary companies? Where the stock of subsidiary companies is held, it generally is desirable to secure the statements of these companies and to read them in connection with those of the parent company. A subsidiary may be used as a cloak for the concealment of either profits or losses. Investments in subsidiaries may sometimes be regarded as liabilities—for example, where the subsidiary shows a loss each year. It is customary, where the subsidiaries are important, to combine their statements with those of the parent company, as will be discussed later in connection with holding companies.

Accounts receivable from subsidiaries. Since a company frequently cannot press a subsidiary for the payment of amounts owing from it without endangering its investment, an account receivable from a subsidiary is unlike an ordinary account, and may constitute a more or less permanent advance. Such sums are likely to be harder to collect in a time of stress than the average account receivable. Amounts due from subsidiaries and amounts due from allied or affiliated companies are usually listed in the fixed section of the balance sheet rather than under current assets.

The following illustration shows the possible importance in analysis of this parent-subsidiary relationship:

PARENT BUSINESS

Assets	1940	1941	*Liabilities*	1940	1941
Cash	$ 30,000	$ 20,000	Accounts Payable	$ 60,000	$ 80,000
Accounts Receivable	30,000	40,000	Capital Stock	100,000	150,000
Merchandise	80,000	100,000	Surplus	20,000	20,000
Plant	40,000	40,000			
Stock in Subsidiary	....	50,000			
	$180,000	$250,000		$180,000	$250,000

In the preceding statement, the business has apparently increased its net worth $50,000. The change is accompanied by the acquisition of $50,000 worth of stock. But the analyst should seek more information from the balance sheet of the subsidiary.

If the debts are subtracted from the stated value of the tangible assets ($56,500 – $42,500), the net tangible assets available

SUBSIDIARY COMPANY

DECEMBER 31, 1941

Assets		*Liabilities*	
Cash	$ 500	Accounts Payable	$42,500
Accounts Receivable	24,000	Capital Stock	50,000
Merchandise	20,000		
Plant	12,000		
Patents and Goodwill	24,000		
Deficit	12,000		
	$92,500		$92,500

for the stockholders are but $14,000. In view of the lack of working capital, a possible failure may reduce this still further. It is not improbable that some of the accounts receivable of the parent business are accounts payable of the subsidiary. If, as is not infrequently the case, the owners of the stock attempt to protect their investment by further advances, they may see not only the original $50,000 but an additional sum lost on the subsidiary. The change in the condition of the parent company, at least in so far as can be learned from the balance sheet, is certainly not improved, and, while the margin of safety to creditors is bettered nominally, it is actually much weaker in the later year.

Funds. Sinking funds and other sums set aside for special purposes are not usually items of major importance. They represent sums set aside to meet some liability on the opposite side. For example, a sinking fund for the purpose of retiring outstanding bonded indebtedness will ordinarily be spent almost as rapidly as accumulated for the redemption of the bonds in question. If these funds are at all considerable, an attempt should be made to learn in what form they are invested. They should be in some safe form and of such a nature that they will be available when the time comes for them to be used.

Treasury securities. Treasury securities are stocks and bonds of the corporation itself, once issued but now held in the treasury and not yet canceled. On infrequent occasions, bonds which are authorized but not yet issued are treated as treasury bonds. The title should be limited, however, to bonds acquired in the manner first mentioned. It should be learned whether these bonds are actually available for sale. It is not at all likely that resale would be permitted where the bonds had been redeemed and were being held for a sinking fund. Where unissued bonds are available, their sale may be a source of cash for additional

working capital. In such an event, however, some inquiry must be made of the rating the bonds have in the investment market. If they rate low, they may involve an element of risk; for if the company does issue them for cash, the amount of obligation assumed may be out of all proportion to the cash received.

Treasury stock is frequently shown as an asset, although its treatment as a deduction from the capital stock, as discussed below, is more suitable for analysis purposes. If purchased, it will be shown at cost; if donated, at par value. Since its value as an "asset" depends upon its market value, treasury stock should usually be regarded as an unknown quantity till sold. Treasury stock is ordinarily of most importance in the balance sheets of newly promoted enterprises and consists of shares donated back to the corporation by the promoters.[16] They seek to create "fully paid" stock with an attractively high par value that may be offered later "at a bargain." This stock reacquired by the corporation may be sold at any price and stockholders will assume no liability, since its par value was "fully paid" at the time of the original issue.[17]

The successive balance sheets illustrating this procedure follow:

1. Upon the formation of the corporation:

Assets		*Liabilities*	
Leases of Mining Properties	$1,000,000	Capital Stock	$1,000,000

2. After donation of stock by promoters:

Assets		*Liabilities*	
Leases	$1,000,000	Capital Stock	$1,000,000
Treasury Stock	500,000	Donated Surplus	500,000
	$1,500,000		$1,500,000

3. Upon sale of stock at 50 per cent of par value:

Assets		*Liabilities*	
Cash	$ 250,000	Capital Stock	$1,000,000
Leases	1,000,000	Donated Surplus	250,000
	$1,250,000		$1,250,000

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[16] A further description of this treasury stock device will be found in Guthmann, H. G., and Dougall, H. E., *Corporate Financial Policy* (New York: Prentice-Hall, Inc., 1940), p. 88. With the decline in the emphasis upon par value, the device has lost much of its former significance.

[17] See above, p. 27.

If one were to reason backwards in the given case and assume that a fair amount was received for the stock sold, one might conclude that since a one-half interest was worth $250,000 in cash, the whole company could be worth but $500,000. The customary answer to this is that an undeveloped company is forced to sacrifice "real values" in order to start operations.

A corporation cannot be said to own values in its own securities, since they are claims against itself. It is only as the shares or bonds are marketed and assets are received to replace them that they should be recognized as outstanding; then the amount shown for such securities, whether stocks or bonds, may be increased as the assets received are placed on the books. The best practice in analysis is to regard treasury securities as a deduction from the amount of stocks and bonds shown on the opposing liability side rather than as assets. The stock in the above case would appear in the balance sheet as follows:

CAPITAL STOCK

Authorized and Issued	$1,000,000	
Held in Treasury	500,000	$500,000

Three reasons for continuing the treasury stock as an asset, when it has been purchased, may justify such treatment in the published balance sheet.

1. *Repurchase limited by surplus.* Because repurchase of the stock of the corporation might injure the position of the creditors, the law generally forbids purchases in excess of surplus. If the cost of the treasury stock is shown on the asset side, it is simpler to note whether or not this rule has been observed.[18] If stock with par value were selling at a sufficient discount, its repurchase by the corporation would create additional surplus to permit further purchase. In fact, if stock could be bought for

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[18] Some corporations achieve the same end by subtracting the treasury stock, at cost, from the Earned Surplus *alone*. The deduction would more logically be made from the capital stock and surplus, were it not for the law referred to above. The Cuban-American Sugar Company met the problem (1941) by deducting their treasury stock from the stock accounts at par value and then adding a footnote: "Earned surplus is restricted in the total amount of $1,128,629.46 representing the cost of the shares of the company held in the treasury."

As an example, the Business Corporation Act of Illinois forbids a corporation to purchase its own shares when it will reduce its net assets to less than the sum of its stated capital, paid-in surplus, any surplus arising from unrealized appreciation or revaluation of its assets, and any surplus arising from surrender to the corporation of any of its shares.

one-half of par, treasury stock purchases would create surplus equal to whatever amount was expended on the stock purchases. Sound practice would dictate that treasury stock purchases should be limited to an amount equal to surplus resulting from ordinary earnings, so long as there is any substantial debt in existence.

2. *Temporary holdings.* When minor amounts of stock are purchased for some temporary purpose, such as to provide for an employees' stock purchase plan, it is more convenient to show the item as an asset, "Treasury Stock," at cost than to have recurring adjustments in the common stock and surplus accounts

3. *To avoid unusual surplus decreases where stock is of nominal value.* When stock has a nominal value, as is often the case with no par stock, any purchase produces a decrease in surplus for the amount paid over and above the nominal stated value. Deductions from the stock and surplus accounts, especially the latter, may disconcert the unwary reader—a result which is avoided by carrying the cost on the asset side as treasury stock. Thus, a share purchased for $25 could appear as treasury stock at that figure, but if deducted from the stock account when stock had a stated or par value of one dollar it would reduce the account only by that amount and the surplus by $24. Consequently, a continued policy of preferred or common purchases might, by reducing surplus, make a bad impression upon those who attach too much weight to that figure, as compared with earnings per share or with book value—both of which might be increased by the process. By showing the purchase as treasury stock, this continuing drain on surplus would not appear unexplained. When the process was complete, a major operation would remove the treasury stock and reduce net worth with a suitable explanation attached. In the meantime, the analyst for his own purposes can always make the deduction of treasury stock from net worth in preparing the balance sheet for ratio or other study.[19]

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[19] The discovery that Allied Chemical & Dye Corporation was including a substantial amount of treasury stock as Marketable Securities under current assets led the New York Stock Exchange to threaten to bar its stock from that market until fuller information was given out. On December 31, 1933, the company showed 187,189 shares of common stock as an asset at $25,837,300 or about $138 per share. The terms of the agreement under which the Exchange agreed to retain the company's issues on the stock list is instructive in what corporate reports should show. (*Moody's Industrial Supplement*, July 12, 1933.)

Intangible assets. The intangible assets, as previously stated, consist of such items as patents, copyrights, trademarks, franchises, and goodwill. While the analyst must form his own opinion as to the value of these items, he will be interested in learning their origin when possible. They may represent cash outlays, or more or less arbitrary values introduced at the time of a promotion or reorganization. They may even represent values introduced by doubtful accounting methods. Some balance sheets have the intangibles reduced to a nominal sum as low as $1. The retention of the item in this manner reminds the reader of what may be very valuable intangibles, and, at the same time, gives him an impression of conservatism.

Patents and copyrights represent monopoly rights granted by the government. Letters patent give an inventor the exclusive right to manufacture and sell his device for a period of seventeen years, which time may be extended only by an act of Congress. These patents can be said to have value to a going business only as they enable it to earn a more than ordinary rate of return upon investment. When value does exist, it may be kept alive beyond the seventeen-year period by the discovery of important improvements which can be patented. Sometimes, especially in the case of consumers' goods, a valuable trade name or goodwill may be developed to give a quasimonopoly position and correspondingly high profits that will continue after the expiration of the protected period. The patents may, however, become valueless before that interval has elapsed, through being superseded by improved devices. Patents are written off over the period of their legal life, or more quickly when they appear to be without value.

A copyright is the exclusive right, protected by the Federal statutes, of an author or his assignee to publish and print his literary or artistic work. This right is granted for a term of twenty-eight years, and it may be renewed for another twenty-eight years if application be made within one year of the expiration of the original copyright (Act of March 4, 1909, Chap. 320, §23). The actual life—that is, the period during which the right has value to its owner—is usually shorter than the legal life of the right. Ordinarily, the first edition is made to bear the cost of the copyright and see the asset extinguished from the balance sheet.

Trademarks have value as they become associated in the public mind with merit so as to enable the owner to make sales

with less than ordinary selling costs or at more than a normal rate of profit.[20]

Value of goodwill. Goodwill is the intangible asset most frequently found in the balance sheet. To illustrate its use, assume a property with a net investment in tangible property of $500,000 and average earnings of $100,000. If the normal return in this line of business is 10 per cent, clearly the market value of the business is $1,000,000. In a consolidation, the owners would be likely to demand securities of at least this face value. The resultant balance sheet might appear then:

Assets		*Liabilities*	
Tangible Property (in detail)	$ 500,000	Capital Stock	$1,000,000
Patents, Trademarks, and Goodwill	500,000		
	$1,000,000		$1,000,000

Goodwill, then, where it exists, might be defined as the capitalized value of earning power in excess of the normal return on the net investment in tangible property. Goodwill is not spoken of, as a rule, except in connection with competitive businesses. Furthermore, it is incorrect to speak of the asset "goodwill" as existing in a business that does not earn more than an ordinary rate of return.

The arithmetic of goodwill valuation may follow the formula suggested by the preceding figures:

1. Capitalize the earnings at a fair rate of return to obtain a valuation for the business:

$$\$100{,}000 \div 10\% = \$1{,}000{,}000.$$

2. Subtract the value of the tangible assets from this valuation of the business as a going enterprise to find the value of the goodwill:

$$\$1{,}000{,}000 - \$500{,}000 = \$500{,}000.$$

Or, if the method suggested by the definition is followed:

1. Find the amount which would constitute normal earnings by multiplying the tangible investment by a fair rate of interest:

$$\$500{,}000 \times 10\% = \$50{,}000.$$

[20] Their cash value is illustrated in the lease, in 1931, by International Shoe Company of the trade names "Dorothy Dodd" and "Queen Quality" with the option to purchase. In 1937 the company exercised the option at a reported price of $100,000.

2. Determine "excess" earnings by subtracting the "normal" earnings from actual earnings:

$$\$100{,}000 - \$50{,}000 = \$50{,}000.$$

3. Capitalize the excess earnings at the fair rate of return to find the value of goodwill:

$$\$50{,}000 \div 10\% = \$500{,}000.$$

Because these two processes are mathematically equivalent, the results obtained should be the same.

Another method of valuation which does not follow the rule of "capitalizing above normal profits to find goodwill" has been stated as follows: " . . . the value of 'goodwill' will be the sum of the net income earned by the property for, say, three (or more, as may be desired) consecutive years immediately preceding the appraisal of the property." Under such a rule, a business with a nominal return of only 1 or 2 per cent would have a "goodwill" as well as a property earning 20 per cent.

If two properties, with an appraised value of $1,000,000 each, showed average earnings of 5 and 10 per cent, respectively, the following results might be obtained:

	A	*B*
Plant Value	$1,000,000	$1,000,000
Goodwill (3 years' earnings)	150,000	300,000
Total Valuation	$1,150,000	$1,300,000

Such a method of appraising a business could hardly be fair except by the merest chance.

Intangibles are likely to have little value in liquidation, and, in analysis, are often omitted from the list of assets. They can be said to have value only when the business is earning a profit in excess of the normal return for the amount actually invested in tangible property. Any excess earnings may be but the reflection of temporary factors, either external, as in the case of a passing business boom, or internal, as in the case of a skillful management which brings profits to the business beyond the amount it takes from the business in charges for its services. Where the valuation of the intangibles has been based on the *prospect* of excess return over normal, as is usually the case in promotions, it is necessarily subject to error, and its reliability will be dependent upon the degree to which the problem is susceptible of accurate forecast and upon the expertness of the appraisers.

Going concern value. "Going concern value" is an intangible item not found in the balance sheet but sometimes estimated and added by public service commissions to the value of the property in arriving at the fair value of a public utility. It is most suitably defined as consisting of:

1. Operating losses occurring during the initial part of the utility's existence, before it attains the condition of normal operation, plus
2. Any losses incurred, or any deficiency in net earnings below a fair return on actual investment, during the initial period usually required for the development of the property to normal operation.[21]

Goodwill is not allowed in the valuation of a utility's property, and, in view of the policy of limiting the earnings of utilities, it seems just that deficient earnings during a short initial period should be permitted in stating the amount invested. The admission of going concern value should not serve as a cloak, however, for the inclusion of loosely defined intangibles analogous to goodwill.[22]

It is probable that the idea of going concern value is the basis for the second method of valuing goodwill mentioned above. The argument might be advanced that any new business would be obliged to operate without profit for a time, and, therefore,

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[21] *Accountants' Handbook* (ed. by Paton, W. A., New York: Ronald Press, 2nd ed., 1932), pp. 803–805.

[22] The following illustrates the broad definition of "going concern value": ". . . The value of the plant is to be estimated in its entirety, rather than by the addition of estimates on its component parts, though the latter course will materially aid in determining the value. Advantages have accrued through the sagacity of its management. So, too, there are the inevitable mistakes which would not be likely in the construction of a new plant; but to put a new plant in profitable operation, time would be required, and, aside from the intangible element of goodwill, the fact that the plant is in successful operation constitutes an element of value." Cedar Rapids Gas Light *v.* City of Cedar Rapids, *et al.*, 144 Iowa 426, 120 N.W. 966. A contrary viewpoint which seems more logical may be had from Fuhrmann *v.* Cataract Power & Conduit Co., 3 P.S.C.R. (2d Dist. N.Y.) 656 (1913), which reads as follows: "The physical property of a plant . . . has no value other than scrap value, except as a going concern, and when a proper allowance has been made for the value of the physical property, meaning thereby a proper investment value, *including every element which goes into that property*, it must include an estimate for the property as a going concern, and the going concern value is necessarily represented in that estimate. The very act of giving a value to the physical property assumes that it is a going concern, assumes that it has a business, and that that busines is in some degree related to the normal capacity of the plant."

when buying an established business, the purchaser should be willing to pay a sum equal to a certain number of years' profits in addition to the value of the tangibles. The method is unsatisfactory, however, in valuing an ordinary competitive business, since such a business is only valuable for what it can produce in the way of income, except for such value as the assets might have in liquidation.

Reserves in the fixed section. Opposite the fixed assets enumerated above are the reserves and the claims of the security holders. The reserves should be separated according to their nature, as outlined in Chapter II, "The Construction of the Balance Sheet." The adequacy of valuation reserves, such as the depreciation reserves, can best be studied in connection with the earnings statement, where one may find repairs and replacements stated, as well as the allowances for depreciation. Fixed liability reserves are ordinarily of minor importance save in the case of insurance companies.[23]

Surplus reserves are usually to be associated with conservative financial management. A board of directors that uses this means to protect the surplus from dividend declarations is building up the owners' investment and increasing the margin of protection to creditors. It must be remembered that in some cases surplus reserves, such as, for example, the sinking fund reserve, are compulsory because of the provisions of a bond indenture. Such a reserve, unlike the optional reserve (for example, the reserve for dividend equalization), is no clue to the temper of the financial management.

Capitalization. Capitalization is given different meanings by different writers.[24] The most general meaning given to it is the par value of outstanding securities, that is, stocks and bonds. In this sense, a corporation will normally own property in excess of its capitalization. The analyst seeks to determine whether the capitalization is in fair proportion to the properties owned.

Since the common purpose of examining the capitalization is to note the proportion of stocks to bonds, it is apparent that the total capital structure including surplus is more significant. Any comparison of the amount of stock alone to the funded debt without regard to surplus is to ignore what is frequently a very

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[23] The reserves of insurance companies are discussed in Chapter XVII, which is devoted to that type of company.

[24] For a discussion, see Guthmann, H. G., and Dougall, H. E., *Corporate Financial Policy* (New York: Prentice-Hall, Inc., 1940), pp. 84–85.

important part of the net worth, which gives protection to the creditors of the business. The consideration of surplus has become especially important as a result of showing capital stock at a nominal balance sheet value since the introduction of stock without par value.

Since the intangible assets are valued rather arbitrarily and are very generally omitted, study is facilitated by their elimination before capital structure comparisons are made. The intangibles are subtracted from the net worth. The capital structure is then stated as it would appear in a balance sheet free from intangible assets.

Since the security owner is interested in the enterprise as a going concern rather than as a liquidated business, his attention will frequently center on earnings rather than on property valuations, although this is less true in the case of bondholders and creditors in general than of stockholders. Stock, however, in many cases has little or no tangible property behind it and is of value only in proportion to the income it yields, present and prospective.

The capital structure of the National Dairy Products Corporation, the balance sheet of which was shown at the beginning of this chapter, would appear as follows:

	Amount	*Per Cent*
Debenture Bonds	$ 68,500,000	67%
Minority Stockholders' Interest	300,000	..
Common Stock	5,300,000	5
Capital Surplus	2,200,000	2
Earned Surplus*	26,500,000	26
Total	$102,800,000	100%

*After deduction of Goodwill, $22,000,000.
Note: Reserve for Contingencies, $3,000,000 is omitted.

Overcapitalization and intangible assets. The presence of intangibles in the balance sheet is regarded by some as a suspicious feature and an indication of overcapitalization. Since the reader can deduct the item from the assets and reduce the net worth accordingly before making his analysis, there need be no bias against the item if it is plainly stated. This adverse feeling is apparent in the popular identification of goodwill and patents with "watered stock." A considerable number of industrials, formed before 1920 and the advent of stock without par value, were particularly generous in their use of goodwill. The F. W. Woolworth Company issued $50,000,000 of common stock against $50,000,000 of goodwill at the time of its incorporation in 1911.

The total tangible assets were acquired by an issue of $15,000,000 of preferred stock. This goodwill was gradually eliminated in the years 1922–1925. In popular parlance, "the water was squeezed out," and tangible values arising out of earnings replaced intangibles. (Although not a technical term of precise meaning, "watered stock" has an unhappy connotation of wrongdoing, and should be confined to stock for which the corporation failed to receive full value. Goodwill may be very valuable.)

This discussion leads to the question as to when the analyst shall label a corporation as overcapitalized. It is customary to say that a corporation is overcapitalized when any part of its capitalization is in excess of the tangible property. The case of National Dairy Products Corporation illustrates, however, the manner in which it is possible to have intangible assets and yet not have overcapitalization in any sense. The writing off of the entire intangible assets in the capital structure example did not wholly eliminate the surplus. Even had that not been the case, the presence of goodwill might have been justified by earning power of the property at the time of acquisition.

The Coca-Cola Company, which pays dividends on its common stock, shows a per cent of "water" in its balance sheet suggestive of the per cent of water in its product. Viewed from the standpoint of earning power, however, the company is not capitalized at an excessive figure. The presence or absence of goodwill should not be regarded as proof or disproof of overcapitalization, if that term is taken to mean excessive capitalization. The issue of stock for intangibles is a common financial practice. It can be condemned only where ignorant persons are misled by misrepresentations. Such grounds hardly constitute a valid objection to a financial device that may possess merit in the promotion of an enterprise or the purchase of going concerns.[25]

A second viewpoint is to regard a business as overcapitalized when it is unable to earn a return on its capitalization. From this viewpoint, a company which has invested a dollar of cash in tangible assets for every dollar of capitalization may be overcapitalized. Since the word *overcapitalization* carries a suggestion of willful wrongdoing, it would be clearer to use some more definite expression that indicated that the earning power was depressed, or that the promoters had issued so much in the way of fixed income obligations as to render the capital structure top-heavy.

[25] See footnote 16 above.

COCA-COLA COMPANY

General Balance Sheet

December 31, 1940

Assets			*Liabilities*	
Cash		$ 9,483,097	Accounts Payable	$ 3,731,635
Government Securities		5,095,772	Accrued Liabilities	45,632
Accounts Receivable		4,936,933	Accrued Taxes	13,451,158
Inventories (lower of cost or market)		27,995,180	Total Current Liabilities	$ 17,228,425
Total Current Assets		$47,510,982	Reserve for Contingencies, etc.	14,404,319
Land		2,404,297	Class A Stock (600,000 no par shares)	3,000,000
Buildings	$12,668,624		Common Stock (3,991,900 no par shares)	25,000,000
Machinery and Equip.	8,059,476		Earned Surplus	48,131,099
Bottles and Cases	3,123,219			
Total	$23,851,319			
Less Depreciation	6,147,084	17,704,235		
Deferred Charges		921,553		
Investments & Advances—foreign subsidiaries		2,199,293		
Securities & Accounts of Affiliated Cos.		509,030		
Other Investments		570,275*		
Miscellaneous Receivables		1,026,876		
Goodwill, etc.		34,917,302		
Total		$107,763,843		$107,763,843

* Market value $1,494,594 on Dec. 31, 1940.

Note: Original balance sheet notes indicate that European subsidiaries were not consolidated; amounts and basis of valuation for other foreign subsidiaries stated in detail.

Surplus. The nature of surplus has been discussed in the chapters on statement construction. The study of surplus requires two steps: (1) the gathering together of the various accounts that represent surplus, such as the surplus reserves, so as to ascertain the total surplus; (2) the analyzing so far as possible of what portion of the surplus is earned and what portion unearned.[26]

The figures of the Northwestern Steel Company shown on the opposite page illustrate what the well-constructed balance sheet might show as capital structure.

By showing the amount of bonds held in the treasury as distinct from those retired through sinking fund, the balance sheet enables the reader to determine to what extent purchases for the latter are already on hand and in the treasury. Reference to the statement of sinking fund requirements would tell how far into the future the working capital is relieved of this potential drain for sinking fund by such forehanded purchases.

The statement of the amount of authorized but unissued stock shows the extent to which such stock might be available for various purposes without an amendment of the corporate charter. The figures for treasury stock while showing the amounts reacquired do not reveal how much was expended in obtaining it. Any options to purchase additional stock or rights to convert bonds or preferred stock into common are significant because they may so increase the number of shares as to reduce the assets or earnings per share.

When surplus is stated as not available for dividends, cash dividends are meant. Capital surplus may be and sometimes is made the basis of stock dividends. Capital surplus arises most commonly from capital paid in by stockholders in excess of the par or stated value of the stock, initial surplus at the formation of a new corporation, as through merger, and surplus arising through an increase in the value of assets as a result of appraisal.

The surplus reserves represent surplus under another title. Sometimes such reserves are termed Appropriated Surplus. A reserve, such as the sinking fund reserve or the reserve for the

[26] The Piggly Wiggly Stores, Inc. (a Virginia corporation), realized $90,034 on revenue from contracts for 1921 (that is, royalty revenue from stores using their plan of merchandising). At the end of the year, a value of $1,250,000 was set up in the asset account Contracts and Leases, and an equal credit made to Surplus. Extreme care is necessary to avoid confusing such surplus with earned surplus, particularly in subsequent years when the character of the surplus is not evident from the balance sheet.

retirement of preferred stock, is returnable to general surplus after the purpose for which it is created has passed. Because of the drain on working capital caused by the actual retirement of the securities, it will usually be unwise to pay cash dividends on

FROM THE BALANCE SHEET OF THE NORTHWESTERN STEEL COMPANY

December 31, 1940

Funded Debt:		
Series A—4% Debentures Due July 1, 1955:		
Issued	$20,000,000	
Less: Retired through Sinking Fund	3,700,000	
Acquired and Held in Treasury	3,200,000	
Total Outstanding		$13,100,000
Net Worth:		
7% Cumulative Preferred Stock:		
Authorized	$10,000,000	
Less: Unissued	2,000,000	
In Treasury	1,400,000	
Total Outstanding		$ 6,600,000
Common Stock without Par Value*—2,500,000 Shares Authorized—Stated Value of $5.00 per Share:		
Issued	$ 6,000,000	
Less: In Treasury	200,000	
Total Outstanding—1,160,000 Shares		5,800,000
Surplus not Available for Dividends:		
Capital Surplus	$18,000,000	
From Revaluation of Fixed Assets	2,300,000	
Reserves:		
For Sinking Fund	3,700,000	
For Retirement of Preferred Stock	900,000	
For Contingencies	3,000,000	
Total Capital and Appropriated Surplus		27,900,000
Profit and Loss Surplus		6,500,000
Total Net Worth		$46,800,000
Total Capital Structure		$59,900,000

* Options to purchase 200,000 shares of common stock at $35 per share are outstanding.

the basis of such surplus, although stock dividends would be appropriate.

An advantage of the stock dividend is the reduction of surplus and, consequently, of the pressure from stockholders for large cash dividends. In general, stock dividends may be declared whenever it is desirable to give the stockholders evidence of the increase in their interest without reducing the working capital by a cash distribution. Two possible disadvantages are: (1) the reduction of surplus to a point that might cause it to be easily wiped out by a few bad years (an impairment of capital would

result more easily); and (2) the strain on working capital that might follow should the directors feel under any necessity of maintaining the former dividend rate on the increased number of shares without regard to the working capital position.

Capital structure proportions. The discussion up to this point in the chapter has been concerned with the character of the various items in the fixed capital section of the balance sheet. It now turns to the relationships which are likely to be meaningful and to aid interpretation. The capital structure proportions probably receive the most attention. Since in many balance sheets the bonds or other fixed debt and the net worth constitute the bulk of the liability side of the balance sheet, their relation tells almost the whole story of the balance between debt and the owners' interests, or between borrowed and owned capital. This statement holds true especially for the railroads and the public utilities, where the fixed capital section is almost the total balance sheet.[27] Probably the majority of the great industrial corporations now use current or short-term credit so little that the same thing can be said of their capital structures.

As to what the proper proportions of debt and net worth are, no hard and fast rule can be laid down. The general principle to be kept in mind is that debt should be kept within such limits that the corporation can confidently face the adverse possibilities of a business depression without fear of insolvency. In view of the difficulties of the public utilities in 1920 and the railroads in 1931–1933, it might be argued that funded debt is always potentially hazardous. But so long as our economic society wishes to take advantage of the lower capital cost of funds obtained by borrowing, some courage must be exercised. The actual survival rate of past depressions must be kept in mind.

Since no business mortality tables of practical worth are possible, because of the uncertainties of the business cycle, certain empirical rule-of-thumb maxima have been suggested. For public utilities, this maximum percentage for funded debt in the capital structure may be set at 60 per cent; and for railroads, because of the lower earning power of their property investment, at 50 per cent. Since bonds should be salable at a rate lower than the rate earned on the total investment, this limit should result in the corporation's earning its interest at the conventional two times over under ordinary conditions. Thus, if an electric

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[27] See below, Chapters XI–XIII.

light and power company has earned 7 per cent on each $100 of investment, it could afford to pay an interest rate as high as 5.83 per cent on each $60 of borrowed funds and still show interest expense of only $3.50, or one-half of earnings.

Although individual manufacturing and merchandising concerns have shown as much or even more stability than the public service corporations, the general opinion has been that bonds should occupy a smaller place in their capital structure. A maximum limit of one-third would probably obtain for industrial concerns, subject to a possible further limitation in the light of the earnings record, the character of the business, and the extent to which short-term credit is used.

Preferred stock may be issued with the idea of creating a security of investment quality equal to a bond, so far as that is possible for a contingent charge obligation. To obtain such a rating, the preferred stock would have to meet the standards set for bonds. Since many issues do not attempt an investment standard, and often represent merely a convenient way of sharing in a highly speculative situation, no standards of maximum proportion are possible for them.

Because the capital structure proportions are studied primarily for the light they throw on debt burden, an equivalent approach would be to study the ratio of Debt to Net Worth. The latter relation might be said to have the advantage of emphasizing the fundamental relation, and would be more satisfactory to the extent that it brought debt other than the funded debt into the proportion. However, tradition is strong, and probably no investment study would be regarded as complete without a statement of capital structure proportions in percentage form.

Tangible assets: total debt. Furthermore, if fundamentals are to be emphasized, it would be more logical to construct the testing ratio along the lines of the current ratio, that is by comparing the total tangible assets with the total debt burden, including both current and fixed liabilities. The debt to net worth ratio states the relation of the debt to the supporting equity of the owners which must be wiped out before creditors suffer a loss. But the net worth is significant protection to creditors only in terms of the assets behind it. The use of the assets in the ratio instead of net worth is more likely to focus attention upon the assets, and so the reader is more likely to appreciate the need for eliminating intangibles in making comparisons, and for considering the quality of the other assets.

Desired capital structure proportions can be readily converted into equivalent figures for the ratio of tangible assets to total debt if it is assumed that the bonds and net worth are the only really significant items on the liability side of the balance sheet. Thus, if the bonds are to be limited to a maximum of two-thirds of the capital structure, the equivalent limit for the ratio of tangible assets to debt would be a minimum of one and one-half to one. This figure is apparent from a simple balance sheet in which this maximum funded debt proportion is shown under column *A*.

			A	*B*
Tangible Assets	100	Bonds	66⅔	33⅓
		Net Worth	33⅓	66⅔

If the bonds were to be limited to one-third, then the ratio of assets to debt should not fall below three to one. The introduction of other forms of debt, generally current debt, upsets this simple direct relation between capital structure proportion and the ratio of tangible assets to debt. The possible presence of current debt is in this way at least partly responsible for the apparently stricter standard for the capital structure proportion for industrial corporations. If it is assumed that (*a*) one-half of the tangible assets of a hypothetical industrial are in current assets, a not unusual average, (*b*) the current debt is up to the high level of one-half of the current assets, and (*c*) the bonds are one-third of the capital structure (bonds plus the net worth), the following balance sheet results:

Current Assets	50	Current Debt	25
Fixed Assets	50	Bonds	25
		Net Worth	50
	100		100

The result is that the ratio of total tangible assets is but twice the total debt. The illustration suggests that the minimum figure for this last ratio should be two in the case of mercantile and manufacturing concerns.

Funded debt protection. Two other ratios are often used to measure the asset protection of the bondholders: (*a*) the ratio of working capital to funded debt, and (*b*) the ratio of the assets which secure a given issue to the secured bond issue being studied. Public service, mining, and real estate corporations have relatively small current assets, and so the use of the former ratio is confined to manufacturing and mercantile enterprises. For

these latter businesses it is customary to state that working capital should equal or exceed the bonded debt if the bonds are to enjoy investment quality. Since bonds are normally secured by a lien upon the fixed assets and their interest supported by earnings, the logic of the ratio might seem doubtful. Actually, the bondholders are recognizing two important factors, namely, (1) the greater ease of valuing the current assets as compared with the fixed assets, and (2) the virtue of a strong working capital in supporting interest charges during a period when earnings are temporarily inadequate.

The ratio of the mortgaged assets to the secured bonds may be a difficult matter to figure if a multiplicity of liens exists, as is often true in railroad finance. In such situations, the ratio might be omitted. Generally, however, in the public utility (under the modern, open-end, unified financing) and in the industrial field, the ratio is that of the fixed operating assets (with sometimes the nonoperating investments added) to the total mortgage debt. The minimum usually expected is one and one-half for utilities and two for industrials. Fixed assets represent immobile capital difficult to evaluate, and so this ratio is of secondary importance as compared with those ratios which measure earnings protection.

Testing plant value. As in the case of the current ratio, the meaning of any solvency test which relates assets to debt depends upon the accuracy with which the asset is valued. Just as the receivables and inventories were checked by comparison with sales volume, so the plant and equipment may be compared with sales to get "plant turnover." "Plant" is meant to include the "total fixed tangible assets used in operation" and to exclude outside fixed investments and intangibles. The resulting ratio gives the dollars of sales in the given year per dollar of plant investment. The two advantages of high plant turnover are:

1. The larger the volume of business with respect to investment, the less is the per cent of net profit required to earn a given rate of return on investment.

2. The company with a low ratio is presumably obliged to spread the fixed expenses resulting from the use of the fixed assets, such as depreciation and interest, and generally insurance and taxes, over a relatively smaller volume of business, and consequently is likely to be at a disadvantage from a competitive standpoint.

The ratio is consequently said to reflect the efficiency with which the fixed investment has been administered. Three leading considerations make it doubtful whether plant turnover can be used, other than tentatively, for such a purpose.[28]

1. *Price level changes.* Sales tend to vary with changes in the level of prices, but plant usually remains on the books at cost until its parts are worn out or discarded and new units entered at the going level of prices. Furthermore, construction costs change over a period of time, and two plants of the same size and efficiency but built in different years and at different price levels will show different values without necessarily reflecting the relative efficiency of the two managements. In this important respect the fixed assets are different from the current assets. Receivables and inventories are being frequently converted into cash and replaced at the going level of prices. Individual buildings and units of equipment are replaced only at relatively long intervals.

2. *Operating functions assumed.* Sometimes two concerns are engaged in apparently the same business, but upon closer scrutiny it is found that one performs more functions than the other —which fact justifies additional investment. Thus, some large retail merchandising concerns have engaged in the wholesaling function, which involves warehouses and delivery equipment, and in manufacturing, which calls for a factory and its equipment. If the additional functions are wisely assumed and efficiently conducted, the larger fixed investment which lowers "turnover" will be balanced by a larger net profit margin providing a return upon the extra funds.[29] Even among small merchants, differences will arise because some invest only in fixtures while others also invest in the real estate for their place of business. Sometimes, a merchant buys a building in excess of his needs, and rents a portion, with the result that the fixed asset includes what amounts to a nonoperating investment. Plant turnover in such a situation will appear low. The clue to such a situation would appear in rental income in the earnings statement, if the figures in this statement are complete and sufficiently detailed.

3. *Depreciation reserves.* If, as is usual, the fixed assets are

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[28] See sources cited in footnote 10, page 94, for data showing the extreme variability of the relation between sales and fixed assets.

[29] For further discussion, see material on operating ratio, page 178.

stated net after depreciation, two concerns with equal plant costs but of different ages might show, as a result, different plant turnovers. Other factors affecting the relative size of the depreciation reserves are discussed below. Because of these factors, it has been argued that the ratio should be figured on the basis of gross rather than net plant value. This solution of the difficulty is logically sound; but in practice not infrequently there arises the difficulty that the plant is stated net and the reserve is omitted, and in other cases management appears to have pursued an ultraconservative depreciation policy, apparently in order to balance the factor of a high-cost plant.[80]

So general is the bias in favor of conservatism, that a warning as to dangers of understating asset values may not be amiss. The ultraconservative company may lay itself open to public hostility by appearing to earn an excessive return because of an understated investment; it may make itself liable to tax levies on excess profits, and stockholders may be misled as to the value of their holdings.

Adequacy of the depreciation reserve. The adequacy of the depreciation reserve is studied more accurately by examining the annual allowances in the earnings statement than by studying the balance sheet. The size of the reserve and the rapidity of its growth are often suggestive, however, especially in the light of the performance of similar concerns. The factors which are most likely to cause differences in the size and growth of the depreciation reserve are:

1. *Age of property.* A new plant at the moment of its completion would show no reserve. As the plant ages, the reserve accumulates; but in time some parts are replaced and the old parts are charged against reserve to the extent that an adequate amount has been accumulated. In this way, additions to the reserve would tend to be balanced by decreases caused by discarded units. The reserve would tend to stabilize as a result of this process if the property were huge enough and diversified

[80] Many large industrial corporations undoubtedly accumulate excessive depreciation reserves. While it is better to err on the side of conservatism, conservatism is no adequate excuse for deliberate misstatement.

An example of obscurity is found in the complete write-off of fixed assets by Commercial Solvents Company. In 1930 this concern wrote down to $1 the remaining book value of its plants at Terre Haute, Indiana, and Peoria, Illinois, formerly carried at about $1,800,000 and the replacement value of which was unofficially estimated at $10,000,000, or enough to double the book value of its stock in that year.

enough so that individual replacements did not cause too great fluctuations. Actually, such a balanced condition appears in practice but rarely.

2. *Kinds of assets.* Some parts of the fixed assets, such as land, are not subject to depreciation; other parts, like buildings, will depreciate slowly, and machinery will depreciate rapidly. Comparability of depreciation policies will depend on the extent to which the concerns compared show similar proportions of the different kinds of fixed assets.

3. *Managerial policy.* The management may influence the depreciation reserve by adopting higher or lower rates—a matter of judgment and of conservatism. The life of an automobile, a machine, or a building is not wholly a matter of objective measurement, but is a subjective estimate related to problems of repair cost and is connected with other operating expenses. The subject is more properly considered in relation with earnings, but its importance is apparent at this point also.

Miscellaneous ratios. Since various writers have urged the more extensive use of ratios, it seems appropriate to mention a few here, with a brief statement of the theory behind their use and the reason for our failure to include them.[31]

1. *Fixed Tangible Assets to Net Worth* is intended to show (*a*) possible overexpansion of the fixed assets, and (*b*) the amount of owned capital tied up in fixed capital. The primary variable influence upon this ratio will be the proportion between debt and net worth, and consequently it cannot indicate overexpansion of fixed assets, which is tested by plant turnover and earning power. The second point sought has value as it relates to solvency, which is more directly and surely revealed by studying the various ratios of asset to debt and then testing the balance sheet values given for the assets.

2. *Fixed Liabilities to Total Assets* is intended to show the security of the former. The current liabilities have an equal claim upon at least a portion of the assets, and so a more adequate test is one which compares total debt to total assets. The

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[31] Negative material in the form of illustrations of what not to do may seem superfluous to some readers. But so strong is the power of suggestion when coming from the printed page that some warning seems necessary against the wasteful duplication of effort and misleading results which would come from adopting all of the multitude of ratios suggested by various writers.

fixed liabilities may be properly compared with those assets upon which they have a prior lien, as was previously suggested.

3. *Current Debt to Fixed Debt,* which shows the proportion of the debt which is near term, is intended to measure the proportion of hazard to solvency in the debt—the greater the proportion of current debt, the more hazardous it becomes. The only significant measure of debt hazard is found in the relation of the debt to the means of payment. The relation of one form of debt to another form can throw no significant light upon this point.

4. *Net Worth Turnover* is measured by the ratio of sales to tangible net worth, and is said to reveal the profitable employment of capital and overcapitalization.

The objections to this interpretation are analogous to those given in discussing "working capital turnover" in the preceding chapter. It is one of those "composite" ratios reflecting such opposite things that its movement in either direction might be favorable. To the extent that net worth is relatively large (and so gives a relatively low turnover), it may be the result either of large and slow-turning assets (receivables, inventory, and plant) or of large bank balances or outside investments. Slow turnover growing out of slow-turning operating assets would be unfavorable; but if it was the effect of large cash balances, it would be favorable, or if the result of outside investments, it would mean nothing, for such assets bear no relation to sales. The confusion of meaning does not end here, for the net worth turnover may be equally influenced by the relative debt burden, and, ironically enough, the concern that had the most top-heavy debt would by so reducing the net worth show the most favorable net worth turnover.

5. *Surplus to Capital Stock* is intended to show the conservatism of the management; the larger the ratio, the more conservative the management. Objections to such a test lie in the fact that on the one hand surplus can arise from so many directions besides retained earnings, and on the other hand it can be retained by the device of stock dividends without appearing in the Surplus and so in the numerator of this ratio. The age of the company is also likely to be a large factor in the ratio.

Conclusion. This chapter has presented the description of the items which ordinarily appear in the fixed capital section of the balance sheet, and the relations that are ordinarily scrutinized in its analysis. On the asset side of this section, the chief

items may ordinarily be classified as tangible fixed operating assets, nonoperating fixed assets, or intangibles. On the liability side appear the fixed debt, the preferred stock, and the interest of the common stockholders. The relationships or ratios used may vary with the type of analysis and the nature of the company. Those most generally useful are:

1. Capital structure proportions. (A percentage analysis of the fixed debt and net worth combined.)
2. Tangible Assets: Total Debt.
3. Working Capital: Fixed Debt.
4. Mortgaged Assets: Secured Fixed Debt.
5. Plant (fixed tangible operating assets) Turnover.
6. Reserve for Depreciation: Depreciable Assets.

The investments will, when the information is available, be studied as such—their income, earning power, and market value being of interest in proportion to the relative importance of the item among the assets. Unfortunately, the item is often wholly unexplained, the only clue to its value being the income derived, as it appears in the earnings statement. The requirements of the Securities and Exchange Commission are helpful when the company comes under its jurisdiction and the item is relatively large. Care should be taken to interpret ratio material in the light of the cautions suggested, and new ratios should be adopted only when it is certain that they add something of genuine value.

CHAPTER VII

Interpreting Balance Sheet Changes

Statement of balance sheet changes. Some years ago, Professor William Morse Cole gave the uneuphonious but highly descriptive title of "Where Got and Where Gone" Statement to a form showing changes in the balance sheet of a business over a series of years. Such a statement throws the changes into sharper relief and saves the reader the effort of so much computation. The advantages have been stated as follows: [1]

> It is obvious that an important result of constructing such a table . . . is the possibility of seeing from it at a glance the changes in solvency. Certain kinds of assets are always good, certain kinds are sometimes bad, and a few kinds are usually bad. Certain kinds of liabilities are not suspicious, and certain other kinds are often so. A summary table showing the changes indicates whether good assets are exchanged for less good, and whether troublesome liabilities are exchanged for those that are less exacting.

The illustration given on the following page shows the comparative balance sheet of a company for the years 1935 and 1940. The tabulation opposite to it shows merely the changes in the items. When an asset is disposed of, it either brings some other value into the balance sheet or results in the cancellation of some item on the liability side. The same result may be obtained by assuming a liability. For this reason, decreases in the asset side and increases in the liability side, indicating the source of funds or values used by the concern, are entered in the "Where Got" column. The resultant increases in asset accounts or reduction of liability, indicating where the values acquired by the business are bestowed, are entered in the "Where Gone" column.

The complementary character of this type of statement and the comparative balance sheet may be seen from the illustrative

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[1] Cole, W. M., *Accounts, Their Construction and Interpretation* (Boston: Houghton Mifflin Company, 1915), p. 97 *et seq.*

figures of the Farmers' Chemical Company, the data for which are drawn from an actual case. In this instance, the changes might have been added as supplementary columns to the comparative balance sheet, and such a form is highly useful where but two balance sheets are being studied. Many prefer this combination form because it permits the changes to be read with the amounts that have undergone change. Such comparison

FARMERS' CHEMICAL COMPANY

COMPARATIVE BALANCE SHEET

As of June 30

	1940	1935
Assets:		
Current Assets:		
Cash	$ 600,000	$ 300,000
Accounts and Notes Receivable	3,000,000	2,000,000
United States Bonds	100,000	.....
Inventories	1,300,000	1,500,000
Deferred Assets	1,000,000	2,000,000
Real Estate, etc.	11,000,000	10,000,000
Investments	800,000	1,700,000
Due from Allied Companies	1,300,000	1,100,000
	$19,100,000	$18,600,000
Liabilities:		
Current Liabilities:		
Accounts Payable	$ 500,000	$ 300,000
Notes Payable	2,000,000	2,000,000
Bonded Debt	4,000,000	5,500,000
Reserves	800,000	500,000
Preferred Stock	6,000,000	6,000,000
Common Stock	4,000,000	4,000,000
Surplus	1,800,000	300,000
	$19,100,000	$18,600,000

gives a sense of the relative importance of the changes. Here, however, we present a separate summary for the five-year period between June 30, 1935 and June 30, 1940. Such a summary has the advantage of giving the cumulative movement for a period: major tendencies are made clear; a year by year presentation would indicate the consistency of the movements and their conformity to business cycle influences.

Working capital changes. The changes in the current assets and current liabilities very greatly strengthened the working capital position of the company. While the accounts payable increased but $200,000, the current assets showed very gratifying increases amounting to $1,200,000—the net result of a $1,400,000 increase in cash, receivables, and United States bonds, and

a decrease of $200,000 in inventories. The increase of dollar assets is generally more favorable than the increase in inventory. When inventory does increase, it may represent accumulations of unsalable stock, or stock acquired in a high-priced market, that the management is unwilling to liquidate because of the potential loss.

The large increase in the amount owing from customers brings

FARMERS' CHEMICAL COMPANY

A SUMMARY OF BALANCE SHEET CHANGES FROM JUNE 30, 1935 TO JUNE 30, 1940

	Where Got, or Source of Funds	*Where Gone, or Use of Funds*
Assets:		
Current Assets:		
Cash		+$ 300,000
Accounts and Notes Receivable		+ 1,000,000
United States Bonds		+ 100,000
Inventories	—$ 200,000	
Deferred Assets	— 1,000,000	
Real Estate, etc.		+ 1,000,000
Investments	— 900,000	
Due from Allied Companies		+ 200,000
	—$2,100,000	+$2,600,000
Liabilities:		
Current Liabilities:		
Accounts Payable	+ 200,000	
Notes Payable		
Bonded Debt		—$1,500,000
Reserves	+ 300,000	
Preferred Stock		
Common Stock		
Surplus	+ 1,500,000	
	+$2,000,000	—$1,500,000

up the corresponding possibility of accumulated accounts of an uncollectible nature. This point can be checked up by referring to the change in volume of business as shown in the income statement. In this instance, increases in the price of the product and in the volume of sales offer a satisfactory explanation of the increase.

Deferred and intangible assets. Because of the size of the decrease, the reduction of the deferred assets is of importance, and the original size of the amount suggests the possibility that the item had an unusual content, including possibly organization expense or something of that intangible nature rather than

ordinary prepaid expenses. The writing off of this item has meant a reduction of surplus by so much. The actual increase in surplus of $1,500,000 is for this reason just so much more significant. The reduction of intangible assets would have worked in a similar manner. Decreases of this sort are to be watched, since, while they reduce surplus, they are frequently unrelated to operations. The disappearance of large deferred or intangible assets is regarded with favor, but the writing off of such items in prosperous years is likely to conceal from the casual reader who looks at only surplus the actual extent of the profits retained in the business.

Fixed assets and capitalization. The total fixed assets of this company show little net change. The reduction in investments shows a rough correspondence with the increase in real estate, which suggests the possibility of the absorption of subsidiaries' assets formerly controlled as separate corporations. Such an explanation, it is true, would not harmonize with the increase in amounts due from allied companies, and, as a matter of fact, the annual reports show this hypothesis to be highly improbable, since the increases in real estate and so forth were spread fairly regularly over the series of years while the investments were reduced by the amount shown in one year. While the clue was not significant in this case, the analyst should examine corresponding changes, particularly when the presumption of relationship is strong, as it was here. A particular evil to be watched for is the elimination of an intangible item like goodwill through its consolidation with some other asset like real estate.[2]

A series of annual increases without any decreases in the real estate or plant and equipment item suggests the possible addition of repairs and replacements to that asset. Whether this improper practice has occurred can be judged best by a study of the adequacy of the amount of repairs and maintenance in the profit and loss statement.[3] If a proper amount appears to have been spent in that direction, the presumption is in favor of the accounting having been properly made. Another test

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[2] William Post mentions an exceptional case in *The Four Big C's*, Part III (Philadelphia: Central National Bank, 1923), p. 25: "An experienced trade credit man, appointed head of a bank credit department, in studying the statements of a certain concern, noted the disappearance of $125,000 Goodwill and the coincident increase of quick assets. Investigation revealed that the item had been transferred to Accounts Receivable." Such improper accounting is usually confined to the unaudited statements of small and medium-sized concerns.

[3] See the treatment of this point in Chapter VIII.

would be to note whether the volume of business was increasing as rapidly as the increase in fixed assets used in the operation of the business would indicate that it should, as was discussed in the preceding chapter.

Where large increases are made in the plant item in one year, the nature of the additions should be learned. Cases are known where these apparent additions consisted of equipment units installed to replace discarded machines, the value of which was continued in the Asset account.

In the lower half of the statement, the bonded debt shows a decrease of $1,500,000. If this had been offset by an increase of the current liabilities, the financial condition would have been weakened. The corresponding change is, however, in surplus. The stockholders have increased their investment in the company by leaving profits in the business. These profits may be said to have been used to retire a part of the bondholders' interest in the enterprise.

A similar reduction of notes payable would have been regarded as more favorable, since they are a more serious threat to solvency than are bonds. Low interest rates have made bank borrowing attractive in recent years but the tendency is to arrange the maturity of such loans over a short period of years during which the company plans their retirement rather than to carry a single short-term loan subject to continued renewal.

In general, a change from current indebtedness to fixed or bonded indebtedness increases the strength of the financial structure. A change from either form of indebtedness to an increase in the stockholders' interests, either through increase in the outstanding stock or the surplus, is likewise regarded as an indication of strength.

There is some increase in the reserves, but its significance is doubtful because the nature of the account is not stated. Valuation, as well as surplus, reserves indirectly aid in the conservation of working capital by reducing surplus and, to that extent, the likelihood of dividend disbursements. The concern may, of course, dissipate working capital acquired through this source by purchasing fixed assets or making reductions in the fixed liabilities.

Source and application of funds statement. The title "Where Got and Where Gone," for what is more accurately described as a statement of balance sheet changes, leads us to a consideration of the more elaborate statement sometimes prepared by

the accountant which is called a "source and application of funds" statement. The latter form is a modification of the former, and is intended to portray more exactly the inflow and outgo of actual funds. The adjustments made to obtain this form of report may be grouped as follows:

1. The elimination of purely bookkeeping entries that represent no flow of funds. The largest items of this sort usually arise from revaluation of some asset such as land and buildings or goodwill. If land and buildings had been increased as the result of an appraisal, or goodwill written off, the list of balance sheet changes would be adjusted to eliminate the effect of these bookkeeping entries upon both the asset and the surplus account. Similarly, stock dividends represent not a real flow of funds but a transfer from the surplus account to the capital stock account and a change in the number of shares into which net worth is divided; their effect would be eliminated.

Allowances for depreciation, depletion, and obsolescence fall in this same group, and the elimination of these items affects the reserve for depreciation and the surplus. However, such an adjustment suggests too narrow an interpretation of the term "funds." Is it the intent to make the source and application of funds statement a mere recital of strictly cash changes? Presumably not; and if not, then the loss of values through depreciation that represents the consumption of fixed assets in the processes of production should probably be reflected in the same way as the loss or consumption of other values in this statement, although a proper segregation of this particular change because of its special nature is useful to the reader.

2. The connection of related items to present a more coherent result. Thus, a piece of real estate against which a depreciation reserve had been set up might be sold at either a profit or a loss. The three resulting changes in the balance sheet might be brought together to show the net result as follows:

Cost of Real Estate Sold	$1,000,000	
Less Allowance for Depreciation	300,000	
Net Book Value	$ 700,000	
Plus Profit on Sale	150,000	
Funds Derived from Sale of Real Estate		$850,000

The $1,000,000 reduction in the Real Estate account, the $300,000 decrease in the depreciation reserve assuming that is the nature of the Reserves), and the surplus change from profit are

brought together. Similarly, a premium or discount on stocks or bonds sold may be combined with the amount of security sold to bring out the amount of funds realized from issue.

3. The addition of distributed profits to the figures shown. Earnings distributed as cash dividends are added to the list under the "Application of Funds" heading and an equal sum added to the surplus increase figure under the "Source of Funds" heading.

The information necessary to make all of these changes is not available to the outsider, but the list is suggestive of points which may be kept in mind in reading an ordinary summary of balance sheet changes. The primary purpose of such a summary is to bring out major changes which would not be so apparent to one reading the comparative balance sheet alone. The larger changes revealed, the process of scrutiny still remains, and any comment should show that the analyst recognizes such changes as are largely nominal, such as change in goodwill valuation, or change in different parts of the balance sheet which are closely related.[4]

Summary of Changes in Net Current Assets. Because the Source and Application of Funds statement is often difficult for the non-accountant to understand, a Summary of Changes in Net Current Assets statement has been proposed.[5] This form

SUMMARY OF CHANGES IN NET CURRENT ASSETS FOR THE YEAR ENDED DECEMBER 31, 19..
(thousands of dollars)

Net Current Assets, January 1, 19..			420
Additions:			
Net Sales and Other Income	983		
Receipts from Issuance of Bonds	297		
Net proceeds from Sale of Fixed Assets	46	1,326	
Deductions:			
Current Costs and Expenses Which Reduced Net Current Assets	821		
Additions to Buildings	400		
New Machinery Purchased	75		
Dividends Declared	40		
Cost of Treasury Stock—50 Shares	4	1,340	
Net Decrease			14
Net Current Assets, December 31, 19..			406

[4] For a fuller description of the statement of application of funds, see Finney, H. A., *Principles of Accounting (Intermediate,* 1934), Chaps. 29 and 30.

[5] Kunze, Harry L., "A New Form of Funds Statement," *Accounting Review,* June, 1940, p. 222. The article points out some criticisms of the currently used and incorrectly named, "Statement of Application of Funds."

includes only those balance sheet changes outside the working capital section which impinge on the working capital (or net current assets). Thus, "Current Costs and Expenses Which Reduced Net Current Assets," shown in the illustration above would exclude depreciation expense and discount on bonds written off. As in the previously discussed statement, closely related balance sheet changes are assembled for the benefit of the reader. The item "Receipts from Issuance of Bonds" would represent the increase in bond liability minus bond discount set up among the assets; the "Net Proceeds from the Sale of Fixed Assets" would include the reduction of the asset account less the decrease in the reserve for depreciation plus (or minus) the profit (or loss) on the sale.

This statement, supplemented by a schedule of the individual changes in the current assets and current liabilities, would probably be most useful for the management and the bank credit analyst. For investment analysis, the plain statement of balance sheet changes will generally have the greater value. (Another example of the latter will be found later in this chapter.)

Percentage balance sheets. Another device for the study of balance sheets and their changes is the percentage balance sheet. Such statements have been termed "common-size balance sheets" because every statement is reduced to total one hundred.[6] Percentage figures are but infrequently presented in independent form, as in the first illustration below. They are more often added to comparative balance sheets by the accountant, when he is preparing a report for the executive, in the manner illustrated by the second case below.

The comparative balance sheet of the Farmers' Chemical Company discussed previously appears in the form shown on the opposite page when presented in percentage form.

The important changes are again emphasized, although in a manner somewhat different from that employed in the statement of balance sheet changes. The favorable increases in working capital, reserves, and surplus, together with the decreases in the unfavorable items of deferred assets and bonded debt, are quite clear. While improvement is shown, it is also more apparent than in the original figures that the fixed assets are relatively large when compared with the current assets and the

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[6] Wall, Alexander, and Duning, R. W., *Ratio Analysis of Financial Statements* (New York: Harper and Brothers, 1928), Chap. VI, "Common-size Statements."

indebtedness is relatively high for an industrial corporation. Comparisons with companies in the same line of business but of different size in order to discover peculiarities are made easy by this technique. Instead of the absolute changes in dollars shown in the original comparative balance sheet, the changes here are changes in proportion. As a result, an increasing asset

FARMERS' CHEMICAL COMPANY

COMPARATIVE BALANCE SHEET IN PERCENTAGE FORM

As of June 30

	1940 *Per Cent*	1935 *Per Cent*
Assets:		
Current Assets:		
Cash	3.1	1.6
Accounts and Notes Receivable	15.7	10.8
United States Bonds	.5	...
Inventories	6.8	8.1
Deferred Assets	5.2	10.8
Real Estate, etc.	57.7	53.7
Investments	4.2	9.1
Due from Allied Companies	6.8	5.9
	100.0	100.0
Liabilities:		
Current Liabilities:		
Accounts Payable	2.6	1.6
Notes Payable	10.5	10.8
Bonded Debt	21.0	29.6
Reserves	4.1	2.7
Preferred Stock	31.4	32.2
Common Stock	21.0	21.5
Surplus	9.4	1.6
	100.0	100.0

or liability will show a decreasing per cent if it fails to grow as rapidly as the total does.

The percentage balance sheet is really a miniature of the original, the percentages being in the exact proportions of the original figures and much easier to read. The virtue of this form in throwing into relief significant tendencies in proportion, such as especially characterize the usual year-to-year comparative balance sheet, is shown in the statements of Container Corporation of America.

A single table follows the comparative balance sheet, showing three types of material used to aid in the study of comparative balance sheets: (*a*) percentage balance sheets, (*b*) a summary

of the dollar changes in the balance sheets, and (*c*) trend percentages (discussed later in this chapter), using the initial year figures (1932) as equal to 100.

The percentage balance sheets show that the proportions have altered considerably in the period under review. The current assets rose from 14 to 29 per cent of total assets, while fixed

CONTAINER CORPORATION OF AMERICA*

COMPARATIVE CONSOLIDATED BALANCE SHEET

(Corporation and Subsidiary Companies)
As of December 31

Assets

	1940	*1935*	*1932*
Cash on Hand and in Banks	$ 2,456,532	$ 1,131,576	$ 1,027,685
Accts. & Notes Receiv. (net)	1,969,006	1,155,580	804,972
Inventories	3,410,931	2,896,060	1,257,032
Total Current Assets	$ 7,836,469	$ 5,183,216	$ 3,089,689
Other Receiv. & Invest.	802,253	90,563	40,475
Treasury Stock (cost)	.....	.....	93,750
Land	3,485,447	3,237,069	3,251,857
Bldgs., Machy., & Equip.	25,096,655	21,143,364	19,734,390
Gross Property	$28,582,102	$24,380,433	$22,986,247
Reserve for Depreciation	10,992,835	6,760,214	4,949,959
Net Property	$17,589,267	$17,620,219	$18,036,288
Deferred Charges	187,062	433,644	591,908
Goodwill & Patents	1	1	1
	$26,415,052	$23,327,643	$21,852,111

Liabilities

Accounts Payable	$ 345,977	$ 758,558	$ 340,754
Accrued Wages, Taxes, Interest, etc.	832,830	329,066	279,899
Reserve for Federal Income Tax	1,186,977	217,500	.....
Sinking Fund Pay, Due within Year	.....	250,000	14,000
Total Current Liabilities	$ 2,365,784	$ 1,555,124	$ 634,653
Funded Debt	4,100,000	7,736,360	8,666,000
Reserve for Contingencies	.....	417,614	86,122
Capital Stock	15,625,060	13,070,800	.....
7% Preferred Stock	.....	.....	1,832,200
Class A Common Stock	.....	.....	7,471,100
Class B Common Stock	.....	.....	2,890,945
Capital Surplus	671,494	.....	1,460,811
Earned Surplus	3,652,714	547,745	*1,189,720def*
	$26,415,052	$23,327,643	$21,852,111
Working Capital	$ 5,470,685	$ 3,628,092	$ 2,455,036

* Source: *Annual Report for 1940.* Report shows comparative balance sheet for years 1929–1940, inclusive.

operating assets decreased from 82 to 67 per cent. The latter change grew out of the rapid growth of the reserve for depreciation; the gross plant showed little change as a per cent of total assets. Growth in liquidity of this sort is regarded as favorable.

CONTAINER CORPORATION OF AMERICA

A—Comparative Percentage Balance Sheets
B—Summary of Balance Sheet Changes in Dollars (00,000 Omitted)
C—Trend Percentages (1932 = 100)

	A—Percentages			B—Changes		C—Trend % s	
Assets	*1940*	*1935*	*1932*	*1935–40*	*1932–35*	*1940*	*1935*
Cash	9	5	5	+1.3	+ .1	239	110
Receivables (net)	7	5	3	+ .8	+ .4	245	144
Inventories	13	12	6	+ .5	+1.6	271	230
Total Cur. Assets	29	22	14	+2.6	+2.1	254	168
Other Rec., Invest.	3	..	..	+ .7	+ .1	1982	224
Treasury Stock	..	..	1	....	— .1		
Land	13	14	15	+ .2		107	100
Building & Equip.	95	91	90	+4.0	+1.4	127	107
Gross Plant	108	105	105	+4.2	+1.4	124	106
Res. for Deprec.	41	29	23	+4.2	+1.8	222	137
Net Plant	67	76	82	0	— .4	98	98
Deferred Charges	1	2	3	— .2	— .2	32	73
Total Assets	100	100	100	+3.1	+1.5	121	107
Liabilities							
Accounts Payable	1	3	2	— .4	+ .4	102	223
Accrued Expenses	3	2	1	+ .5	+ .1	298	118
Res. for Fed. Inc. Tax	5	1	..	+1.0	+ .2		
Sinking Fund Liab.	..	1	..	— .3	+ .2		
Total Cur. Liab.	9	7	3	+ .8	+ .9	373	245
Funded Debt	15	33	40	—3.6	— .9	47	89
Res. for Conting.	..	2	..	— .4	+ .3		
Capital Stock	59	56	..	+2.5	+13.1		
Preferred Stock	..	..	8	0	— 1.8		
Class A Stock	..	..	34	0	— 7.5		
Class B Stock	..	..	13	0	— 2.9		
Capital Surplus	3	..	7	+ .7	— 1.5		
Earned Surplus	14	2	*5d*	+3.1	+ 1.7		
Total Liabilities	100	100	100	+3.1	+ 1.5	121	107
Working Capital	20	15	11	+1.8	+ 1.2	224	148

On the liability side, an increase in current debt, chiefly resulting from Federal income tax reserve, has been more than counterbalanced by a reduction in funded debt from 40 to 15 per cent. Another favorable change is the rise of earned surplus from a deficit of 5 per cent to a surplus of 14 per cent.

When the absolute dollar changes are wanted to balance im-

pressions derived from percentage changes, section B of the table can be examined. It is stated in millions (thus 1.3 is $1,300,000).

The indexes based on 1932 figures show substantial growth for 1935 and 1940. The increase in receivables and inventory should be related to increases in sales. In part, all three items reflect a rise in prices. The wholesale price index for paper rose 10 per cent between 1932 and 1935; 29 per cent between 1932 and 1940. Clearly the major element was not price change but increased physical volume of sales. The total increase in current assets of 154 per cent is impressive. Net plant actually declined 2 per cent, although gross plant rose 24 per cent; the reserve for depreciation more than doubled. As is frequently the case when business recovers from the doldrums, current liabilities rose at a faster pace than current assets. The increase of the former was 273 per cent, of the latter 154 per cent. The reduction of 53 per cent in funded debt is especially favorable because of the size of the item. Since recapitalization took place after 1932, no index is shown for the stock accounts. The sum of the stock and capital surplus accounts showed a moderate rise, chiefly between 1935 and 1940. Likewise, the deficit in 1932 offers no base for the computation of indexes for earned surplus.

Percentage balance sheets are in a sense ratio analysis.[7] They present the constituent assets and liabilities as ratios to the balance sheet total. Their value lies in their simple and direct picture of proportion. They give no clue, however, to growth or shrinkage of the absolute dollar amounts in the actual balance sheets, and so take on additional meaning, just as the summary of balance sheet changes does, in relation to the original figures.

Value of brevity. These percentage figures have emphasized the utility of short and significant figures as compared with the cumbersome long ones in the original balance sheet. Most statistical agencies now omit the cents in reporting statements. In analytical work, not only may time be saved, but the readability and meaning of the balance sheet may be increased by using the shortened, significant amounts in a condensed form.

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[7] An interesting application of the percentage balance sheet is found in a study of 183 unsuccessful industrial corporations over the ten years prior to failure: Smith, Raymond F., and Winakor, Arthur H., *Changes in the Financial Structure of Unsuccessful Corporations* (Urbana: Bureau of Business Research, University of Illinois, 1935). The proportion of current to fixed assets showed a persistent decline over the whole ten-year period. (Chart 2, p. 20); the common stock equity shrank and long-term debt expanded percentagewise in the last three years (Chart 3, p. 23).

Thus, the Container Corporation figures for the three years might be presented as follows:

CONTAINER CORPORATION OF AMERICA

CONDENSED COMPARATIVE BALANCE SHEET
(00,000 Omitted)

	1940	1935	1932
Assets			
Cash	2.4	1.1	1.0
Receivables (net)	2.0	1.2	.8
Inventories	3.4	2.9	1.3
Total Current Assets	7.8	5.2	3.1
Other Rec., Invest.	.8	.1	.1
Property (Net) *	17.6	17.6	18.0
Treasury Stock	....	....	.1
Deferred Charges	.2	.4	.6
Total	26.4	23.3	21.9
Liabilities			
Accounts Payable	.4	.8	.3
Accrued Wages, etc.	.8	.3	.3
Reserve for Fed. Income Tax	1.2	.2	....
Sinking Fund Payment	....	.3	....
Total Current Liabilities	2.4	1.6	.6
Funded Debt	4.1	7.7	8.7
Reserve for Contingencies	....	.4	.1
Capital Stock	15.6	13.1	....
7% Preferred Stock	....	....	1.8
Class A Common Stock	....	....	7.5
Class B Common Stock	....	....	2.9
Capital Surplus	.7	....	1.5
Earned Surplus	3.6	.5	*def. 1.2*
Total	26.4	23.3	21.9
* Depreciation Reserve	11.0	6.8	4.9

The figures in such clipped form may conceal some details of interest. At some point in a study it is helpful, usually at the very beginning, for the analyst to boil down the material so as to bring out major tendencies. This simplifying device, unlike others mentioned, requires no computation. If the significant figures (usually four, instead of the three used above, will be enough) are retained they will be sufficient for calculating other ratios and data and for the construction of charts.

Summarizing balance sheet changes. The statement of dollar changes in the balance sheet, like the percentage balance sheets, could not be attached to the original comparative statement because of the limitations of space. The effectiveness of

their presentation is also reduced because of their separation from the titles by three columns of percentages. Their story would seem to be self-evident, but the following summary, or statement of source and use of funds, shows how a suitable form with some condensation can clarify the recital:

SUMMARY OF BALANCE SHEET CHANGES
1932 to 1935

Sources of Funds

Decreases in:	
Plant	$ 420,000
Deferred Charges	160,000
Treasury Stock	90,000
Increases in Current Liabilities:	
Accounts Payable	420,000
Accrued Expenses	50,000
Reserve for Income Taxes	220,000
Sinking Fund Payment	230,000
Increase in Capital Stock	13,070,000
Surplus Retained as Increases in:	
Earned Surplus	1,720,000
Reserve for Contingencies	330,000
Total Sources	$16,710,000

Use of Funds

Increase in Assets:	
Cash	$ 100,000
Receivables	350,000
Inventories	1,640,000
Other Receivables and Investments	50,000
Decrease in Funded Debt	930,000
Decrease in Stocks Outstanding:	
Preferred Stock	1,830,000
Class A Common	7,470,000
Class B Common	2,890,000
Capital Surplus	1,460,000
Total Used	$16,720,000

Note: Totals differ because fractions dropped did not balance exactly.

1935 to 1940

Sources of Funds

Decrease in Plant	$ 30,000
Decrease in Deferred Charges	250,000
Increase in Current Liabilities:	
Accrued Expenses	500,000
Reserve for Income Taxes	970,000
Increase in Capital Stock:	
Capital Stock	2,550,000
Capital Surplus	670,000
Earned Surplus Retained	3,100,000
Total Sources	$ 8,070,000

Use of Funds

Increases in Current Assets:	
Cash	$ 1,320,000
Receivables	810,000
Inventories	510,000
Increase in Other Receiv. & Invest.	710,000
Decrease in Current Liabilities:	
Accounts Payable	410,000
Sinking Fund Payments	250,000
Decrease in Funded Debt	3,640,000
Decrease in Reserve for Contingencies	420,000
Total Used	$ 8,070,000

In order to make this summary into a "source and application of funds statement" in the form approved by the accountant, the following changes would be necessary:

1. Cash dividend distributions would be introduced as one of the applications, or uses, and the counterbalancing item would be an additional Increase in Earned Surplus under *Sources of Funds*.

2. Bond or other security retirements would be shown at their purchase cost. Any gain (or loss) from the purchase of bonds at less (or more) than par would be subtracted from (or added to) the amount (as shown above) of funds used, to reduce Funded Debt. Since such gain (or loss) is now included in the change in Earned Surplus, that amount would be removed from the total.

3. The change in the Gross Plant account and in the depreciation reserve would be treated separately and the change in the reserve eliminated as not a "real" change in funds. The increase in the depreciation reserve would thereby be converted into an increase in surplus. This treatment is fallacious, in the opinion of this writer, for the two are clearly unlike. Furthermore, the loss in value of plant represented by the increasing depreciation reserve is as truly a "source of funds" as a conversion of raw materials inventory. Both plant and raw materials are being consumed by the processes of production to produce revenues; and if they are not replaced at once, the net result is a decrease in that asset which provides funds that may be applied elsewhere. The difference between the conversion of these two assets is a matter of the time interval involved, a machine taking years where the raw materials inventory takes only months. It is true that either a profit or a loss may result in this conversion process,

so that the total amount realized is more or less than cost; but this difference is only a part of the general operating results reflected in surplus change. Except for a few surplus changes resulting from large and unusual nonoperating factors, surplus change is more properly broken down in the Income account than in a summary of balance sheet changes, even when it bears the title of Source and Application of Funds Statement.

If it appears desirable to show the plant and reserve changes apart, the essential character of the latter as plant write-off should be kept in mind.

4. The contingency and similar reserves are so allied to surplus that the changes in both would be associated or combined with the surplus change. Then, if any portion of these reserves are used, as for unforeseen Federal taxes for prior years, that charge would be stated among the Uses of Funds. Or, if the contingency reserve had been a reserve set up for actual change in the market value of some current asset, it could have been combined with the change in the corresponding asset, as a valuation reserve would be. (Or, eliminated if such non-cash value changes are to be excluded.)

5. Since the elimination of the Preferred, Class A and Class B Stocks took place as a result of an exchange for the new capital stock of a single kind in 1935, those changes would be eliminated as showing no source or use of funds. It will be noted that the sum in 1932 of the three classes of old stock plus Capital Surplus minus Treasury Stock substantially equaled the Capital Stock account in 1935.

Trend percentages. Another device for the analysis of successive balance sheets has been proposed by Gilman.[8] Like the summary of balance sheet changes, it stresses change between periods. Instead of stating the dollar amount or the per cent change, it gives ratios between each item in the particular balance sheet and the corresponding figure in the initial balance sheet. If these trend percentages are thought of as index numbers, it may be said that they are a series of index numbers worked out for each balance sheet account; the amount of each account in the initial year becomes the base, and so equals 100 for that series. Since all the figures for the initial, or base, year are equal to 100,

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[8] Gilman, Stephen, *Analyzing Financial Statements* (New York: Ronald Press, rev. ed., 1934), Chaps. 12–14.

they are not shown for 1932 in the illustrative figures for the Container Corporation.

In comparing the trend method of balance sheet analysis with the ratio method, Gilman states the following as advantages of the former:

1. It furnishes a bird's-eye view of the problem.
2. The facts are presented in comparative form.
3. The trends are shown vividly.
4. The figures are easier to interpret.
5. Less highly trained help is required to work out the figures for analysis, and the calculations can be made much more quickly.
6. There is less liability for gross error because the resulting percentages are partially self-auditing through comparison with the actual figures.[9]

The chief limitations of trend percentage analysis are:

1. Undue emphasis upon the variation of the least significant members of the balance sheet, because they ordinarily vary the most percentagewise. A ten per cent increase in a major account like Inventory is likely to be far more important than a 1,000 per cent increase in some minor account, such as Deferred Charges, Sundry Debtors, or some small reserve account. Even among the more significant accounts, a twenty per cent change in Cash is likely to be less significant than a ten per cent change in Inventory—the former amount usually being so much smaller than the latter. In this respect, the simple summary of balance sheet changes in dollar amounts has an advantage.

2. It emphasizes change in relation to the amount in the initial, or base, year, which is not necessarily normal. Thus, if inventory were unusually low and receivables normal in the base year, any tendency towards the usual proportions would give the impression of extreme change in the inventory.

The chief utility of trend percentages is likely to lie in their application to just the major items in the balance sheet and in comparing them only when some relationship or balance is expected, as in the case of inventory, receivables, and plant, or debt and net worth. Many will be inclined to point out, however, that if trend percentage changes are for the purpose of detecting undesirable changes in balance, a more direct check between the items themselves, or with some measuring stick, such as sales, is usually the more logical way to detect whatever disproportion

[9] Gilman, Stephen, *Analyzing Financial Statements* (New York: Ronald Press, 1925), p. 121.

may have developed. Thus, if total debt increases its trend per cent from 100 to 200 while net worth increases from 100 to 110, a "dangerous tendency" is noted; but if the debt has merely risen from one-ninth of the net worth to one-fifth of the net worth, as illustrated in the figures below, the change need not be alarming.

	Dollars		*Trend %s*	
	1937	1940	1937	1940
Debt	10	20	100	200
Net Worth	90	99	100	110

The ratio of debt to net worth not only tells whether or not the "dangerous tendency" is developing, but it directly answers the central question involved: namely, as to the net effect upon the balance, or proportion, of the changing amounts portrayed by trend percentages.

Method of using statements of comparison. A summary of the more important questions to be asked in a study of the balance sheet changes will read:

1. What changes are taking place in the working capital position, and is that position growing stronger or weaker?

a. Are there any considerable increases in cash or marketable securities indicating a surplus of working funds?

b. Are the changes in the amount of receivables in proportion to changes in the volume of business, or does there appear to be an accumulation of uncollectible accounts taking place?

c. Do the changes in inventory appear to indicate an untimely accumulation of stock? In a period of depression this condition is frequently evidenced by a concurrent increase in inventory and decrease in receivables.

d. Are there sufficient increases in current indebtedness, particularly notes payable, to show a possible need for additional working capital?

e. Have the current liabilities increased out of proportion to the current asset increases? In order to maintain an existing two-to-one ratio, the latter must increase twice as much as the former; to maintain a three-to-one ratio, three times as much; and so on.

2. What significant changes, if any, have occurred in the fixed asset group?

a. Plant and equipment, or land and buildings. If the changes are increases, do they represent improper accounting for repairs,

unprofitable additions, or profitable expansion? If the changes are decreases, do they represent allowances for depreciation, or the sale or loss of a part of the asset? If the decrease is attributable to the former cause, the question is whether the allowance is inadequate, reasonable, or excessive; if to the latter, the question is whether profitable or unprofitable property has been parted with.

b. Changes in the Investments account call up questions similar to those listed for the preceding item, namely, as to whether the change is a profitable one; but there is no depreciation allowance to be accounted for. It would also be desirable to ascertain, if possible, whether the value of the investments is greater or less than it was at the time acquired.

c. If the amounts due from allied companies are on the increase and are of significant size, an attempt should be made to learn the nature and financial condition of the concerns which are owing.

d. Intangibles ordinarily remain fairly constant from year to year. If there are increases, do they represent *bona fide* purchases or an improper bookkeeping entry inflating the item for the effect which it will have on surplus? If the decreases are considerable, they should be taken into account in the interpretation of the surplus, as suggested in the discussion of the deferred charge item of the Farmers' Chemical Company described above.

3. Do the changes in capitalization and surplus reserves represent growing strength or weakness?

a. Does the bonded debt remain constant or show a tendency to increase, or does the management seek a steady reduction of this debt?

b. Do the increases in capital stock represent sales of new stock or stock dividends? Do the increases, if any, in preferred stock make that amount disproportionate to the interest of the common stockholders?

c. What policy on the part of the management do the changes in surplus seem to reveal? Are the sums laid aside from earnings negligible, moderate, or large?

d. Are there any considerable changes in surplus reserves which require attention in interpreting the other accounts which represent the stockholders' interests?

Conclusions. Three general techniques for treating balance sheet material in order to facilitate a study of changes from period to period have been presented in this chapter. The first is a summary of balance sheet changes, which may be simply the actual dollar changes added to a comparative balance sheet. These changes may be separately stated and, when arranged and elaborated, are called a Statement of Source and Application of Funds. The merit of such a report lies partly in its simplicity and partly in the fact that it throws the changes into clear relief. The comparative balance sheet has the facts about changes, but the mind does not take them in so readily as when they are stated *as changes.* This statement still leaves the reader to give meaning to the changes it summarizes.

The percentage balance sheet, the second technique, has also the merit of simplicity in method and brevity in form. Where the original balance sheet and the statement of its changes describe absolute dollar amounts, this second device tells only one thing—*the proportions* which the various items bear to the total. With such figures, improvements or deterioration in financial condition is more readily detected. This type of presentation is particularly valuable when the whole balance sheet is expanding or contracting, for then relative change in relation to the other items, rather than absolute change, is the more important, and less easily discovered than in a static business.

Finally, trend percentages are employed by some to show the rate of change of the individual balance sheet items. By showing the relative change of individual items, they may disclose unequal change, the significance of which remains to be weighed and interpreted by the reader.

In practice, much of this detail can be omitted, because of the little it adds to many statements, or must be omitted, because the additional effort required is too expensive for the results achieved. The more experienced reader can often dispense with a statement of changes, the original figures being adequate. The most generally valuable device is likely to be the percentage balance sheet, and it will be most frequently employed by a management intensely interested in the details of its own business, or in the more elaborate type of investment study where intensive scrutiny is justified by the financial importance of the decisions to be arrived at.

CHAPTER VIII

Analysis of the Income Statement

Necessity for the income statement. The statement of earnings is of particular importance to the analyst who is interested in obtaining a long-range view of the business. The longer the reader's claim on the business is likely to continue, the more lively his concern over the profit and loss. The managers and the investors will have the greatest stake. Investors wish more than the mere maintenance of the principal sum they have placed in the business, since they purchase a corporation's securities for the income over a period of years. The failure of income, even though the property remains unimpaired, is usually sufficient to bring about a serious fall in the market value of the security held.

Balance sheets must be supplemented, to be of the greatest value. Progress or retrogression may be more easily concealed where there is no report of earnings. The failure to record properly the changes in the amount of the fixed assets is one method of manipulation. Repairs may be added to the asset, inflating the item, or excessive depreciation allowances may result in an understatement of the asset. That portion of the income statement which is discussed later, under the topic of maintenance and depreciation, provides some check upon such changes. Other difficulties may arise where judgment is based on the balance sheets alone. Growth in surplus may be mistaken for evidence of earnings when it is really surplus paid in by stockholders or the result of asset revaluation. On the other hand, a declining surplus in the face of good earnings may result from a very generous dividend policy or an asset revaluation.

Gross revenues or sales. "Gross Revenues" or "Sales" should be the opening caption of the well-constructed income statement. The figure should show the gross amount realized from the sales of services or goods which represent the regular operations of the business. Often the title "Net Sales" is used as the initial figure to show that the gross sales have been reduced by deductions for returned goods, allowances, and sometimes discounts. These

subtractions are primarily of interest to management, and the net figure is regarded as more valuable for analytical purposes.[1] The terms *Gross Earnings* and *Gross Income* ordinarily indicate net figures after certain expenses have been taken out, and so mean that the statement has been abbreviated.

Some uses of this measure of business volume have been suggested already in its relation to other items, particularly inventory and receivables. The figure itself is of first-rate importance when traced from year to year. Over a substantial period, the sales will be examined for evidence of the future trend and of general year-to-year stability. A graph showing the course of yearly sales is especially useful, since a line plotted on a chart is even clearer than a tabulation of figures. Similar figures for comparable concerns will aid in the interpretation of the trend. (See pages 245, 246 below.)

Four factors must be considered in the interpretation of the year-to-year dollar volume of business: (1) the profitableness of particular sales increases or decreases; (2) the trend of business in general; (3) the trend of the particular line of business in which the concern is engaged; and (4) changes in the level of prices at which goods are being sold. The first point is often overlooked, sales being thought of as an end in themselves, although additional sales may be achieved at such a high cost or at such a low price as to make them unprofitable. The matter is more properly discussed later; but when sales figures are studied, the related profit angle should be kept in mind.[2]

Since achievement is relative, the sales attained by a business should be studied in the light of general business conditions. Depression and boom constitute external factors, and growth and shrinkage which result from them do not have the same significance as when they flow from the internal factors, or management. Similarly, account must be taken of such conditions as are peculiar to the particular industry. Comparison of earnings

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[1] For forms reflecting these and similar internal problems of primary concern to a retail merchandising management, see Tables 49 and 50 and the accompanying discussion in Duncan, D. J., and Phillips, C. F., *Retailing Principles and Methods* (Chicago: Richard D. Irwin, Inc., 1941), pp. 828, 829.

[2] The idea that cost accounting should apply not only to production costs but also to selling expense, in order that sales which cause selling expenses in excess of the gross profit margin may be avoided, has not received as much consideration as it would seem to warrant. For a valuable point of view, see Heckert, J. Brooks, *The Analysis and Control of Distribution Costs* (New York: Ronald Press, 1940).

results with those of like concerns is for the purpose of discovering how effectively the business has taken advantage of fair weather and how skillfully it has weathered economic storms both of business generally and of the specific kind of industry.

A failure to note the fourth factor may cause undue optimism during a period of rising prices and unnecessary pessimism during a period of declining prices. By finding the per cent of change in the price of goods sold, the reader can estimate the amount of change due to the price factor, and, by inference, the part due to a change in the number of units sold. The following is a hypothetical case in which prices in 1939 and 1940 are assumed to be 110 per cent of what they were in 1938. By treating this index as a percentage and dividing it into the sales figure, the analyst obtains the amounts in the last column, which show what the sales volume in each of the years would be if stated at the same prices as those in 1938.[3]

Year	*Annual Sales*	*Price Index*	*Sales at 1938 Prices*
1938	$100,000	100	$100,000
1939	$110,000	110	$100,000
1940	$120,000	110	$109,091

The chief difficulty in employing this method to discover how far the physical volume has changed lies in the selection of an appropriate index. Inaccuracy in results may obtain (*a*) if an index is chosen which reflects the prices of a somewhat different selection of articles from that sold by the business analyzed; or (*b*) if the weight given to the different prices in the index differs from the proportions in which the various items are sold by the business; or (*c*) if a wholesale price index is used when retail trade is being analyzed. Some concerns come to the assistance of the reader by publishing physical volume figures. Some of the retail grocery chains report tonnage of merchandise moved; other concerns, the units of product sold. Such figures may have a variable meaning, as when a grocery chain adds meat departments in its various stores over a period of years, meats probably having an above-average value per ton; or when a shoe manu-

[3] Price data and index numbers for prices of various kinds are widely available through various statistical agencies and trade journals. The work of the Bureau of Labor Statistics of the United States Department of Labor is notable and well known. The *Statistical Bulletin* of the Standard Trade and Securities Service brings together in convenient form a great deal of this and other material from many different sources.

facturer, like Endicott Johnson Corporation, reporting pairs of shoes sold, notes an increasing proportion of lower-cost canvas footwear in its sales; or when an automobile manufacturer, like General Motors Corporation, reporting number of automobiles sold, shows an increasing proportion of its cars sold in the Chevrolet, or low price, class. Allowance should be made for changing meaning of either deflated dollar sales volume, through the price index device, or actual figures on physical volume sold.

It is necessary to watch for factors that may impair the comparability of the sales or revenue figures. Occasionally, a non-operating profit or gain is placed here through inaccurate accounting. An example would be the inclusion of the sale of factory equipment, or other fixed assets, in the regular sales figure. Sometimes the operations of formerly separate subsidiary companies are merged with the parent company's business but no specific notice of the merging appears in the report. Such a possibility can be detected by an examination of the changes in the fixed assets during the period under review.

Operating costs. The operating expenses, following the revenue figure, are frequently stated as a single sum, thus:

Gross Revenues	$.....
Operating Expenses	.....
Net Earnings	$.....

This form would be suitable for a utility or other business selling services rather than merchandise. It is not to be mistaken for the following form sometimes used by merchants who do not wish to state the amount of their sales.

Gross Earnings	$.....
Operating Expenses	.....
Net Operating Profit	$.....

The gross earnings represent the margin earned between the sales and the cost of goods sold, and a more satisfactory condensed form for a mercantile or manufacturing concern would read:

Net Sales	$.....
Cost of Goods Sold	.....
Gross Trading (or Operating) Profit	$.....
Selling and Administrative Expense	.....
Net Operating Profit	$.....

This last form, while not generally used in published reports, is of particular interest in showing the relation of cost to selling

price. The data would be of value in explaining changes in net earnings.

The margin of gross profit, when expressed as a per cent and read in conjunction with the net profit figure, tells the banker or mercantile credit man who is familiar with trade practice whether a sufficient margin of profit or "mark-up" is being taken. When a cut-rate policy is being pursued, the net profits will show whether the policy is successful. Where the mark-ups are known and readily available, as in a well-organized department store, the sales may be used by the management as a basis for estimating gross profits before inventory is taken.

A similar use is made of such figures by persons wishing to check the correctness of the value set upon the inventory—a method sometimes called the "gross profit test of inventory." The cost of goods sold in the period preceding the date of the balance sheet is estimated by subtracting the customary per cent of gross profit from the sales. This estimated cost of goods sold is, in turn, subtracted from the sum of the purchases during the period and the inventory at the beginning of the period to obtain a figure for final inventory which may be compared with the amount stated as inventory in the balance sheet at the end of the period. If the figures do not approximately agree, a reason is sought, particularly if the result points to a probable overstatement of inventory in the balance sheet. A disagreement will, of course, exist if the assumed per cent of gross profit used in the calculation is incorrect.[4]

Cost of goods sold. The common accounting practice in figuring the cost of goods sold is likely to introduce an element of error at this point. The usual practice is not to keep a current record of the cost of merchandise as sold, but to add the initial inventory to purchases made during the year and infer that this sum less whatever stock is left over at the end of the year is the

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[4] The writer recalls a case where an accountant, asked to prepare an income tax return, applied this test and discovered a gross profit margin so small that he concluded inventory was being understated in order to avoid the high war taxes then applicable. He refused to permit his name to be connected with the return until an adequate explanation was forthcoming. His surmise proved incorrect. What had happened was that inventory at the *beginning* of the year had been *overstated* in order to permit a strong statement for credit purposes at that time. The manner in which the one misstatement would equal the other in effect is explained in the succeeding paragraphs.

Merchants are sometimes led to detect the theft of merchandise or cash receipts by the fact that their profit and loss statement shows a margin of gross profit that is too small.

cost of the amount sold. The usual form for figuring the cost of goods sold for a merchandising concern is as follows: [5]

COST OF GOODS SOLD

Inventory at the Beginning of the Year	$12,000
Purchases During Year	60,000
Total to Account for	$72,000
Inventory Remaining at End of Year	10,000
Cost of Goods Sold During Year	$62,000

For the sake of simplicity, let us assume that in the above illustration all the stock cost $10 per unit. The purchase of 6,000 units added to the 1,200 units on hand at the beginning of the period gave 7,200 units to be accounted for. On taking stock at the end of the year, 1,000 units costing $10,000 are found on hand. Consequently, it is figured, in the absence of a perpetual inventory, that the other 6,200 units were sold. But the inventory is figured in dollars, and should it have to be reduced from the cost figure of $10,000 to a market price of, say, $5,000, the resulting *cost of goods sold during the year* by the above method would appear to be $67,000, which is $5,000 more than it was in fact. What happens is that the market depreciation of an unsold inventory is treated as a part of the cost of goods sold during the preceding period, and the profit for the period is reduced by the excess of cost over market price for the final inventory, which is not a realized loss until sold in the following year.

Although the form shown above for finding the cost of goods is for a merchandising business, the same factor of error would be present for a manufacturing concern whenever final inventory was reduced below cost at the end of the accounting period because market value was less than cost.

A better practice would be to show the inventory at cost in this computation, and then show the loss on depreciated inventory as a separate loss adjustment near the end of the earnings statement. Some corporations follow this procedure. The result of the practice of valuing inventory at the lower of cost or market value is that during a period of falling prices, market valuation prevails, and the profit and loss statement anticipates unrealized losses, making it possible for the business to show im-

[5] Examination of the detailed statement of the cost of merchandise for manufacturing concerns in which materials, direct labor, and overhead are given is so generally confined to the private eye of the management that the form and possibilities of the statement are omitted here.

mediate profits as soon as prices stabilize, even though it is selling high-priced stock bought in the preceding period. When prices are rising, however, cost valuation prevails, and profits (unlike losses) are reported in the period of sale.

As a result of changed income tax regulations (1939) and the fear of inflation, some corporations, especially manufacturing concerns with a perpetual inventory system, will undoubtedly adopt the "last-in-first-out" basis for inventory accounting. Since the cost of goods sold is being charged continuously with the last acquired inventory, costs will be relatively high in periods of rising prices. At such a time, when inflation is taking place, the balance sheet figure for inventory will represent older purchase prices and so a figure lower than market value; reported profits, and so income taxes, will be lower than under the more common practice of using oldest or average purchase prices. A period of deflation would show opposite tendencies. Reported earnings will tend to be more stable under this system of accounting and the balance sheet will need to be supplemented if the reader is to learn the current market value of the inventories.[6]

Gross profit margin and the expense ratio. The excess of the selling price over the cost of the merchandise is the gross profit, and provides for the expenses of operation and the return to capital. The latter element is discussed below in connection with the operating ratio. The adequacy of this margin to cover these two elements may, on the one hand, be impaired because the business is hopeless, owing to uneconomic character (unskillful management, bad location, overexpansion, and so on) or temporary unfavorable conditions; or, on the other hand, it may be more than adequate because of extremely skillful management, unusually favorable external conditions, such as inflation, or a monopoly situation. In the ordinary situation, the expense element in the gross profit margin would be expected to be high

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[6] For a discussion of effects upon United States Steel Corporation, which adopted this system in 1941, see Cotter, Arundel, "What 'Lifo' Does for U. S. Steel," *Barron's*, July 14, 1941, p. 9. Advocacy of the method may be found in Cotter, Arundel, *Fool's Profits* (Boston: *Barron's*, 1940).

A very few corporations have used a "normal" or "base" stock which is kept at a fixed price, usually a very low one. The results are very similar to those under "last-in-first-out" method of inventory. For a discussion of the base-stock principle: Peloubet, M. E., "Principles of Inventory Valuation," *New York Certified Public Accountant*, April, 1935, pp. 56–63; Walker, Ross G., "The Base-Stock Principle in Income Accounting," *Harvard Business Review*, Autumn, 1936, pp. 76–94. The method is illustrated in the statements of International Harvester Company and National Lead Company.

or low as the amount of service rendered by the business was large or small in relation to selling price. Some of the chief factors influencing the relative importance of expenses, that is, the "normal" ratio of expenses to sales, are:

1. *The value of the unit sale.* If the individual sales are small, the relative cost is likely to be high. In this respect, wholesalers are expected to show lower expense ratios than retailers.

2. *The number of functions or services performed.* Some of the functions that differentiate businesses nominally similar are: delivery service, credit, warehousing and storage, and packaging or processing.

3. *Small total volume in relation to necessary minimum expenses of operation.* Such a situation might ordinarily spell failure, but if located in an isolated or protected market where a necessary service is performed, it may well survive.

Consideration of variations in the gross profit margin and in the elements which create it is given below in connection with the operating ratio and the percentage income account.[7]

Operating ratio. While the ratio, or per cent, of cost of goods sold to sales is valuable, a published statement usually shows only the combined total cost of goods sold and operating expenses in one amount. The ratio of this total of operating expenses and cost to gross revenues or sales is called the *operating ratio,* thus:

$$\frac{\text{Operating Expenses} + \text{Cost of Goods Sold}}{\text{Sales}} = \text{Operating Ratio.}$$

$$\frac{\$90{,}000}{\$100{,}000} = 90 \text{ per cent.}$$

This ratio subtracted from 100 per cent shows the margin of net operating earnings, and, when compared from year to year, shows the tendency of this margin to widen or narrow. Merchants and traders generally profit by a rising price level, since their stocks increase in value while waiting on the shelves to be sold. As a rule, they can fix their selling price in proportion to current replacement costs. (Actually, the process of price ad-

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[7] For data on gross profit margins in various fields of retailing, see Walter L. Mitchell, Jr., *Standard Ratios for Retailing* (New York: Dun & Bradstreet, Inc., 1940).

justment lags somewhat.) The public utilities, on the other hand, owing to their inelastic rate structure, find that expenses tend to rise and decline with greater rapidity than do revenues. In a period of slowly declining prices, there would be a tendency for the operating ratio of a trader to rise, while that of the utility would be likely to fall. Should the price level decline be accompanied by a marked reduction in the volume of business, however, the utility might find the savings in lowered costs overbalanced by loss of revenues.

Some believe the operating ratio can be used as a measure of operating efficiency, and argue that such items as are not readily subject to the control of management should be left out of expenses. The two chief eliminations are taxes and depreciation, with insurance and rents sometimes added to the list. The more common usage at present seems to be to include all these expenses in the computation, so that an operating ratio of 90 per cent tells how much of the sales dollar has been consumed before interest and dividends, that is, the return to the investors, are reached. More detailed study of the factors influencing the operating ratio can then be made by examining the various elements—cost of goods and variable and rigid expenses in relation to sales.

In a "normal" situation, the operating ratio should be low enough to leave a fraction of the sales dollar sufficient to give a fair return to the investors. In those business enterprises where the investment of funds is very small in relation to the sales volume, as in the personal services, such as the barber shop, the beauty parlor, the automobile repair shop, and probably the restaurant, a high operating ratio might still permit a high return on the small investment. In merchandising, where more capital is needed, the operating ratio would have to be lower; in manufacturing, it would have to be still lower; and in the public service industries and real estate, where the customer is primarily buying the services of capital, the operating ratio would necessarily be very low in order to provide an adequate return. The point is illustrated by the following figures, which show different amounts of investment needed to produce certain

	A	*B*	*C*	*D*
Sales	$100,000	$100,000	$100,000	$100,000
Investment needed	$500,000	$200,000	$ 50,000	$ 10,000
An 8% return would be	$ 40,000	$ 16,000	$ 4,000	$ 800
As a percentage of sales, this is	40%	16%	4%	0.8%
Operating ratio permitting this return	60%	84%	96%	99.2%

volumes of sales or gross revenues in four hypothetical situations. In each case, assuming a return of 8 per cent on the investment, a resultant operating ratio is given.

The foregoing illustrates how the operating ratio and the net operating income per cent are complementary, their sum being one hundred per cent. The factors governing the amount of working capital in relation to the volume of business (described previously, p. 89) and those governing the requirement for fixed assets, measured by the usual plant turnover ratio, account for the reasonable differences in operating ratios among the various industrial groups. Within each classification, considerable allowance for variations must be made. Thus, a merchant owning his own store will need a lower operating ratio to allow a return upon his real estate investment. It should be lower since he will not pay the rent expense which will raise the operating ratio of his competitor who leases his store premises.

In manufacturing concerns, the greater the extent of mechanization, the larger will be the amount of investment in equipment, and so, the lower the plant turnover—that is, the relation of sales to total investment. As labor costs are reduced, capital return should increase and the operating ratio decrease. In this respect, vertical integration, the linking together of concerns that form successive steps in production, results in the investment growing in relation to the sales. The net profit margin of the combination seems higher because it is related to the final sales of the last link in the chain, where before each unit had its own sales. If a motor company buys up a body works, its sales are not increased, but its profit must be greater if it is to earn a return on the increased assets in its balance sheet. The operating ratio should be lower. A horizontal combination, however, unites similar concerns, say a number of department stores. Both sales and assets increase, and the operating ratio may very well be close to the average for the combining concerns.

Percentage analysis of the Income account. Such a study as the foregoing, of items in their relation to the sales, leads to the consideration of percentage analysis of the Income account. As with the balance sheet, this method has the advantages of: (1) showing changes in the proportions of the statement, which are usually as significant as changes in gross amounts but should be read with the latter; (2) reducing the figures to a size in which they are more easily comprehended; and (3) throwing into relief tendencies not so readily apparent in the original

CONTAINER CORPORATION AND SUBSIDIARIES

COMPARATIVE CONSOLIDATED INCOME ACCOUNT
For Years Ended December 31
(Thousands of Dollars)

	1940		1939	
	$	%	$	%
Net Sales	30,465	100.0	24,115	100.0
Cost of Sales (excl. deprec.)	23,340	76.6	19,173	79.5
Gross Profit (excl. dep.)	7,125	23.4	4,942	20.5
Provision for Depreciation	1,241	4.1	1,180	4.9
Gross Profit from Operations	5,884	19.3	3,762	15.6
Selling, Administrative, and General Expenses	2,361	7.8	1,691	7.0
Provision for Bad Debts	5	...	19	.1
Loss on Capital Assets Retired	43	.1	108	.4
Total Deductions	2,409	7.9	1,818	7.5
Net Profit from Operations	3,475	11.4	1,944	8.1
Income from Purchase Discounts, etc.	161	.5	163	.6
Total	3,636	11.9	2,107	8.7
Interest Charges	221	.7	366	1.5
Net Profit before Fed. Inc. Tax	3,415	11.2	1,742	7.2
Provision for:				
Federal Income Taxes	773	2.5	293	1.2
Federal Excess Profits Taxes	414	1.4	....	...
Net Profit Carried to Earned Surplus	2,228	7.3	1,449	6.0
Summary of Earned Surplus				
Balance at Beginning of Year	2,804		1,479	
Net Profit for Year	2,228		1,449	
Other Earned Surplus Credits	....		500	
Total	5,032		3,428	
Cash Dividends	1,172		195	
Charges in Connection with Refinancing	207		428	
Balance at End of Year	3,653		2,804	
Earned per Share	$2.85		$1.85	

figures.[8] The Income account of the Container Corporation, for which balance sheet figures were given in the preceding chapter, is used for illustration here.

In strict logic, the percentage analysis should end with the operating section, for the remaining items—notably nonoperating income—bear no relation to sales. It is customary, however, to continue the percentages, as here, to the net amount transferred to surplus, since these percentages facilitate comparisons with items other than sales.

[8] For a graphic form of comparing two percentage income statements, see C. E. Knoeppel's *Profit Engineering* (New York: McGraw-Hill Book Co., Inc., 1933), p. 183.

The sales increase of 26 per cent, while a combination of volume and price increase, was chiefly the former. The indices of wholesale paper prices would be studied to analyze sales changes, except that this company stated both tonnage produced and tonnage shipped in its annual reports.[9] The operating ratio improved as a result of increased gross profit margin. The operating expense ratio increased, contrary to the usual experience when volume expands. The increase in net operating profit from 8.1 to 11.4 per cent of sales would have meant increased earnings of 41 per cent had there been no change in sales. The narrower the profit margin the more sensitive the net profit figure to small changes in either sales or expenses. The huge increase in Federal income and excess profits taxes is characteristic of war finance. The only favorable aspect of such a tax burden is that in the event of a later recession the first loss of earnings falls upon the portion under the excess profits bracket and so the loss is chiefly borne by the Federal treasury rather than the corporation treasury. In this case, these taxes mounted $1,187,000 over the 1939 total, equivalent to $1.62 per share of stock. Earnings per share were $2.85 in 1940 as compared with $1.85 in 1939.

Retail store percentage data. While percentage analysis of condensed Income accounts is valuable, increasing interest is found in more detailed figures, especially in retail lines where large numbers of fairly comparable concerns are to be found. An early study of this type was a survey in the clothing industry made by the Bureau of Business Research at Northwestern University. This study covered costs, merchandising practices, advertising, and sales in the retail distribution of clothing, and compared such items as rents, wages, and salaries with net sales.[10] More extensive studies of operating expenses of both wholesale and retail trade are those of the Bureau of Business Research at the Harvard University Graduate School of Business Administration. These bulletins have covered a number of lines of busi-

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[9] In order to measure the approximate effect of changes in material or wage costs upon selling prices, or upon profits if selling prices are not adjusted, data upon the relative importance of the two factors are sometimes useful. The *Biennial Census of Manufacturers* of the United States Department of Commerce reports for a wide range of industrial groups, (1) the value of products, (2) the cost of materials and supplies, and (3) the wages.

[10] The material appeared in a number of bulletins published by the Bureau between 1921 and 1925. Leading results appeared in the Bureau's *Selling Expenses and Their Control* (New York: Prentice-Hall, Inc., 1922).

ness, including department stores, grocery stores, wholesale groceries, shoe stores, jewelry, hardware, and variety chains. Such studies should be used with care. They may represent common practice and yet be far from ideal practice. Or, they may represent concerns that represent a composite of varying conditions in such matters as size, credit policy, and location.[11]

Some of the chief items for leading retail lines have been compiled from *Standard Ratios for Retailing,* published by the Re-

TYPICAL OPERATING AND MERCHANDISING RATIOS: 1939

	Grocery Stores	*Dry Goods*	*Limited Price Variety*	*Shoes* †	*Drug Stores*	*Hardware*	*Jewelry*
PROFIT & LOSS STATEMENT: (in percentages of Net Sales)							
Net Sales	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Cost of Goods Sold	81.6	71.9	68.5	66.4	69.5	70.9	51.1
Total Expenses	16.9	25.1	26.5	30.7	28.1	26.7	43.6
Salaries, Owners & Officers	7.0	8.2	9.4	10.4	9.6	8.9	17.0
Wages, Other Employees	4.2	6.7	7.2	7.2	7.8	7.6	10.4
Occupancy Expense	2.6	3.9	5.1	5.5	4.8	4.0	6.4
Advertising	0.6	1.1	0.8	2.1	0.9	0.9	2.1
Bad Debt Losses	0.4	0.5	0.2	0.4	0.3	0.6	1.0
All Other Expense	2.1	4.7	3.8	5.1	4.7	4.7	6.7
Profit	1.5	3.0	5.0	2.9	2.4	2.4	5.3
MERCHANDISE RATIOS:							
Gross Margin (% of Sales)	18.4	28.1	31.5	33.6	30.5	29.1	48.9
Inventory Turnover (times per year)	10.0	2.0	2.8	1.8	3.1	2.0	1.1

† 20% to 50% sales on credit.
Source: Mitchell, Walter L., Jr., *Standard Ratios for Retailing.*

search and Statistical Division of Dun & Bradstreet, Inc., and are presented in the table on this page.[12] They show characteristic differences that merit careful study.

The table clearly shows proportions that might be expected on the basis of general principles. The rapid turnover of standard-

[11] For a discussion illustrating the effect of these variables, see Engle, N. H., "The Marketing Structure in the Grocery Industry," *Harvard Business Review,* April, 1934, p. 328.

[12] Mitchell, Walter L., Jr., *Standard Ratios for Retailing* (New York: Dun & Bradstreet, Inc., 1940). For valuable discussion see pages vii–xx. This book represents the fifth Dun & Bradstreet Survey of Retailers' Operating Costs and summarizes the experience of some 13,000 United States retailers for the year 1939.

ized goods in such a line as groceries makes it possible to operate on a narrower margin of gross and net profit than for the opposite type of business, such as that of the retail jeweler. It is interesting to note the economic similarity of the dry goods and hardware businesses. The figures for the shoe trade are not greatly different. The most striking variation is found in the figures of the variety stores which show typical inventory turnover somewhat higher than for the three lines just mentioned and yet enjoy a typical gross margin second only to the shoe business. Furthermore, the net profit is unusually favorable. One might suspect the influence of chain store efficiency were it not stated that the units were independent, generally situated in small communities, and a majority had an annual sales volume of less than $20,000. This profit situation is especially favorable when it is remembered that the business is largely cash, so that there is little investment in receivables, and that it is mostly conducted in rented quarters (89% of concerns) so that there is little fixed asset investment. The drug stores with a rather similar turnover (3.1 vs. 2.8) and gross margin (30.5 vs. 31.5) showed only half as large a net profit margin (2.4 vs. 5.0).

The original material in the foregoing study is classified to show differences between profitable and unprofitable, cash and credit, large and small sales volume, and location in large and small cities or in different parts of the country, where the number of units warrants such treatment. Such background information is invaluable in bank and mercantile credit analysis and should be helpful to those engaged in the field of retail store management.

Examples of how differences are reflected in the profit and loss statement are given in the table opposite, which compares the profitable and unprofitable concern, the cash and credit-granting concerns, and stores located in towns with a population of less than 20,000 that have annual sales under $10,000 and between $20,000 and $30,000.

In the comparison of profitable and unprofitable concerns, it is interesting to note that about one-half of the difference in the net profit showing can be attributed to a lower gross profit margin by the unprofitable units and about one-half to higher expense ratios. The narrower gross profit margin might be caused by cut prices, as on loss leaders, or an unduly heavy proportion of sales in low profit staples. If the low gross profit were found in a department store, poor buying and an undue

proportion of goods moved by mark-down sales would be possible. The unfavorable expense ratio might result from such factors as trying to do business on too small volume, heavy drawings by owners, or lack of expense control in such matters as overpayment for rent or wages in view of size.

COMPARATIVE RATIOS OF GROCERY STORES UNDER DIFFERENT CONDITIONS: 1939

PROFIT & LOSS STATEMENT: (in percentages of Net Sales)	*Profitable*	*Unprofitable*	*Cash* [a]	*Credit* [b]	*Sales* [c] *under $10,000*	*Sales* [c] *$20,000–$30,000*
Net Sales	100.0	100.0	100.0	100.0	100.0	100.0
Cost of Goods Sold	81.1	84.5	82.9	81.1	83.7	80.9
Total Expenses	15.5	18.8	15.7	17.1	15.8	17.2
Salaries, Owners & Officers	6.1	7.9	6.8	6.6	9.1	7.5
Wages, Other Employees	4.1	4.3	3.7	4.8	1.8	4.5
Occupancy Expense	2.4	3.1	2.9	2.4	3.5	2.1
Advertising	0.5	0.6	0.5	0.5	0.1	0.7
Bad Debt Losses	0.4	0.4	0.1	0.7	1.1	0.7
All Other Expenses	2.0	2.5	1.7	2.1	0.2	1.7
Profit	3.4	*3.3*(loss)	1.4	1.8	0.5	1.9
MERCHANDISE RATIOS:						
Gross Margin	18.9	15.5	17.1	18.9	16.3	19.1
Inventory Turnover (times per year)	10.2	9.7	9.8	10.1	8.1	9.0

a Over 90% of sales for cash.
b Over 50% of sales on open credit.
c In towns under 20,000 population.

When comparing cash and credit concerns, one expects higher gross and net margins for the latter. The former is necessary to allow for credit-granting expenses and bad debt losses; the latter, to pay a return on the extra funds tied up in accounts receivable. The figures on this point for grocery stores run true to form. It might have been otherwise because other counterbalancing factors might be present. In these data, for example, the typical (median) cash store had $18,600 sales per year; the credit store, $24,900. Credit to customers might permit greater volume in particular cases. In the matter of renting a place of business, a slightly higher proportion of the cash stores rented. The proportions of profitable and unprofitable units were similar for each group.

As between the stores with large and small sales volume, the smaller concerns actually have less gross profit margin. Had the small stores been in smaller cities, their margin might have been larger to compensate for the adverse volume factor. In

larger cities, the small store often has to meet the competitive prices of its bigger rivals and may suffer from inability to buy at the low prices that a large concern with good credit standing can command. Since the proprietor of a small store performs more of the work, his wages to other employees will tend to be a small per cent.

Misstatement of operating expenses. The operating section is the heart of the Income account, and its accuracy is a matter of prime importance. What are the defects which are likely to make it misleading? In the discussion of accruals (Chapter III), it was shown how the omission of accrued expenses would result in the overstatement of profits. Their omission, which would show defective accounting, is most likely to occur in the small business with poor bookkeeping, and would be apparent from a casual inspection of the balance sheet.

More significant errors are likely to be those relating to the decline in value of the larger operating assets. Failure to allow for a small percentage of loss in value of these assets may make a relatively large difference in the earnings. Thus, a loss equal to one per cent of the assets would be equal to one-sixth of the profits for a business reporting six per cent earned on total assets. The analysis of the receivables and the inventories has already been discussed in connection with working capital. The relation to earnings of any failure to allow sufficiently for bad debt losses or to write off merchandise or materials of doubtful value should be noted here.

The plant and equipment must also be kept in a proper state of repair, and adequate allowance for depreciation must be made, if the Income account is to reflect accurately the true gain or loss of the business. The maintenance or repair expense is usually buried in a total for operating expenses, save for the public service companies, the forms of whose reports are regulated, and a minority of other companies who are more than usually conscious of their responsibility for informative statements. Thus, Purity Bakeries Corporation reports in its Income account for the year ended December 28, 1940:

Net Sales		$37,334,908
Materials, Supplies, Production, Labor, and Expenses	$21,069,057	
Selling, General and Administrative Expenses	12,480,410	
Maintenance and Repairs	719,078	
Depreciation of Plant and Equipment	1,154,614	
Total		35,423,159
Net Operating Profit		$ 1,911,749

Many companies in poor years neglect the care of the fixed property, and in good years may, or may not, treat the property in the opposite manner. Cash outlays for current maintenance are generally spoken of as *repairs, renewals,* or *replacements.* These are to be distinguished from the expenditures for *additions* and *betterments,* which constitute increases in the investment in fixed assets.

In addition to current expenditures for maintenance, there are the allowances for depreciation, sometimes spoken of as deferred maintenance, that must be regarded as a part of the expenses of operation.[13] These depreciation allowances are now generally regarded as essential. Sometimes such amounts have been deducted *after net profits,* indicating a state of mind which regards the amount as more or less arbitrary.

The subject of proper annual rates of depreciation is one of wide interest and is still a matter of much controversy, particularly in the public utility field. There is, however, a constant tendency to bring about a greater uniformity of ideas and practice. Evidence as to the force of the movement for greater standardization and the limitations of standardization are to be found in the reports of the Bureau of Internal Revenue. The following are illustrative items from a considerable list.[14] In presenting these normal rates, the Bureau warns:

> A reasonable rate for depreciation is dependent not only on the prospective useful life of the property when acquired, but also on the particular conditions under which the property is used as reflected in the taxpayer's operating policy and the accounting policy followed with respect to repairs, maintenance, replacements, charges to the capital account and to the depreciation reserve.

What one concern might charge to repairs, another might regard as a replacement of a part likely to prolong the life of the asset and so to be charged to the reserve account accumulated by prior depreciation allowances. Where it is possible, mainte-

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[13] In the accounts prescribed for steam railroads by the Interstate Commerce Commission, depreciation is a subdivision under maintenance, and the reported Income account shows only the total, called "maintenance." See Chapter XI, "Railroad Statements."

[14] From *Depreciation Studies,* a preliminary report of the Bureau of Internal Revenue, January, 1931 and *Bulletin F* (revised, January, 1942), on "Income Tax Depreciation and Obsolescence." The latter bulletin contains rates for a wide variety of equipment used in many different lines of business. Material of this type and extensive tables of depreciation rates compiled from various decisions and from books and articles written by acknowledged authorities are to be found in the *Prentice-Hall Federal Tax Service.*

nance and depreciation should be considered in combination instead of considering depreciation alone. The difficulties in judging depreciation standards explain the caution given that such rates as those set forth below are to be used "solely as a guide or starting point from which correct rates may be determined in the light of the experience of the property under consideration." The rates are said to include an allowance for "normal obsolescence."

Buildings	*Probable Useful Life (Years)*	*Depreciation Rate (%)*
Apartments	50	2
Factories	50	2
Hotels	50	2
Office Buildings	67	1½
Stores	67	1½
Warehouses	75	1⅓
Building Equipment		
Boilers and Furnaces	20	5
Passenger Elevators	20	5
Plumbing Fixtures	25	4
Office and Other Equipment		
Adding and Similar Machines	10	10
Office Cabinets and Desks	15	6⅔
Typewriters	5	20
Automobiles	5	20

The rates for buildings are exclusive of building equipment. Composite rates which include the latter are also reported.

Depreciation in practice. Some companies report the depreciation rates they employ for important classes of their property. The analyst is compelled, for the most part, to compare the total depreciation allowance in the Income account with the gross amount of property shown in the balance sheet, and to note variations between similar companies. The following average composite rates are for a small and possibly inadequate sample of leading corporations.[15] Large differences among rates are not uncommon in such groups.[16] Companies for which depletion is important are not included because the life of a mineral deposit is the result of the character of the individual mine.[17]

Differences between companies may be due to differences (*a*) in depreciation rates, (*b*) in policy as to maintenance, some making more generous repairs and allowing less for depreciation, or

[15] Medians, rather than arithmetic means, were used, to avoid undue influence from extreme cases.

[16] See page 147 above for some factors affecting this gross depreciation rate.

[17] Treated below in Chapter XV, "Mining Statements."

(*c*) in composition of assets. One concern may own considerable real estate. Land being nondepreciable and buildings but slowly depreciating, the composite rate for such a concern would be low as compared with that of one renting its premises and so with its fixed assets mostly shortlived store fixtures. Occasionally, concerns find that some of their fixed assets have accumulated a one-hundred-per-cent reserve and so require no further allowance. Succeeding years will show a reduction of depreciation expense until such assets are replaced by new units.[18] In such a situation, depreciation has been overstated in the early

COMPOSITE DEPRECIATION RATES IN VARIOUS FIELDS
(Per Cent of Depreciation Allowance to Total Plant and Equipment, Including Land—Medians)

	1933	1934	1935	1936	1937	1938	1939
Auto manufacturers	4.4	6.0	6.0	5.7	5.2	5.5	5.2
Auto parts and accessories	5.0	5.0	4.6	4.8	5.1	5.2	5.2
Baking	3.9	4.0	3.9	4.4	4.5	4.6	4.3
Chemicals	..	4.1	4.4	4.4	4.6	4.6	4.8
Rubber goods	5.7	4.8	4.5	4.3	4.4	4.6	4.9
Shoe manufacturers	3.9	3.9	3.9	3.8	3.9	3.6	3.7
Electric (oper. cos.)	1.2	1.3	1.4	1.5	1.7	1.8	1.9

part and understated in the later part of the asset's life history. The extreme position is registered by a company which writes off its fixed assets completely, thereby producing an overstatement of income in all subsequent statements through the elimination of the depreciation expense.[19] After such a write-off, the corporation will show higher profits than it otherwise would because expenses will include only repairs and renewals, and nothing for depreciation and retirements.

The chief reason why depreciation should be stated as accurately as possible is not so much to avoid resulting inexactness in the balance sheet as resulting misrepresentation of profits, where its effect looms much larger. A second argument is that overstatement of depreciation may by understating actual investment expose the company to taxes on excess profits at some future time. Even though no such tax is levied, the company

[18] The 1933 annual report of the Continental Baking Corporation stated: "The reduction in Depreciation as compared with previous year is due to Assets which have become fully depreciated and not to any change in depreciation policy."

[19] Commercial Solvents wrote its plant down to one dollar in 1930. The high reserve of General Electric suggests an overstatement. Its gross plant of $212,651,425 on Dec. 31, 1940, showed a depreciation reserve of $171,150,018, equal to 80 per cent.

lays itself open to charges of profiteering, because its profits will be overstated and its actual property investment understated. Those who favor ultraconservatism argue that their policy (*a*) protects against unforeseen obsolescence, (*b*) counterbalances the tendency of repairs to increase as the asset ages, and (*c*) burdens more heavily the earlier years, which are the most certain to benefit from asset purchases.

The case for a balanced middle course and the achievement of the greatest accuracy possible has been stated by the General Motors Corporation:

> There is certainly no economic justification in reducing the value of current usable assets below their sound reproductive value—such as placing a nominal value on some, eliminating in that way, in whole or in part, depreciation not only actually but essentially a part of the cost of production, hence uneconomically inflating future stated profits. The cost of sales should reflect at all times a depreciation charge based upon the useful life of such real estate, plant and equipment and other items essential to production. The selling price should reflect in principle, among other factors, a reasonable return on capital invested in all essential productive capacity.[20]

In conclusion, the subject of depreciation and maintenance practice should be given its proper perspective by noting when it is important and when unimportant. The influencing factors are:

1. *The relative importance of the depreciable assets to the total investment.* When the fixed assets are a large fraction of the total assets, as they are in the public service corporations, depreciation will be more important than when they are small, as is usually true of mercantile and financial concerns.

2. *The relative importance of the depreciation expense as compared with the gross revenues.* This factor will flow partly from the preceding point, but will also be affected by whether plant turnover is high or low and whether depreciation and maintenance is a high or low per cent of the asset.

3. *Rate of return earned on investment.* If earnings are equal to 18 per cent on the total investment, it is clear that an error in depreciation equal to one per cent of investment would be

[20] Annual report for the year ended December 31, 1932. That this company's own policy had been ample is indicated by the further statement: "It can be stated that the reserves set up for depreciation are sufficient to write down to salvage value all real estate, plant and equipment which has become completely idle and further, to readjust the values of all plant which remains in operation to its 1932 reproductive value less depreciation." Prices in 1932 were materially lower than in the years in which the bulk of General Motors assets had been acquired.

only one-third as important as it would if earnings were but six per cent on investment.

4. *Relation of total debt to net worth.* When a heavy debt exists, with a consequently larger share of earnings expended for interest, the margin for the owners is thinned out. As a result, any change in earnings, such as a correction in the depreciation or maintenance charges, would produce a more extreme percentage change in the net profit than if interest were absent and the total net income were all net profit.

The question, in the last analysis, is one of how important a variation in depreciation policy will be in relation to the profit of the common stockholder.[21] Attention to this relation will be of especial interest in analysis by the investor.

Differences in treatment of the maintenance and depreciation will be suggestive to the extent that their deviation from common practice results in altering by a significant amount the apparent rate of return on the investment. Just as some may have overlooked or understated the element of depreciation, so others have made excessive allowances while keeping their investment in first-class repair.

This material on depreciation is at once a central point of analysis and also our concluding point in the discussion of the operating section of the income statement. From it we turn to the nonoperating section.

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[21] Sloan, Laurence, *Corporation Profits* (New York: Harper and Brothers, 1929), p. 55. Sloan found the relation of depreciation and depletion to net profit for a group of 61 extractive companies to be 32.2% in 1926, 42.8% in 1927; for 158 nonextractive industrial companies, 18.7% in 1926, 23.2% in 1927. Out of 545 companies studied by this writer, only 219, or two out of five, revealed the sums charged to depreciation and depletion. Practice on this point has improved in recent years.

CHAPTER IX

Analysis of the Income Statement (Continued)

"Nonoperating" or "other" income. The nonoperating portion of the Income account occupies a position second to the operating section, but occasionally it is of major importance. An examination of the balance sheet for assets used in operations and those not so employed (for example, investments) would show what the relative importance of the operating and the nonoperating sections of the profit and loss statement might be expected to be. Unless both the nonoperating assets and the nonoperating income are insignificant, the latter should receive the same scrutiny as the operating income.

In relating the investments shown in the balance sheet to this part of the earnings statement, we find that the investments generally fall under three chief heads:

1. Credit obligations with a fixed income return.
2. Ownership obligations of an investment nature, with a more or less variable income return.
3. Other securities or property, the direct income from which is subordinate to their value as a means of controlling other enterprises.

In the first class would fall United States, municipal, and other bonds which are held as either temporary or permanent investments. Such holdings will afford a source of income of a constant, though usually not a very substantial, nature. Industrial corporations do not, as a rule, find it advantageous to use their funds in this direction, because of the comparatively low return on such investments. Consequently, the presence of an investment in another corporation's bonds is likely to indicate some interest in that corporation's well-being. A company might take this means of financing an affiliated enterprise because it could borrow the capital on its own credit more advantageously than could the minor corporation.

Where the investment falls in the second class, the income

may still represent a fairly constant and possibly important source of revenue. This has been, and still is, the case with many of the larger railroad corporations which own many parts of their system not by direct title to the physical properties but by stock ownership. Where the corporation under study is able to control the corporation in whose stock it has invested, the dividend policy may be varied to meet the needs of the parent company. There have been cases where the earnings have been retained in the subsidiary company until the owning company suffered a period of low earnings, when dividend declarations were made so that the increased income from investments would somewhat offset the smaller operating profits. While this use of income from outside investments to stabilize the total income of the corporation may be useful in particular instances, the practice is likely to be a source of danger in that it opens the door to manipulation. Figures ought to be available to enable the analyst to determine independently the real profitableness of the investment from which the income is derived. Details, however, are not so necessary when the investment is in the form of bonds as when in stocks or directly owned properties.

Sometimes substantial income may be derived from sources that are represented by small, or no, value in the asset column. Royalties, such as Cluett, Peabody & Company, Inc., has derived from its Sanforizing patents, would be an example. The problem in such cases is to estimate the probable amount of income and the period over which it will be realized.

The sum of the "other income" and the net operating income, sometimes labeled "Gross Income" or "Total Income," is the amount available for the usual nonoperating deductions. The nature of these nonoperating expenses was discussed in Chapter III, on profit and loss statement construction. For the average reader, two items in this class are of major importance at the present time—taxes on income and fixed charges. Taxes other than income taxes are usually treated as operating expenses, except in the case of railroads and public utilities, where the arrangement is especially prescribed by law.

Taxes. Taxes have become of particular importance because of the need of the Federal government for more revenue. The matter of how they cut into corporate profits is common knowledge. From the standpoint of financing, it is fortunate that such heavy taxes are proportionate to profits. They are consequently less dangerous to bondholders than would be a less

flexible tax based on capitalization or property, or a sales tax which could not advantageously be shifted to consumers. An income tax, since it is figured on the net profits, that is, the income available after the deduction of bond interest and any other fixed charges, should not endanger the financial structure as other expenses may. It should be noted, however, that income taxes are payable in the year following that in which the income is received, and, unless adequate cash or the equivalent is kept available for the payment of the tax, the company may have difficulty in meeting its tax bill, particularly in a year of depression following a year of great prosperity.

Interest charges. Because income taxes are levied on the balance after interest expense, the margin of safety for the bond interest should be figured on the basis of net income before such taxes are deducted. In practice, the deduction is sometimes reported in combination with other taxes or with other expenses; so that for the sake of uniform statistical comparisons, all margins of safety may be computed on the basis of income after all taxes have been deducted. In financial circles, interest charges and fixed charges are practically synonymous. The chief exception is the railroad, with its other fixed charges, chiefly rentals for the use of other roads and joint facilities and the hire of equipment. These rents are for the use of capital, and are consequently classed with interest, as fixed charges. Where important, the rents of other kinds of business should be studied as a fixed charge, especially where set under a lease running for a number of years.

In studying the margin of income available for the interest charges, it is usual to state how many times these charges have been earned. The following figures may be used to illustrate the method:

Net Income (after deduction of all operating expenses, taxes, depreciation, etc.)	$500,000
Bond Interest	200,000
Balance	$300,000

Here the bond interest has been earned 2½ times over. In other words, the income available is 250 per cent of the interest requirements. Circulars of investment houses might read that "earnings exceeded the interest requirement by 150 per cent." It is necessary that this margin be studied over a series of years to see how it stands in poor as well as in good years. A stable margin of safety is more to be desired than a wide margin.

Even though depreciation is a bookkeeping allowance instead of a cash expenditure, it will be balanced over the years by disbursements as replacements occur. Its position before rather than after the interest item is established as the proper practice, although some feel that because of differences in policy intercompany comparisons of interest coverage would be fairer if the depreciation were omitted from expenses. Sometimes when a company is suffering temporary trouble, the net income before depreciation is significant because of the possibility of deferring replacements and so making all of the net before depreciation available for the purpose of paying interest and for use as a sinking fund.[1] A long-run study of a security will employ the figure for net income after depreciation, but a supplementary figure using net income before depreciation may serve a useful purpose at times.

Where more than one issue of bonds is to be considered, all the charges of preceding issues must be considered; or else the "times earned" figure may be misleading. The following will illustrate this point:

Net Income Available for Fixed Charges	$400,000
Interest on First Mortgage Bonds	100,000
Balance	$300,000
Interest on Second Mortgage Bonds	50,000
Balance	$250,000

The interest on the first mortgage bonds has been earned four times, and, so far as the arithmetic goes, the second mortgage interest has been earned six times ($300,000 ÷ $50,000). The figures so stated make the showing for the weaker bonds better than for the prior lien. The error here lies in overlooking the fact that the $50,000 is a secondary charge which has its fortune linked with that of the first charge. The correct method of stating the coverage for the second mortgage bond interest is: "when combined with prior charges, it is earned 2⅔ times ($400,000 ÷ $150,000)." By this "over-all" method of stating the coverage of successive claims upon earnings, a series of figures

[1] Bond discount written off during the year, usually minor and reported as a part of interest expense, is also noncash. Occasionally the item is important as in the case of weak utilities whose working capital is negligible and earnings are the essential basis for meeting obligations. Sinking fund payments are not a profit and loss item and must be determined from the bond contract and the balance sheet.

will be had which will measure the relative financial strength of the several issues.[2]

Certain minimum standards for "times earned," in order for a bond issue to enjoy "investment" standing, have prevailed from time to time. In recent years, this minimum requirement has been two times for railroads and public utilities and three times for industrial companies. The classification of companies termed "industrials" is so broad as to make generalizations concerning that class of little value, save possibly in the setting of minimum standards such as these. Even with this qualification, it is necessary to add that there are a few "industrials" which are practically comparable to public utilities as to the safety of their securities.

The "average times earned" record of a security is always to be valued according to the degree in which it is likely to be representative of *future* conditions. An estimate in this regard will be determined by previous stability and the trend of the company's condition.

Profit and loss and surplus items. The treatment of the remaining items in the statement of profit and loss is not uniform, but a study of their nature will enable the analyst to classify and treat them according to his needs. One possible treatment is to group the leftover items as either (1) profit and loss adjustments, or (2) changes in surplus. The first group includes extraordinary losses or gains which arise out of unusual happenings during the accounting period. The surplus changes consist of two classes of items. The first class is made up of items like dividends, which are neither loss nor gain, although they do affect the amount of the owner's interest. The second class consists of loss and gain items which are the result of events in preceding accounting periods.

The following list of illustrations will aid in an understanding of the distinctions just set forth.

1. *Profit and loss debit adjustments*: Fire losses not covered by insurance; strike losses; loss on deposits in closed banks; loss on the sale of fixed assets; and loss resulting from the mark-down of inventory from cost to market at the end of the accounting

[2] Because some corporations have been able to finance at extremely low interest rates, so that coverage figures are almost meaningless, it may be useful to supplement the usual computations by the percentage of earnings to bonded debt. Such a figure facilitates intercompany comparisons and make allowances possible for the effects of refunding.

period. The separation of the inventory write-down is a decided aid to the reader of the statement, but it should be related to the operating section of the statement because of its necessary connection with trading operations. (Inventory loss is often merged with the operating section, as was previously noted above, page 176.)

2. *Profit and loss credit adjustments*: Profit from the sale of fixed assets; profit resulting from individual donations; and profit on the redemption of bonds at a discount.[3] The redemption of stock at more or less than its par or stated value is not regarded as resulting in either loss or gain. Actually, the redemption of preferred stock at a premium or discount results in as much of a loss or gain to the common stockholders as it would if the investment were a bond. This reality should guide the analyst.

Any difference between the par or stated value of common stock and the price paid for it will be handled as a "surplus change" when the stock is canceled. Whether or not such common stock redemption is desirable cannot be determined from the presence of a surplus credit or charge, but must be decided by examining the resulting improvement, or loss, of asset values and earning power of the shares which remain outstanding.

3. *Surplus charges (or debits)*. Dividends declared represent a withdrawal of some of the owners' interest rather than loss or gain. Bonuses to officers or employees which are wholly contingent upon profits might be treated like dividends—as a sharing of the surplus increment. Analysis will usually be facilitated, however, by treating them as a kind of sliding-scale compensation forming a part of the operating expenses. Appropriations for surplus reserves, such as reserve for working capital, reserve for preferred stock retirement, or reserve for unforeseen contingencies, leave the net worth unchanged but place

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[3] Illustrations of the first two credits are to be had from the experience of Sears, Roebuck & Company in 1921. The year's operations showed a serious loss, and the company was about to show a deficit in its balance sheet. President Julius Rosenwald provided the needed working capital and prevented the impairment of capital by the purchase of certain of the company's Chicago real estate holdings at a book profit of $8,275,360 and the donation of 50,000 shares of common stock with a par value of $5,000,000. The possible importance of profit from the sale of assets to earnings in more ordinary situations may be studied in the reports of American Sugar Refining Company in 1924 and 1927, and of National Lead Company in 1926 and 1929. Thus, in 1927 the former company would have showed $1.49 including that profit, and $.97 without it; in 1924 the corresponding figures were $15.93 and a deficit of $2.31, respectively.

surplus under new balance sheet titles. Similarly, the write-off of goodwill is a purely nominal change even though the apparent net worth is reduced. Unlike these are the surplus charges which are due to losses or expenses which are recognized during the current period but are attributable to the operations of prior years. Examples are found in income tax payments for preceding years not adequately cared for by the reserves or accruals set up in those years. Similarly, bad debts losses or depreciation may have been insufficiently provided for in past periods.

4. *Surplus additions (or credits).* Surplus added by the equal payments of all stockholders alike is not regarded as general surplus, and so would not appear here under proper accounting procedure except when it had been donated or paid in for the specific purpose of wiping out a deficit. As suggested earlier, in a well-constructed balance sheet such payments are specifically labeled or termed "Capital Surplus," so that they will not be confused with Earned Surplus. Transfers of surplus reserves back to general surplus whenever their function has disappeared would be shown in this section of the Income account without affecting the actual total of net worth. Such items explain why some accountants feel that the surplus changes should be physically separated from the rest of the Income account, so that the latter may recount only gain and loss for the current period.

Of a different character from the foregoing are profits which arose in preceding years, but which, through error or otherwise, were not accounted for till the current year, and so are credited to surplus. These represent earnings which should have appeared in other periods. Of the same character are overstatements of expense, particularly of the accrued type, in prior periods which are corrected by surplus credits in the current period. The most common examples of this class are prior overstatements of valuation and liability reserves which were created by charges for depreciation, taxes, and the like in earlier periods.

The bondholder, when weighing the strength of his position, will give general consideration to the profit and loss adjustments and those surplus charges which are in effect amendments to prior reports. In actually calculating the "times interest earned" measure, however, such items are frequently ignored, on the grounds that they are either nonrecurring or insignificant. The general principle is that past performance is studied for the light it will throw on the future. Its application is most dif-

ficult when the gain or loss is unusual or of very irregular occurrence, such as a write-down of inventory, receivables, or investments. Such items may be regarded as nonrecurring for the short run; but, so closely are they related to the very nature of the business, they must be considered in order to give a true long-run picture of the income. The force of the latter position explains why some financial publishers, in rearranging income reports, class items of this character with the "Other Income" and "Deductions from Income" (that is, as ordinary nonoperating items) before obtaining the "Net Income Available for Interest on Bonds." The individual reader can formulate his own classification best by keeping in mind the way in which the results are to be employed. When the results are to be used by others, and a reasonable difference of opinion might arise as to the treatment of one or a few major items, alternative methods may be presented; thus, "times interest earned" might be shown both before and after the "loss from setting up a reserve sufficient to reduce marketable securities from cost to current market value."

The surplus changes will be of significance to the bondholder only when they show that the earnings for preceding years have been considerably overstated or understated and need revision.

The stockholder's attention is ordinarily directed to the net figure shown after interest charges and profit and loss adjustments, although many of the latter will doubtless be omitted as having little bearing upon ordinary earning power. The terms *net earnings* and *net profits* are used to designate the net amount of gain or loss for the accounting period which accrues to the owners of the business. But since the stockholder is utilizing the earnings statement for estimating future conditions, he will be guided by the suggestions which have been made for the bondholder.

Dividends. The final section of the Income account states the dividend distributions, if there are any. The preferred dividends are unlike the interest charges in that their payment is contingent upon their being earned, and they are spoken of as "contingent charges" in contrast with the "fixed charges" on bonds. They may be deferred without any admission of insolvency. In this respect, they are like the dividends on common stock, which similarity leads to the practice of stating the net income at this point as so many dollars earned per share of preferred. Thus, net earnings of $223,530 with 10,000 shares

of preferred stock outstanding would be stated as $22.35 earned per share of preferred. Except in the rare cases where there is participating preferred stock, the holder of this stock has no expectations beyond his stated rate of dividend. Any excess is merely a protective margin. This condition suggests the advisability of stating the margin of safety for preferred shares in the same manner as for bonds, that is, the number of times the charge has been earned. In calculating the "times earned," the preferred dividends would be treated like the interest on a junior issue of bonds.

If, in the last illustration used, it is supposed that the corporation had $3,500,000 of capital stock, of which $1,500,000 was 6 per cent preferred and the remainder common, the statement would read:

	Amount	*Times Earned*
Net Income	$400,000	
Interest (first mortgage bonds)	100,000	4.00
Balance	$300,000	
Interest (second mortgage bonds)	50,000	2.67
Net Profit	$250,000	
Preferred Dividend (6 per cent)	90,000	1.67
Available for Common	$160,000	
Common Dividends (3 per cent)	60,000	*
Carried to Surplus	$100,000	

* Earned on Common Stock, 8 per cent.

Just as the per cent earned on total investment (bonds plus tangible net worth) is studied as a measure of general earning power, so the per cent earned on the tangible investment of the common stockholders reflects the "productivity" of their capital contribution. The latter per cent will depend on the former per cent and the cost of the funds derived from bondholders and preferred stockholders. When the rate paid these more protected investors is lower than that earned on all of the funds used, the common stock equity will be able to show a correspondingly higher return than the total capital earns, and vice versa. In every case, the reasons for changes in earnings rates should be sought, as the reasons are likely to be as important as the changes.

The position of the common dividend is not judged by the "times earned" device, chiefly because it is a variable itself. The coverage of all the prior charges is a measure of the position not only of the weakest junior issue but also of the common

stock, the general strength of the latter rising as the measure rises. Sometimes the percentage of net profits available for the common stock which is distributed and the percentage which is retained are studied. The proportion should not be a matter of rule, but should be governed by the need of the business for funds and the relative advantage of retained earnings over new financing. In some of the normal years between 1920 and 1930, leading railroads disbursed as dividends about one-half of the net for common, large industrials from one-half to two-thirds, and public utilities probably a somewhat higher proportion.[4] Such averages would cover a wide diversity of practices.

The probable dividend policy of a corporation is best judged from its past record. Sometimes the management states its general ideas in the annual report. The balance sheets and income statements will often indicate why earnings may have been retained and to what extent. Sometimes a period of bad times depletes working capital, which it requires a few years of good times to restore. On occasion, a concern has a capital structure which is top-heavy with bonds or preferred stock, and the balance can be corrected only by the slow process of retirement from earnings. Most frequently, a need for improvements and expansion provides the reason, and earnings provide a means without the recourse to the issuance of additional securities.

No definite rule can be laid down for judging of dividend possibilities, but six chief factors should be weighed: (1) the amount of surplus; (2) the amount of net profits for the preceding or current period; (3) the condition of working capital; (4) the stability of earnings; (5) plans for expansion or contraction; and (6) the temperament of the directorate. The presence of surplus is a necessity; a fair showing of profits and sufficient surplus of working capital are most desirable, and the opinion of the board of directors as to all of the factors, plus their personal motives, will determine the dividend declarations. An unstable dividend rate is normally associated with unstable earnings, and yet some directorates maintain a fairly steady dividend rate through good and poor times for the sake of the investment standing of the corporations' securities. The ac-

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[4] Data on the railroads are from the reports of the Interstate Commerce Commission; the data for industrials, from Sloan, Laurence H., *Corporation Profits* (New York: Harper and Brothers, 1929), pp. 114–129. These data are for the years 1926 and 1927.

cumulation of surplus and the use of a reserve for dividend equalization are devices toward this end, but either device requires the parallel accumulation of a suitable fund of cash or its equivalent to make it properly effective. The effect of expansion plans is similarly dependent upon the directors' preference for retaining profits or selling securities to finance the expansion. Industrial corporations finance a major part of their expansion through earnings retention; the railroads used earnings in substantial amounts during the 1920's, when their earnings were good but their credit still suffered from World War I troubles; public utilities finance the bulk of their growth through the sale of securities.[5]

Stability of earnings. Since net operating earnings largely determine the final net earnings figure, the factors which vary the former are the primary determinants of the latter. The few concerns which receive a substantial portion of net income from outside investments should be given special scrutiny, for, as previously suggested, dividend income does not necessarily reflect earning power. The stability of net income may be studied by charting, or by studying percentage variations. One suggested measure of variability is "average deviation." To obtain this measure, an average is struck of the variations in annual earnings from the average figure for a period. The average of these variations or deviations (ignoring plus and minus signs) stated as a percentage of the average earnings gives a measure of relative stability.

The chief defect of this device lies in the fact that persistent growth, especially if punctuated by mergers, will create variations in the most stable kind of business. A possible solution of this difficulty for those who are statistically inclined would be to measure the variations not from average earnings, but from a secular trend fitted to the earnings. A simpler method would be to study the per cent earned on the total investment, that is, bonds plus tangible net worth—which would allow for the growth factor.

Over a short period and when the growth is not a large disturbing factor, the actual earnings figures in dollars are useful.

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[5] For tentative, but not conclusive, evidence, see Guthmann, H. G., "Post-War Trends in the Capital Structures of Large Industrial Corporations," *Annalist*, May 16, 1930, p. 1960. In the period 1920–1929, the Class I railroads in the United States retained earnings of about two billions, an amount substantially equal to the net increase in outstanding capitalization.

Such figures for thirty-five industrial groups, the railroads, utilities, banks, and fire insurance companies are shown in the table on the following page.[6] They illustrate the general principles stated in the following list of factors that affect relative stability of earnings. A general factor affecting all of the industrial corporations during the period shown here is the falling price level in the years 1929–1932. Even though physical volume were maintained at a fairly constant level, as it was for the "Food" and the "Stores" groups, dollar volume and profits would decline. This recession is selected as the most severe test of recent years. It was ended by the upturn in 1933. A lesser recession may be studied in a comparison of 1937 and 1938 earnings data. The changes for a number of important groups given in the table are shown in the graph on page 205, which compares earnings performance in the significant years 1929, 1932, 1937, and 1940.[7]

The following list will be of assistance in detecting the more important conditions which cause some companies to enjoy greater stability of earnings than others:

1. *Goods which have a moderate or low price per unit will tend to sell more steadily than goods with a high price per unit.* The business of the five-and-ten-cent store would be expected to be more stable than that of a department store.[8] The rule is ordinarily as true for goods sold to producers as for goods sold to consumers. During periods of business stress, minor repairs and replacements are continued, expensive maintenance is reduced so far as possible, and major capital expenditures are eliminated. Students of business affairs advocate a reversal of the latter part of this policy, so far as possible, arguing that pur-

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[6] Compiled from *Moody's Manual of Investments,* Industrials, 1941, pp. a36–a38. Other comparative figures for leading corporations are compiled annually by the Federal Reserve Bank of New York and the National City Bank of New York and are published in their monthly bulletins (April issue).

Variations in earnings and dividends of the various industrial divisions are studied in the following Bulletins of the National Bureau of Economic Research:

No. 44. "Industrial Profits in Prosperity and Depression, 1919–1932," by Ralph C. Epstein.

No. 65. "Profits, Losses, and Business Assets, 1929–1934," Solomon Fabricant.

No. 66. "National Income, 1919–1935," Simon Kuznets.

[7] *Ibid.,* the first reference.

[8] The influence of higher-priced merchandise on business in periods of uncertainty is illustrated in the case of S. S. Kresge Company, which reported that its lower sales in 1930 were due mainly to the poorer showing of its green-front stores, retailing merchandise priced from 25¢ to $1, while the volume of the red-front units, selling articles priced from 5¢ to 25¢, was approximately the same as in the preceding year.

EARNINGS OF LEADING CORPORATE GROUPS: 1929, 1932, 1937, 1940

BALANCE AVAILABLE FOR PREFERRED AND COMMON DIVIDENDS

(in millions of dollars)

Corporate Group	*No. of Companies*	*1929*	*1932*	*1937*	*1940*
Agricultural Implements	6	63.7	*d26.5*	55.1	E39.5
Automobiles	14	359.2	*d62.0*	254.1	251.0
Auto Accessories	41	98.8	*d20.8*	72.4	78.6
Beverages	4	18.1	12.1	26.6	30.8
Building Materials	23	85.2	*d27.2*	62.2	54.7
Chemicals	19	158.9	48.9	169.4	E162.0
Coal	14	5.0	*d12.8*	*d 9.8*	E 6.0
Cans	2	31.7	15.8	26.8	26.4
Glass	3	7.5	4.3	13.3	10.3
Paperboard	10	2.6	*d 3.7*	7.2	E 7.5
Copper	14	157.4	*d49.2*	101.4	101.8
Drugs	15	43.6	33.1	36.4	E40.2
Electric Equipment	15	104.5	2.6	93.7	83.4
Biscuit	3	26.9	19.3	13.6	13.3
Bread	10	24.9	7.3	8.6	8.4
Dairy Products	6	48.5	21.6	19.3	22.8
Meat Packing	15	41.1	*d 3.5*	25.7	E31.0
Foods—all Classes		292.5	103.8	137.3	173.8
Gold	9	14.9	25.0	37.4	33.7
Leather	5	*d 6.5*	*d 4.8*	*d .5*	E .3
Machinery	65	112.2	*d34.8*	100.3	E92.0
Office Equipment	10	45.5	*d .7*	36.7	E24.0
Paper	23	38.7	*d24.4*	31.8	E50.2
Petroleum	38	579.3	53.7	556.1	376.6
Printing	6	5.4	*d 1.3*	2.5	3.6
Chain Groceries	12	57.4	42.6	18.9	E31.5
Chain Variety Stores	8	65.2	34.2	61.5	51.2
Department Stores	43	74.2	*d18.1*	50.2	E59.7
Mail Order Houses	4	45.3	*d 8.4*	52.9	61.2
Rubber Goods	8	30.3	*d12.5*	26.0	38.3
Shoes	6	24.9	6.6	10.0	10.1
Steel and Iron	30	387.0	*d152.6*	221.6	262.9
Textile—Cotton	14	8.4	*d 7.6*	1.8	5.8
Textile—Rayon	3	3.9	.5	5.9	9.6
Tobacco—Cigarettes	6	86.3	106.0	78.4	79.0
All Industrials	916	3758.4	*d79.3*	2894.7	E2742.3
Railroads	Class I	896.8	*d150.6*	98.7	191.1
Electric Utilities	41	221.1	167.3	175.8	203.8
Gas Utilities	8	31.1	22.2	19.1	22.0
Telephone—A. T. & T.*		206.5	111.3	182.3	210.5
Commercial Banks (Fed. Res. System)		556.5	*d254.9*	336.6	349.1
Fire Insurance	50	94.5	55.7	73.1	61.7

* After deducting subsidiary preferred and common dividends.
d = deficit.
E = preliminary estimated.

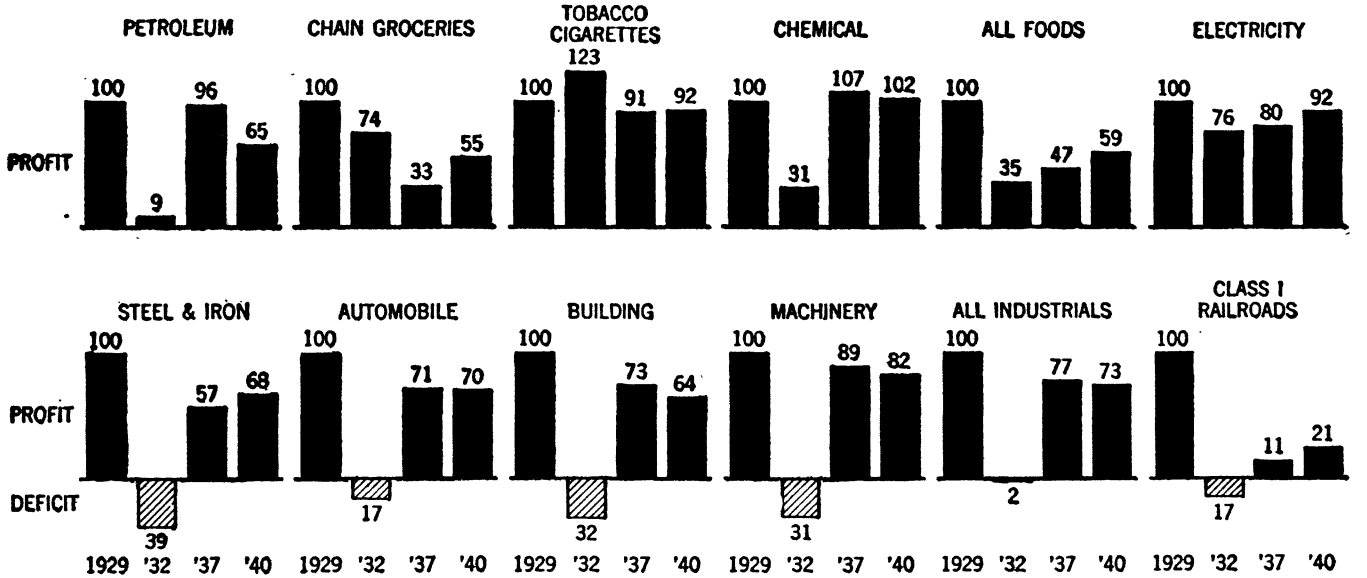

Fig. 2.—Annual Net Profits or Deficits of Industrial and Mercantile Concerns, and Net Income after Fixed Charges of Class I Railroads in 1929, 1932, 1937, 1940. (1929 = 100 per cent.)

chasers in bad times secure the benefit of low prices and avoid the confusion which attends expansion undertaken while the management's attention is engaged in pushing production at top speed.

2. *Goods regarded as necessities will show greater stability in sales volume than those in the luxury class.* Occasionally, a luxury article like tobacco, because of low unit price and habitual purchase at short intervals, will show steadier demand than a necessity, such as men's suits.

3. *Narrow price fluctuations of the goods handled make for stable earnings.* Typically, raw materials, especially in the agricultural group, are highly fluctuating as compared with finished products. As the labor element grows in the price of an article, the price variability tends to diminish. Sugar refiners and meat packers, although supplying necessities of moderate unit price, have notoriously unstable profits owing to inventory price fluctuations. As manufacturers, an unusually large per cent of their costs are for the raw materials supplied almost directly by the agricultural producers.[9] Monopoly or near-monopoly may be helpful in softening the ravages of price declines. In this respect, patent and trademark protection may be helpful by enabling the producer to delay price reductions long enough to dispose of high-cost inventory. Trade-marked food products not only show higher profit margins but are also more stable if not in too direct competition with highly competitive staple lines. The public service corporations, with their regulated rate structures, have stable prices, which are adjusted slowly to changing conditions. As a result, mildly falling prices tend to be favorable by cutting costs, and inflation, unfavorable by raising costs.

4. *Rapid turnover of inventories will result in greater stability of earnings.* The losses and gains in inventory through price fluctuation are reduced when merchandise is not held for long. In this respect, merchants have an advantage over the manufacturing group, especially when the period of manufacture is long. The major rubber goods manufacturers, however, importing their raw material from great distances are at a disadvantage. The fortunes of these concerns can be told almost without regard to volume by studying a chart of rubber price fluctuations.

Summarizing, we may say that the degree of earnings stability

[9] For the proportion of values produced going for materials and for wages, see the *Biennial Census of Manufactures.*

will depend on the stability of dollar volume and net profit margins. The first two factors mentioned above relate to physical volume; the last two, to the price and turnover factors, particularly as they influence the profit spread during periods of economic adjustment, although the price factor may also be important as it affects the profit significance of constant physical volume.

Factor of management. The discussion of the earnings statement has shown what may be revealed in the study of the figures with a minimum of reference to the personal factor and outside conditions. The work of analysis would be incomplete, however, did it not insist upon the importance of considering the skill and other qualifications of the management. Whenever one states that a certain economic factor brought about the failure of a business, one may usually add, ". . . and the management either failed to foresee the difficulty or failed to solve the problem presented." For, after all, it is the ability of the men who face these matters that largely determines the outcome.

In the end, however, managerial ability is not an abstract quality, but leaves its record in the performance of the company. Incompetent management that indulges in speculative financing, engages in excessive expansion, distributes capital as profits, and in general fails to meet the level of achievement set by competitors writes a record in the financial statements. Sometimes the message is obscured by manipulation of the accounts, but more often it fails of delivery because of the inability of the reader to grasp the meaning, either through his own lack of skill in reading or because the management refuses to give any adequate statements.

External causes of failure. Certain outside conditions over which management has little or no control must be kept in mind as potential sources of disaster. While it is the administrator's problem to "see all and know all," he is handicapped in meeting even known conditions by the fixed form of much of his concern's investment; and so even some foreknowledge may be inadequate to avoid the baneful effects of these external factors, a situation which makes it necessary for the analyst to go outside the statements and consider the setting of the business. Probably the chief of these external factors are:

1. *Excessive competition.* This does not refer to cases where ordinary competition eliminates a business under inferior man-

agement. A new retail business, for example, may drive out an older one with less progressive methods. On the other hand, new businesses often create a demand for new goods with little or no harm to the producers already existing. Excessive competition ordinarily refers to cases where a considerable fixed capital investment is employed and the productive capacity is far beyond what the market can absorb. Due allowance must be made for plant which is obsolescent and can no longer hope to produce at a reasonable level of prices, for idle plant which cannot be employed because of abnormal depression conditions, and for the fact that plant can rarely be used to the full rated capacity but must possess some leeway in order to meet the demands of peak requirements. This latter factor of "normal idleness" is expressed by indirection in the conventional load factor, which is the ratio of average demand or plant utilization to maximum, or peak, utilization.[10]

When overdevelopment of an industry characterized by considerable fixed assets does exist, excessive competition follows. Such concerns, once started, are under the necessity of meeting a constant burden of expenses. Unlike some personal service businesses with very liquid assets, they cannot move to new surroundings. Competing railroads have been a choice illustration. With the growing use of large and expensively equipped plants, this same difficulty is bound to appear in industrial enterprises from time to time. Among public utilities, competition was formerly banned but the Federal Government may change this situation by creating governmentally owned projects to compete with existing private plants.

2. *Business cycle.* The irregular fluctuations in business activity which are spoken of as the "business cycle" have a relation to the individual enterprise similar to that between weather and agriculture. Like the weather, the cycle is "much talked about but very little done about it." In adjusting to the storm and sunshine of the business atmosphere, the individual concern can only lay out a general policy designed to conserve the happier results of good times in order to balance the woes of hard times. Differences in skill and good fortune in meeting adverse condi-

[10] Failure to recognize these factors leads to much loose and inaccurate generalization about excessive expansion. For a partial answer with reference to the much discussed shoe industry, see "Is the Shoe Industry Over-built?", *Barron's*, July 30, 1934, p. 6.

tions are brought out by the comparative study of similar concerns over a sufficiently long period to include both prosperous and poor times.

3. *Change in public demand.* This factor may operate through either the passing of a fashion or the introduction of a substitute. Because of its size and interest, the decline of the bicycle industry at the beginning of the century is regarded as a prime example of the first sort. The substitution of the automobile for the horse carriage has changed the course of the carriage-building industries. The investor in the automobile and accessory industries will be on the alert for like changes in the future. The change in demand may be detected by comparing the volume of sales with the trend of business conditions. Where sales fail to respond to increased business activity, or where they show signs of slump unwarranted by general conditions, the management has fair warning of this possibility of change in demand.

4. *Political conditions* cover a number of matters, the chief of which are regulation, reform, and taxation. Regulation has been important chiefly among the public service corporations. On the one hand this regulation has limited return, but on the other, it has restricted competition, which has usually been costly to both the companies and the consumer public in this field. Other important financial effects that political conditions have had are limitations upon adjustment to new conditions—as in the case of truck competition with the railroads—regulation of new security issues, and the setting of service standards.

Reform has included a great deal of important legislation, among which may be mentioned antitrust laws, factory inspection and workmen's compensation laws, restrictions upon the employment of women and children, and the host of laws introduced by the Roosevelt administration beginning in 1933. Taxation, like the subject of business cycles, is worthy of special study by itself in view of its many and powerful influences upon business earnings and survival. Unwise state and local taxation particularly may place local industry under a severe handicap in its attempt to meet the competition of less burdened concerns in the struggle for national markets. Even when taxes are uniform, they may be raised to such a high level as to force business either to raise prices to a point that will discourage consumption or, if prices are unchanged, to suffer an inadequate return or losses.

Summary. From the foregoing material on the income statement certain relationships, or ratios, appear to be most commonly employed. These are:

1. Gross profit margin.
2. Net operating income margin.
3. Per cent relation of the various operating expenses to net sales.
4. Relation of the depreciation allowance, or, if possible, depreciation and maintenance, to the gross fixed operating assets.
5. Per cent of nonoperating income to the nonoperating assets producing such income. If these assets are stocks, an attempt to learn actual earning power will give an even more useful figure than the income collected.
6. Times interest, or fixed charges, earned.
7. Times interest plus preferred dividends earned.
8. Per cent of net income earned on total tangible investment, that is, bonds plus tangible net worth.
9. Per cent of net profit earned on tangible net worth.

These relationships are interpreted in the light of changing prices, conditions affecting business generally and the particular line of business, and any special circumstances within the corporation. Since stability of earnings makes for greater predictability on the basis of past performance, the factors which might make for that condition are checked closely. The possible influence of management and of external changes likewise requires attention as a part of the setting in which profits are made.

CHAPTER X

Supplementary Information

Information to supplement statements. In concluding the general discussion of the subject of this book, attention is drawn to certain information which is so frequently associated with the two financial statements that any discussion which did not consider it would be incomplete. The forms employed by mercantile and bank credit men include questions on these supplementary points needful for clarifying the figures presented by recipients of credit. Those who furnish the statements indirectly received by credit men also attempt to obtain and include such pertinent information. Similarly, the Securities and Exchange Commission requires supplementary information in connection with the financial statements of corporations registering new security issues.

The consideration of this supplementary information falls in logically with the matter of the forms used first for gathering and then for analysis and filing. The discussion with respect to the use of statements for mercantile and bank credit purposes is taken up first, and then their use for investment purposes. The reasons for this divided discussion are: (1) the greater emphasis by creditors upon the balance sheet and solvency, and by investors upon earnings; and (2) the ability of the former to obtain information first-hand, where the latter depend almost entirely upon material generally available at second-hand to all and can rarely demand supplementary information. However, the rise of "term loans" by commercial banks, i.e., loans to be amortized over a period of years, usually three to five years, has made for greater study of earnings and of the type of approach used for investment purposes.

Forms for acquiring statements. A statement form adopted and recommended by the National Association of Credit Men, the short and long forms suggested by the Federal Reserve Bank of New York for member banks to use in obtaining statements from borrowers, and the long form for corporations designed and

approved by the Bank Management Commission of the American Bankers Association are shown here.[1] Variations in form show differences in the classes of customers—small tradesmen not being expected to have as elaborate statements as large ones —and also differences among creditors in their ideas as to what is essential and what they believe they can obtain from their customers. The form of the National Association of Credit Men is much fuller than the one originally recommended, and the titles, while simple, are designed to prevent any misleading classification. The association publishes other forms containing varying amounts of detail, particularly as to earnings, and also has a separate form for a detailed profit and loss statement. The Federal Reserve Bank of New York forms show slightly more conventional account titles. The form presented by the American Bankers Association shows many similarities to the Federal Reserve Bank long form. The longer forms are especially interesting in suggesting the kind of supplementary information useful in statement analysis. They are remarkable in their request for earnings statements, in marked contrast to early practice.

Customers' receivables. Of the supplementary information which is related primarily to the balance sheet, that about the accounts and notes receivable may be considered first. A detailed list of the customers' accounts would be of interest to the management; but for the outsider, a grouping that will throw light on collectibility is sufficient. A simple division showing the accounts past due and those not yet due would be very helpful, save perhaps in the case of retailers, where a running account often prevails and amounts are paid "on account" rather than to clean up specific invoices. For running accounts, an estimate of the amount "collectible," subject to the usual check of the

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[1] Illustrative forms both for obtaining and for analyzing statement material may be found in: (1) Ettinger, R. P., and Golieb, D. E., *Credits and Collections* (New York: Prentice-Hall, Inc., rev. ed., 1929), pp. 252, 254–255, and 288–291; (2) Chapin, A. F., *Credit and Collection Principles and Practices* (New York: McGraw-Hill Book Co., Inc., 1929), pp. 258–259; (3) Foulke, R. A., *The Commercial Paper Market* (New York: Bankers Publishing Company, 1931), pp. 115–123; (4) Gilman, Stephen, *Analyzing Financial Statements* (New York: Ronald Press, rev. ed., 1934), pp. 28–33; (5) Kavanaugh, T. S., *Bank Credit Methods and Practices* (New York: Bankers Publishing Company, 3rd ed., 1924), pp. 102–103, 189–198, 229; (6) Lincoln, E. E., *Applied Business Finance* (New York: McGraw-Hill Book Co., Inc., 5th ed., 1941), pp. 329–332; (8) Strain, Myron, *Industrial Balance Sheets* (New York: Harper and Brothers, 1929), pp. 157–165; and (9) Wall, A., and Duning, R. W., *Ratio Analysis of Financial Statements* (New York: Harper and Brothers, 1928), pp. 55, 56, 61–64, and 92–99.

5W

STATEMENT OF FINANCIAL CONDITION OF _____

Kind of Business _____ Address _____

. TO _____ ⟵ [Name of firm asking for statement]

[THIS FORM APPROVED AND PUBLISHED BY THE NATIONAL ASSOCIATION OF CREDIT MEN]

For the purpose of obtaining merchandise from you on credit, or for the extension of credit, we make the following statement in writing, intending that you should rely thereon respecting our exact financial condition.

[PLEASE ANSWER ALL QUESTIONS. WHEN NO FIGURES ARE INSERTED, WRITE WORD "NONE"]

ASSETS	Dollars	Cts	LIABILITIES	Dollars	Cts.
Cash in bank			Accounts payable for merchandise, etc., past due		
Cash on hand			Accounts payable for merchandise, etc., not due		
Accounts receivable, not due			Acceptances and notes payable for merchandise		
Accounts receivable, past due			Owing to finance companies, banks or others		
Notes and acceptances receivable			(Secured by $ _____ of accounts sold, pledged or assigned)		
Merchandise not on consignment or conditional sale. How valued: at cost ☐, or "at cost or market, whichever is lower" ☐			(Secured by $ _____ of acceptances or notes pledged or assigned)		
Other current assets (describe):			(Secured by $ _____ of merchandise inventory pledged or assigned)		
			Taxes, interest, rental, payrolls, etc., accrued		
			Notes payable to banks		
TOTAL CURRENT ASSETS			Payable to partners, friends, relatives, etc.		
Land and buildings (present depreciated value)			Other current liabilities (describe):		
Machinery, fixtures and other equipment (present depreciated value)			TOTAL CURRENT LIABILITIES		
Due from partners, or others not customers			Mortgage on land and buildings		
Other assets (describe):			Chattel mortgage or liens on bldg. and equip't.		
			Other liabilities not current (describe):		
			TOTAL LIABILITIES		
			Net Worth (If corp. include Capital & Surplus)		
TOTAL ASSETS			TOTAL (NET WORTH AND LIABILITIES)		

ANNUAL SALES. $ _____ AVERAGE MONTHLY SALES FOR CASH. $ _____

AVERAGE MONTHLY EXPENSES $ _____ AVERAGE MONTHLY SALES ON CREDIT $ _____

Are you a corporation, co-partnership, or individually owned? _____ Your terms of sale _____

For what amount are you liable as endorser, surety, guarantor, etc.? $ _____ Amount of notes or acceptances discounted or sold $ _____

Amount of fire insurance $ _____ Life insurance for benefit of business $ _____ What amount of merchandise do you hold on consignment or conditional sale? $ _____ What amount of machinery or equipment is held under conditional sale? $ _____ (Balance due $ _____ at $ _____ per month). If machinery or equipment is under lease contract, state amount of monthly payments $ _____

What books of account do you keep? _____ Actual date of last inventory _____

Title to real estate is in name of _____ If business premises are leased to you, state term and annual rental _____ How long have you been established? _____

Previous business experience _____ Where? _____

Name and address of your bank _____

BUY PRINCIPALLY FROM THE FOLLOWING FIRMS

NAMES	ADDRESSES	AMOUNT OWING

The foregoing statement has been carefully read by the undersigned (both the printed and written matter), and is, to my knowledge, in all respects complete, accurate and truthful. It discloses to you the true state of my (our) financial condition on the _____ day of _____ 19___. Since that time there has been no material unfavorable change in my (our) financial condition, and if any such change takes place I (we) will give you notice. Until such notice is given, you are to regard this as a continuing statement.

Name of Individual or Firm _____

If Partnership, Name Partners / If Corporation, Name Officers _____

Date of Signing Statement _____ Street _____ City _____ State _____

Witness _____ Signed by _____

Residence Address of Witness _____ Title _____

Size 10½"

THE WORKMAN MFG. CO., CHICAGO.

NO ENVELOPE IS REQUIRED
JUST FOLD, STAMP AND MAIL

Fig. 3.—Statement Form Approved by National Association of Credit Men.

Form CR.7 (Revised February 1938)

FINANCIAL STATEMENT

of

Statement Form Suggested by Federal Reserve Bank of New York

CORPORATION
(Short Form)

NAME.....

BUSINESS..... ADDRESS.....

TO..... BANK OF.....

We make the following statement of all the assets and liabilities of this corporation at the close of business on the..... day of....., 19....., and give other material information for the purpose of obtaining advances on notes and bills bearing our signature or endorsement, and for obtaining credit generally upon present and future applications.

(PLEASE COMPLETE ALL SCHEDULES AND FILL IN ALL BLANKS; INSERT "NONE" IF APPROPRIATE.)

ASSETS		LIABILITIES	
Cash (On hand, and unrestricted in banks)	$	Notes Payable to Banks	$
Notes Receivable from Customers (Good, and readily collectable)		Notes Payable to Trade Creditors (Given for merchandise, equipment, etc.)	
Accounts Receivable from Customers (Current and collectable)		Notes Payable to Others (Except officers, stockholders and employees)	
Merchandise		Loans on Life Insurance	
Life Insurance, Cash Surrender Value (Without deducting loans)		Accounts Payable	
Securities, Readily Marketable (Stocks, bonds, etc., at present selling value)		Due to Officers, Stockholders, Employees	
		Due to Subsidiaries and Affiliates	
(Itemize above other current assets)		Taxes and Assessments	
Total Current Assets		Mortgage and Bonded Debt (Due and payable within one year)	
Land and Buildings (Without deducting mortgages or depreciation reserves)		Accrued Liabilities (For wages, interest, insurance, etc.)	
Machinery, Equip't, Furniture, Fixtures, etc. (Without deducting depreciation reserves)			
		(Itemize above other current liabilities)	
Accounts and Notes Receivable (From customers, slow or doubtful of collection)		Total Current Liabilities	
Investments in Subsidiaries and Affiliates (Not including loans, advances, accounts, etc.)		Real Estate Mortgages Payable (Due and payable after one year)	
Due from Subsidiaries and Affiliates		Other deferred liabilities (describe)	
Due from Officers, Stockholders, Employees		Total Liabilities	
		Reserve for Depreciation	
		Capital Stock	
		Surplus	
Total Assets	$	Total Liabilities and Net Worth	$

STATEMENT OF PROFIT & LOSS for period beginning , 19 and ending , 19 .

Inventory, Beginning of Period	$	Inventory, End of Period	$
Net Purchases		Net Income from Sales	
Operating Expense		Income from Investments	
Officers' Compensation		Income from Commissions	
Bad Debts Charged Off		Other Income (Itemize)	
Depreciation Charged Off			
Other Administrative, Selling & Gen'l Exp'se			
Reserves Created			
Net Profit		Net Loss	
Total	$	Total	$

RECONCILIATION OF EARNED SURPLUS for period beginning , 19 and ending , 19 .

Earned Surplus, Beginning of Period..... $

Deductions from Earned Surplus (Itemize below)		Additions to Earned Surplus (Itemize below)	
	$		$
		Total Additions	

Total Deductions..... (Use next column)

Net Surplus Change.....

Earned Surplus, End of Period..... $

Cr.7.6 25M 7-40

(CONTINUED ON OTHER SIDE)

Fig. 4A.—Statement Form Suggested by Federal Reserve Bank of New York for Corporation (short form).

(CONTINUED FROM OTHER SIDE)

Contingent Liabilities and Commitments. This corporation has no contingent liabilities or commitments outstanding against it, except as follows: Notes and Accounts Receivable, Trade Acceptances, Conditional Sales Contracts, etc., discounted, or sold with recourse $.....; as Accommodation Endorser or Guarantor $.....; on Mortgage Bonds $.....; in connection with Law Suits, including Torts, Injuries, etc. $.....; in connection with Leases $.....; claims for Taxes $.....Commitments to Buy $.....; Commitments to Sell $.....Other (describe):.....

Land and Buildings. Description and Location of Each Parcel	Estimated Present Value	Assessed Value	Amount of Fire Insurance	Amount of Mortgages	Taxes, Assessm'ts, Mortgage Interest Due and Unpaid
	$	$	$	$	$

Title to Real Estate. The legal and equitable title to all the real estate listed in this statement is solely in the name of the undersigned corporation, except as follows:

Notes Receivable (From Customers). Considered collectable within 90 days $.....; of slow or doubtful collectability $.....; pledged or discounted $.....

Accounts Receivable (From Customers). Past due, but less than 90 days $.....; past due more than 90 days $.....; considered of doubtful collectability $.....; accounts assigned, pledged or hypothecated $.....

Merchandise. Date of last physical inventory.....
Basis of valuation.....
Raw materials $.....; in process $.....; finished goods $.....; supplies, etc., $.....
Slow moving or obsolete goods $..... Goods held by us on consignment $.....; out on consignment to others $..... Merchandise on hand or in transit, or otherwise held, not included in balance sheet $.....We are under contract to buy merchandise in the amount of $.....; which goods are worth $.....at present market prices.

Life Insurance on Officers for Benefit of Company. $.....
Names of Insured .....

Securities (Stocks, Bonds, etc.). Description of each investment, and whether readily marketable at stated values.....
.....
Registered in name of.....

Notes Payable. Description of security given.....
.....

Accounts Payable. Past due.....$.....

Deferred Liabilities (Bonds, etc.). Description of security given
.....
Interest rate.....%. Interest paid up to.....19.....

Terms. Selling terms .....
Purchasing terms .....

Maximum and Minimum Liabilities (during last fiscal year).
Maximum of $.....on.....19.....
Minimum of $.....on.....19.....

Fire Insurance. On merchandise $.....; on machinery, equipment, furniture, fixtures, etc. $.....

Liability Insurance. Automobile property damage $.....
personal liability $..... General public liability $.....
Autos and trucks owned or operated without insurance.....

Mortgages, Liens, etc. Description of all property, including current assets, pledged as security to mortgages or covered by liens, not disclosed elsewhere in statement.....

Accounting Information. Frequency of audits.....
Name of outside auditor.....
Date of last audit.....Date of fiscal year end.....

Suits, Judgments and Other Legal Actions. Description of all such pending, outstanding or remaining unsettled against this corporation: .....
.....
.....

Incorporation. This corporation was organized under the laws of the State of.....on.....19.....

Capital Stock Outstanding (on statement date).
Common Stock: .....shares.....$.....
.....% Preferred: .....shares.....$.....
Dividends accumulated and unpaid.....$.....

Surplus (on statement date).
Earned Surplus .....$.....
Unearned or Capital Surplus.....$.....

Subsidiary and Affiliated Companies and Interests. There are none, except the following (names and relationship):

Officers and Directors.

Name	Title	Annual Compensation	Number of Shares Owned: Common	Preferred	
		$			

Pledge, Assignment and Transfer of Title of Assets. As of the date of the statement of assets and liabilities included in this financial statement, none of the assets of this corporation as listed herein were pledged, assigned, hypothecated, nor had the title thereto been transferred, except as noted in this financial statement; and none of the assets of this corporation have been since that date pledged, assigned or hypothecated, nor has the title thereto been transferred, except as follows:

We, the undersigned, hereby certify that the foregoing statement of assets and liabilities and the statement of profit and loss and reconciliation of surplus, are taken from the books of this corporation and that they are in accordance with said books and that they and all other statements printed or written on the two sides of this sheet have been carefully read and are true and give a correct showing of the financial condition of the corporation as of the date of the balance sheet hereinabove contained, except where a different date is specifically noted. IN THE EVENT OF ANY MATERIAL CHANGE IN THE FINANCIAL CONDITION OF THIS CORPORATION, WE AGREE TO NOTIFY SAID BANK IMMEDIATELY IN WRITING.

Signed this.....day of.....19.....Signature.....

By.....
(Name and Official Title)

Identify each schedule as being part of this financial statement; date and sign each schedule same as this form.
Attach separate schedules whenever space on this form is insufficient.

Fig. 4B.—Statement Form Continued (Page 2).

Form CR 100
(Revised Feb. 1936)

Statement Form Suggested by
Federal Reserve Bank of New York

FINANCIAL STATEMENT

CORPORATION
(Long Form)

NAME .....

BUSINESS ..... ADDRESS .....

TO ..... BANK OF .....

We make the following statement of all the assets and liabilities of this corporation at the close of business on the ..... day of ....., 19....., and give other material information for the purpose of obtaining advances on notes and bills bearing our signature or endorsement, and for obtaining credit generally upon present and future applications.

(PLEASE COMPLETE ALL SCHEDULES AND FILL IN ALL BLANKS)

ASSETS	$				LIABILITIES	$			
Cash On hand, and unrestricted in banks					Notes Payable to Banks, Unsecured				
Notes Receivable, Not Discounted From customers, except subsidiaries, etc.					Notes Payable to Banks, Secured				
Notes Receivable, Discounted With banks, finance companies, etc.					Customers' Notes Discounted With banks, finance companies, etc.				
Accounts Receivable (Current & Collectable) From customers, except subsidiaries, etc.					Loans on Life Insurance				
Due From Subsidiaries & Affiliates Current accts. only, for goods, within regular terms.					Notes Payable for Mach'y, Equip't., etc. Payable within one year				
Merchandise—Raw Materials					Notes Payable for Merchandise				
—Supplies					Accounts Payable				
—Goods in Process					Due to Subsidiaries & Affiliates Current accounts & notes, for purchase of goods, etc.				
—Finished					Due to Subsidiaries & Affiliates Loans and advances				
Life Insurance, Cash Surrender Value (Do not deduct loans)					Due to Officers, Stockholders, Employees				
Securities, Readily Marketable Stocks, bonds, etc. listed on Stock Exchange, etc.					Accrued Liabilities For wages, interest, insurance, etc.				
					Mortgage and Bonded Debt Due and payable within one year				
					Taxes and Assessments				
Total Current Assets					Total Current Liabilities				
Land and Buildings, Used in Business Before depreciation reserves					Real Estate Mortgages Payable Due after one year				
Land and Buildings, Not Used in Business Before depreciation reserves					Bonded Debt, ____ %, Due Due after a year (List issues separately)				
Machinery and Equipment Before depreciation reserves									
Furniture and Fixtures Before depreciation reserves					Other Deferred Liabilities (Describe)				
Trucks, Autos, etc. Before depreciation reserves									
					Total Liabilities				
					Depreciation Reserve—Buildings				
Investments in Subsidiaries & Affiliates Not including loans, advances, accounts, etc.					—Mach'y & Equip't.				
Due From Subsidiaries & Affiliates Loans, advances, slow receivables					—Furn. & Fixt's.				
Due From Officers, Stockholders, Employees					—Trucks, etc.				
					Preferred Stock Dividend Rate ____ %. Cumulative?				
Accounts & Notes Receivable Slow or doubtful of collection									
Prepaid Expenses Taxes, insurance, interest, rent, etc.					Common Stock				
Patterns, Dies, Lasts, Copyrights, etc.									
Patents					Unearned or Capital Surplus				
Good Will					Earned Surplus				
Total Assets	$				Total Liabilities & Net Worth	$			

CR. 100.2 10M 2-41

Fig. 5A.—Statement Form Suggested by Federal Reserve Bank of New York for Corporation (long form).

STATEMENT OF PROFIT & LOSS—RECONCILIATION OF NET WORTH

For Period Beginning ..... 19..... and Ending ..... 19.....

Gross Sales—To Subsidiaries and Affiliates ..... $.....
—To Others ..... $.....
Less: Returns and Allowances (Except cash discounts) .....

NET SALES .....
Inventory, Beginning of Period .....
Purchases During Period (Before cash discounts) .....
Direct Labor .....
Other Costs, as Itemized Below (List separately all large ledger accounts)
.....
.....
.....
.....
.....
.....
.....
.....
Total .....
Less: Inventory, End of Period .....
Cost of Goods Sold .....

GROSS PROFIT .....

Administrative & General Expenses		Selling Expenses	
Officers' Salaries	$.....	Salaries	$.....
Other Salaries	.....	Commissions	.....
Interest	.....	Traveling, etc.	.....
Bad Debts (List separately below other large accounts)	.....	Advertising	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
Depreciation (Not applicable elsewhere)	.....	Total	.....
Total (Use next column)	.....		

Total Administrative, General, and Selling Expenses .....

NET OPERATING PROFIT .....

Other Income		Other Expenses	
Cash Discounts Received (List other items)	$.....	Cash Discounts Given (List other items)	$.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	Total Other Expenses	.....
Total Other Income (Use next column)	.....		

Net Addition or Deduction for Other Income and Expense .....

NET INCOME FOR PERIOD .....
Earned Surplus, Beginning of Period .....

Deductions from Surplus (Itemize below)		Additions to Surplus (Itemize below)	
.....	$.....	.....	$.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	Total Additions	.....
Total Deductions (Use next column)	.....		

Net Surplus Change .....
Earned Surplus, End of Period ..... $.....

Fig. 5B.—Form Continued (Page 2).

SUPPLEMENTARY SCHEDULES AND INFORMATION

Important: Unless otherwise specified the following schedules reflect status as of balance sheet date.
(Whenever schedule space is insufficient, submit separate schedules containing same details.)

Banking Relations (A list of all bank accounts)

Name and Location of Bank	Cash Balance	Amount of Loans	How Endorsed, Guaranteed or Secured

Accounts Receivable (Including nothing due from officers, stockholders, employees)	**Notes & Trade Acceptances Receivable**
NOT DUE—(According to original terms) ..... $	Original Notes & T/A's, not renewed ..... $
PAST DUE—Less than 3 months	Renewed Notes & T/A's .....
—From 3 to 6 months	Past due and protested Notes & T/A's .....
—More than 6 months	Total Notes & T/A's Receivable .....
Total Accounts Receivable	Less: Reserve for Doubtful .....
Less: Reserve for Doubtful Accounts	Notes & T/A's Receivable—Net .....
Accounts Receivable—Net Book Amount	Amount considered of slow collection .....
Amount of Accounts considered doubtful	Amount considered of doubtful collection .....
Amount of Accounts pledged, hypothecated, etc.	Amount of Notes & T/A's discounted, pledged, etc. .....

Selling Terms:

Merchandise. Basis of valuation ..... Amount of fire insurance $.....

Date of last physical inventory ..... Amount of slow moving merchandise $..... ; of obsolete merchandise $..... Amount held on consignment $..... , of which $..... is included in the balance sheet. Amount of merchandise pledged $..... ; out on consignment to others $.....

During the year, the largest and smallest amount of merchandise on hand is in the months indicated:

	Highest (Fill in the months)	Lowest
Raw Materials		
Finished Goods		

Life Insurance

Name of Person Insured	Name of Beneficiary	Type of Policy	Face Amount of Policy	Total Cash Surrender Value	Total Loans Against Policy	To Whom Policy is Assigned
			$	$	$	

Securities Owned (With those representing Affiliated Interests designated by "A" and those considered Readily Marketable by "R.M.")

Face Value (Bonds) No. of Shares (Stocks)	A or R.M.	Description of Security	Registered in Name of	Cost	Present Book Value	Income Received Last Year	To Whom Pledged
				$	$	$	

Real Estate

	Location and Description	Age and Condition	Cost with Improvements	Assessed Value	Fire Insurance	Estimated Present Value
1			$	$	$	$
2						
3						
4						

	First Mortgage		Second Mortgage		Third Mortgage		Used in Business?	Yearly Gross Rental Income	Yearly Net Rental Income (Before Depreciation)
	Amount	Maturity	Amount	Maturity	Amount	Maturity			
1	$		$		$			$	$
2									
3									
4									

The legal and equitable title to all the real estate listed above is solely in the name of this corporation, except as follows:

Accounts and Notes Payable	**Insurance**
Amount past due, or renewed ..... $	Fire Insurance on machinery, fixtures, etc. ..... $
Purchase terms:	Automobile Liability Insurance .....
	General Public Liability Insurance .....

Continued on next page

Fig. 5C.—Form Continued (Page 3).

Continued from preceding page

Maximum and Minimum Current Liabilities. During the last fiscal year current liabilities were at a maximum of $.....
on.....19....., and a minimum of $.....on.....19.....

Contingent Liabilities. This corporation has no contingent liabilities, except as follows: on Notes and Accounts Receivable, Conditional Sales Contracts, etc. discounted or sold with recourse to Banks and Finance Companies $.....; as Guarantor $.....; as Accommodation Indorser $.....; on Future Sales Contracts $.....; on Future Purchase Contracts $.....; in connection with Leases $.....; in respect to Lawsuits, including Torts, Injuries, etc. $.....; Patent, Copyright and Trademark Claims $.....; on Claims for Federal Taxes $.....; Other (describe)

Suits, Judgments and Other Legal Actions. There are outstanding or pending against this corporation no suits, judgments or other legal actions and to the best of the knowledge of the officers and employees no legal actions are to be started against this corporation, except as follows:

Pledge, Assignment and Transfer of Title of Assets. As of the date of the statement of assets and liabilities included in this financial statement, none of the assets of the corporation as listed herein were pledged, assigned, hypothecated, nor had the title thereto been transferred, except as noted in the schedules of this financial statement; and none of the assets of this corporation have been since that date pledged, assigned or hypothecated, nor has the title thereto been transferred, except as follows:

Bond Issues (Describe each issue separately). **Description of assets on which a lien, including any current assets covered:**

Summary of indenture provisions, including sinking fund requirements:

There are no defaults in connection with any of the provisions of the indenture(s), except as follows:

Name and address of Trustee(s):

Preferred Stock. Summary of provisions:

Voting powers of preferred stockholders:
Amount of preferred stock dividends accumulated and unpaid $....., representing a period of.....

Capital Stock. Number of shares of each class (1) authorised, and (2) outstanding:

Incorporation. Name of State under whose laws this corporation is organized:

Fiscal Period. The fiscal period of this corporation closes on the day of

Officers and Directors			Number of Shares Owned		
Name	Title	Annual Compensation	Common	Preferred	
		$			

Subsidiaries and Affiliated Companies and Interests. Names and addresses, nature of relationship, and how accounts are handled:

Certified Public Accountant. This corporation employs.....
(Name and address)
Certified Public Accountant, who audits our books every....., and made last audit
(State how often audits made)
report as of....., 19.....

We hereby certify that the foregoing figures, comprising the statement of assets and liabilities and the statement of profit and loss and reconciliation of surplus, are taken from the books of this corporation and that they are in accordance with said books and that they and all other statements printed or written on the four pages of this form have been carefully read and are true and give a correct showing of the financial condition of the corporation as of the date shown in the paragraph preceding the statement of assets and liabilities on the first page, except where a different date is specifically noted. IN THE EVENT OF ANY MATERIAL CHANGE IN THE FINANCIAL CONDITION OF THIS CORPORATION, WE AGREE TO NOTIFY SAID BANK IMMEDIATELY IN WRITING.

Signed this.....day of.....19..... **Signature**.....

By.....
(Name and Official Title)

Fig. 5D.—Form Continued (Page 4).

FORM NO. 3

CORPORATION
FINANCIAL STATEMENT
(LONG FORM)

FORM DESIGNED AND APPROVED BY BANK MANAGEMENT COMMISSION AMERICAN BANKERS ASSOCIATION

NAME_____ (DATE)

BUSINESS_____ ADDRESS_____

TO_____
(NAME OF BANK)

FOR THE PURPOSE OF OBTAINING ADVANCES FROM TIME TO TIME ON BILLS, NOTES AND OTHER COMMERCIAL PAPER SIGNED OR ENDORSED BY THE UNDERSIGNED, AND OF OBTAINING CREDIT GENERALLY, THE UNDERSIGNED MAKES THE FOLLOWING STATEMENT OF_____FINANCIAL CONDITION AS OF THE CLOSE OF BUSINESS ON THE_____DAY OF_____19___, AND CERTIFIES TO THE ABOVE-NAMED BANK THAT THE INFORMATION HEREINAFTER SET FORTH IS IN ALL RESPECTS TRUE, ACCURATE AND COMPLETE AND CORRECTLY REFLECTS THE FINANCIAL CONDITION OF THE UNDERSIGNED ON THE DATE AFOREMENTIONED

(FILL ALL BLANKS, WRITING "NO" OR "NONE" WHERE NECESSARY TO COMPLETE INFORMATION.)

ASSETS				LIABILITIES			
CASH—ON HAND $_____: IN BANK $_____ (SEE SCHEDULE)				NOTES PAYABLE			
NOTES RECEIVABLE OF CUSTOMERS (SEE SCHEDULE)				TO BANKS			
ACCOUNTS RECEIVABLE OF CUSTOMERS (SEE SCHEDULE)				FOR MERCHANDISE			
MERCHANDISE—FINISHED (SEE SCHEDULE)				FOR MACHINERY, EQUIPMENT, ETC.			
—IN PROCESS				TO OTHERS FOR BORROWED MONEY			
—RAW				TRADE OR BANK ACCEPTANCES PAYABLE			
SECURITIES OWNED (OTHER THAN IN SUBSIDIARIES AND AFFILIATES) (SEE SCHEDULE)				ACCOUNTS PAYABLE—NOT DUE			
OTHER CURRENT ASSETS (ITEMIZE)				—PAST DUE			
				DUE TO SUBSIDIARIES AND AFFILIATES			
				DUE TO STOCKHOLDERS, DIRECTORS OFFICERS, AND EMPLOYEES			
				DIVIDENDS DECLARED BUT UNPAID			
				RESERVED FOR, AND ACCRUED TAXES			
				ACCRUED EXPENSES—WAGES, INTEREST, INSURANCE			
				CHATTEL MORTGAGES } DUE WITHIN 1 YEAR			
				MORTGAGES } DUE WITHIN 1 YEAR			
				BONDED DEBT } DUE WITHIN 1 YEAR			
TOTAL CURRENT ASSETS				OTHER CURRENT LIABILITIES (ITEMIZE)			
INVESTMENTS IN SUBSIDIARIES AND AFFILIATES (EXCLUDING LOANS, ADVANCES, ETC.) (SEE SCHEDULE)							
DUE FROM SUBSIDIARIES AND AFFILIATES (SEE SCHEDULE)							
DUE FROM STOCKHOLDERS, DIRECTORS, OFFICERS, AND EMPLOYEES				TOTAL CURRENT LIABILITIES			
LIFE INSURANCE—CASH SURRENDER VALUE (DO NOT DEDUCT LOANS) (SEE SCHEDULE)				CHATTEL MORTGAGES } DUE AFTER 1 YEAR			
GOODWILL, PATENTS, TRADEMARKS, COPYRIGHTS, DIES, PATTERNS, ETC.				MORTGAGES } DUE AFTER 1 YEAR			
LAND—USED IN BUSINESS (SEE SCHEDULE)				BONDED DEBT (SEE SCHEDULE) } DUE AFTER 1 YEAR			
BUILDINGS—USED IN BUSINESS } BEFORE DEPRECIATION RESERVES				LOANS ON LIFE INSURANCE			
MACHINERY AND EQUIPMENT } BEFORE DEPRECIATION RESERVES				OTHER LIABILITIES (ITEMIZE)			
FURNITURE AND FIXTURES } BEFORE DEPRECIATION RESERVES							
TRUCKS AUTOS HORSES, WAGONS, ETC. } BEFORE DEPRECIATION RESERVES							
LAND AND BUILDINGS—NOT USED IN BUSINESS (SEE SCHEDULE)							
PREPAID EXPENSES—INTEREST, INSURANCE, ETC.				TOTAL LIABILITIES			
OTHER ASSETS (ITEMIZE)				RESERVES FOR DEPRECIATION			
				BUILDINGS			
				MACHINERY AND EQUIPMENT			
				FURNITURE AND FIXTURES			
				TRUCKS, AUTOS, ETC.			
				RESERVE FOR CONTINGENCIES			
				OTHER RESERVES (ITEMIZE)			
				TOTAL RESERVES			
				CAPITAL AND SURPLUS			
				PREFERRED STOCK } (SEE SCHEDULE)			
				COMMON STOCK } (SEE SCHEDULE)			
				EARNED SURPLUS			
				CAPITAL SURPLUS			
TOTAL				TOTAL			

(BE SURE ALL SCHEDULES ARE FILLED OUT)

Fig. 6A.—Corporation Financial Statement Form (long form) Approved by Bank Management Commission of the American Bankers Association.

CONTINGENT LIABILITIES

	$		
NOTES RECEIVABLE, TRADE ACCEPTANCES, OR DRAFTS DISCOUNTED OR SOLD		GUARANTOR FOR OTHERS ON NOTES, ACCOUNTS OR CONTRACTS	
NOTES RECEIVABLE OR TRADE ACCEPTANCES PLEDGED OR ASSIGNED		MAXIMUM LIABILITY FOR PROPOSED ADDITIONAL INCOME TAXES	
CUSTOMERS' ACCOUNTS DISCOUNTED OR SOLD		BONDS OR UNFINISHED CONTRACTS	
CUSTOMERS' ACCOUNTS ASSIGNED OR PLEDGED		PURCHASE COMMITMENTS OUTSTANDING	
ACCOMMODATION PAPER, ENDORSEMENTS OR NOTES EXCHANGED WITH OTHERS		LITIGATION IN PROCESS OR THREATENED	
		OTHER CONTINGENT LIABILITIES	

STATEMENT OF PROFIT AND LOSS

FOR THE PERIOD BEGINNING _____ 19____ AND ENDING _____ 19____

GROSS SALES						TOTAL ADMINISTRATIVE, GENERAL AND SELLING EXPENSES					
LESS: RETURNS AND ALLOWANCES						OPERATING PROFIT					
NET SALES						OTHER INCOME					
COST OF GOODS SOLD: TOTAL INVENTORIES AT BEGINNING OF PERIOD						INVESTMENTS					
ADD: PURCHASES DURING PERIOD						CASH DISCOUNTS RECEIVED					
FOR MANUFACTURER ONLY: DIRECT LABOR						RECOVERIES FROM NOTES AND ACCOUNTS PREVIOUSLY CHARGED OFF					
FOR MANUFACTURER ONLY: DEPRECIATION OTHER FACTORY OVERHEAD						OTHER					
TOTAL						TOTAL					
DEDUCT: TOTAL INVENTORIES AT CLOSE OF PERIOD						OTHER EXPENSES					
GROSS PROFIT						INTEREST					
SELLING EXPENSES						CASH DISCOUNTS GIVEN					
SALARIES						OTHER					
COMMISSIONS						TOTAL					
TRAVELING						NET PROFIT OR LOSS BEFORE INCOME TAXES					
ADVERTISING						ACCRUED FEDERAL INCOME TAXES					
TOTAL						ACCRUED STATE INCOME TAXES					
ADMINISTRATIVE AND GENERAL EXPENSES						TOTAL					
OFFICERS' SALARIES						NET PROFIT OR LOSS CARRIED TO SURPLUS					
OTHER SALARIES											
RENT											
NOTES AND ACCOUNTS CHARGED OFF											
DEPRECIATION (NOT APPLICABLE ELSEWHERE)											
TOTAL						AMOUNT OF DIVIDENDS DECLARED AND/OR PAID SINCE STATEMENT DATE					

RECONCILIATION OF EARNED SURPLUS

EARNED SURPLUS AT CLOSE OF PREVIOUS FISCAL YEAR					
ADD: NET PROFITS (FROM PROFIT & LOSS STATEMENT)					
OTHER ADDITIONS (ITEMIZE)					
TOTAL ADDITIONS					
LESS: DIVIDENDS PAID					
CASH—PREFERRED, RATE ___%					
—COMMON, RATE ___%					
STOCK—PREFERRED ___ RATE					
—COMMON ___ RATE					
OTHER DEDUCTIONS (ITEMIZE)					
TOTAL DEDUCTIONS					
EARNED SURPLUS AT END OF PERIOD (SEE BALANCE SHEET)					

RECONCILIATION OF CAPITAL SURPLUS

CAPITAL SURPLUS AT CLOSE OF PREVIOUS FISCAL YEAR					
ADDITIONS (ITEMIZE)					
TOTAL ADDITIONS					
DEDUCTIONS (ITEMIZE)					
TOTAL DEDUCTIONS					
CAPITAL SURPLUS AT END OF PERIOD (SEE BALANCE SHEET)					

WAS AN AUDIT MADE? _____ NAME OF INDEPENDENT ACCOUNTANTS? _____

THE FISCAL PERIOD OF THIS CORPORATION CLOSES ON THE _____ DAY OF _____

BANK ACCOUNTS

NAME AND LOCATION OF BANKS	CASH BALANCE	CREDIT LINES	AMOUNT OF LOANS	ON WHAT BASIS? (ENDORSEMENTS, RECEIVABLES COLLATERAL, ETC.)
	$	$	$	

Fig. 6B.—Corporation Form Continued (Page 2).

NOTES AND TRADE ACCEPTANCES RECEIVABLE
—Customers Only (excluding those from affiliates)

NOT DUE			
RENEWED			
PAST DUE AND PROTESTED			
TOTAL NOTES AND TRADE ACCEPTANCES RECEIVABLE			
LESS: RESERVE FOR DOUBTFUL			
NOTES AND TRADE ACCEPTANCES RECEIVABLE—NET			
AMOUNT CONSIDERED OF SLOW COLLECTION			
AMOUNT CONSIDERED OF DOUBTFUL COLLECTION			

ACCOUNTS RECEIVABLE
—Customers Only (excluding those from affiliates)

ACCOUNTS CHARGED WITHIN:			
30 DAYS			
31 TO 60 DAYS			
61 TO 90 DAYS			
3 TO 6 MONTHS			
OVER 6 MONTHS			
TOTAL ACCOUNTS RECEIVABLE			
LESS: RESERVE FOR DOUBTFUL ACCOUNTS			
ACCOUNTS RECEIVABLE—NET			
AMOUNT OF ACCOUNTS CONSIDERED DOUBTFUL			
SELLING TERMS			

MERCHANDISE

MERCHANDISE ON HAND			
" CONSIGNED TO OTHERS			
" IN TRANSIT			
TOTAL			
LESS: RESERVES (IF ANY)			
TOTAL AS PER STATEMENT			

1. AMOUNT OF MERCHANDISE PLEDGED
2. IS MERCHANDISE CONSIGNED TO YOU INCLUDED IN ASSETS?
3. AT WHAT TIME OF YEAR IS INVENTORY HIGHEST? LOWEST?
4. AVERAGE AMOUNT OF INVENTORY
5. DOES INVENTORY REPRESENT PHYSICAL COUNT? WHEN TAKEN?
6. DESCRIBE IN DETAIL THE BASIS OF VALUATION
7. STATE THE EXTENT OF ACCOUNTANTS' VERIFICATION, IF ANY
8. GIVE DATE (OR DATES) ON WHICH INVENTORY IS TAKEN AND BOOKS ARE CLOSED

SECURITIES OWNED

FACE VALUE (BONDS) NUMBER OF SHARES (STOCKS)	PERCENT OF TOTAL ISSUE	DESCRIPTION OF SECURITY	COST	PRESENT BOOK VALUE	MARKET VALUE	INCOME RECEIVED LAST YEAR	TO WHOM PLEDGED
			$	$	$	$	

ARE ALL SECURITIES OWNED REGISTERED IN THE NAME OF THE CORPORATION?

DUE FROM SUBSIDIARIES AND AFFILIATES

NAME OF CONCERN	LOCATION	FOR ADVANCES	WHEN DUE	FOR MERCHANDISE	TERMS
		$		$	

REAL ESTATE

	LOCATION AND DESCRIPTION	AGE	CONDITION	COST WITH IMPROVEMENTS	ASSESSED VALUE
1				$	$
2					
3					
4					
5					

	FIRE INSURANCE	ESTIMATED PRESENT VALUE	MORTGAGE AMOUNT	MORTGAGE MATURITY	MORTGAGEE	USED IN BUSINESS?	YEARLY GROSS RENTAL INCOME
1	$	$	$				$
2							
3							
4							
5							

THE LEGAL AND EQUITABLE TITLE TO ALL THE REAL ESTATE LISTED ABOVE IS SOLELY IN THE CORPORATION'S NAME, EXCEPT AS FOLLOWS:

IF BOOK VALUE (BEFORE DEPRECIATION RESERVES) HAS DECREASED DURING THE YEAR, STATE REASON

LIFE INSURANCE

NAME OF PERSON INSURED	TYPE OF POLICY	FACE AMOUNT OF POLICY	TOTAL CASH SURRENDER VALUE	TOTAL LOANS AGAINST POLICY	TO WHOM POLICY IS ASSIGNED
		$	$	$	

Fig. 6C.—Corporation Form Continued (Page 3).

BOND ISSUES (describe each issue separately)

DESCRIPTION OF ASSETS (INCLUDING CURRENT ASSETS, IF ANY) PLEDGED TO SECURE BOND ISSUES:

SUMMARY OF INDENTURE PROVISIONS, INCLUDING SINKING FUND REQUIREMENTS:

THERE ARE NO DEFAULTS IN CONNECTION WITH ANY OF THE PROVISIONS OF THE INDENTURE(S), EXCEPT AS FOLLOWS:

NAME AND ADDRESS OF TRUSTEE(S):

CAPITAL STOCK

PREFERRED ____ % PAR VALUE $____ CUMULATIVE?____

AUTHORIZED $____

UNISSUED $____

OUTSTANDING $____

COMMON: PAR VALUE $____

AUTHORIZED $____

UNISSUED $____

OUTSTANDING $____

COMMON: NO PAR VALUE—SHARES OUTSTANDING____

SUMMARY OF PREFERRED STOCK PROVISIONS:

VOTING POWERS OF PREFERRED STOCKHOLDERS:

AMOUNT OF PREFERRED STOCK DIVIDENDS ACCUMULATED AND UNPAID $____, REPRESENTING A PERIOD OF____

LIABILITY INSURANCE (automobile, truck, general public liability, etc.)

NAME AND ADDRESS OF INSURANCE COMPANY	TYPE OF POLICY	AMOUNT OF COVERAGE: PERSONAL INJURY, ETC.	AMOUNT OF COVERAGE: PROPERTY DAMAGE	EXPIRATION DATE
		$	$	

OTHER INSURANCE

FORM	CARRIED ON	NATURE	ASSIGNEE	AMOUNT
FIRE	MERCHANDISE			$
"	BUILDINGS			
"	MACHINERY AND EQUIPMENT			
	FURNITURE AND FIXTURES			
	TRUCKS, AUTOS, WAGONS, ETC.			
CREDIT	ACCOUNTS AND NOTES RECEIVABLE			
USE AND OCCUPANCY				
FIDELITY BONDS				
OTHER				

OFFICERS

	NAME IN FULL	NUMBER OF SHARES HELD: PREFERRED	NUMBER OF SHARES HELD: COMMON	ANNUAL COMPENSATION	ADDRESS
PRESIDENT				$	
VICE-PRES.					
VICE-PRES.					
SECRETARY					
TREASURER					

DIRECTORS

NAMES IN FULL	NUMBER OF SHARES HELD: PREFERRED	NUMBER OF SHARES HELD: COMMON	ANNUAL COMPENSATION	ADDRESS
			$	

IN SUBMITTING THE FOREGOING STATEMENT THE UNDERSIGNED GUARANTEES ITS ACCURACY WITH THE INTENT THAT IT BE RELIED UPON BY THE AFORESAID BANK IN EXTENDING CREDIT TO THE UNDERSIGNED AND WARRANTS THAT____HAS NOT KNOWINGLY WITHHELD ANY INFORMATION THAT MIGHT AFFECT____ CREDIT RISK; AND THE UNDERSIGNED EXPRESSLY AGREES TO NOTIFY IMMEDIATELY SAID BANK IN WRITING OF ANY MATERIAL CHANGE IN____FINANCIAL CONDITION WHETHER APPLICATION FOR FURTHER CREDIT IS MADE OR NOT AND IN THE ABSENCE OF SUCH WRITTEN NOTICE IT IS EXPRESSLY AGREED THAT SAID BANK IN GRANTING NEW OR CONTINUING CREDIT MAY RELY ON THIS STATEMENT AS HAVING THE SAME FORCE AND EFFECT AS IF DELIVERED UPON THE DATE ADDITIONAL CREDIT IS REQUESTED OR EXISTING CREDIT EXTENDED OR CONTINUED.

SIGNATURE OF CORPORATION

SIGNED AT____

OFFICER

THIS____DAY OF____19____

TITLE

SMC 141-7-1940

Fig. 6D.—Corporation Form Continued (Page 4).

reader against sales, is as satisfactory a basis as can be hoped for. With a record of former collections to show the rapidity with which such accounts had been liquidated in the past, a schedule showing the accounts not due and classifying accounts past due according to the length of time past due should be of value. Good accounts receivable with such a basis for estimating their collectibility ought to be of special assistance to a business seeking bank credit. Possibly in some cases a business resorting to a finance company (that is, lenders on pledged receivables) and paying a high rate of return might, with the presentation of sufficient data of this sort, be able to utilize the less costly credit of the banker.

The executive will also be interested in having a list of new customers. A list of old customers who have made no recent purchases might lead to a fruitful inquiry. Other facts about the customers' receivables which would be useful are the percentage of collection expense and the percentage of loss from bad debts.

Inventories. The questions most frequently asked about the inventories are made to determine (*a*) whether the value of the stock was obtained by actual physical count or merely by estimate, (*b*) the basis of valuation, (*c*) the average amount carried, and (*d*) whether any goods on hand are the property of others. Thus, goods on consignment have to be watched for in some lines of business. In the automobile trade, cars may be held under trust receipts giving title to certain creditors—a device used to secure financing. In this line of business, a creditor might also ask for a division between new and second-hand car inventory.

Where the information is being made available for a skilled eye, a detailed schedule of the inventory will serve to bring out the nature of the goods held and their utility as a basis for credit. It is desirable, wherever possible, to watch for goods that are likely to be shopworn, out of date, in broken lots, or for other reasons difficult to sell. It may be possible to learn what policy the business pursues in closing out old or seasonal goods. The special attention given to the two assets, receivables and inventories, is justified because they usually constitute the bulk of the current assets.

Investments. A detailed schedule of investments is of use in checking the value of that asset, and should be available if the item is large enough to be important. In any case, the nature of these outside investments indicates something of the degree

of conservatism of the management. The Federal Reserve Bank of New York in a communication to member banks on financial statements states: [2]

> A detailed list is usually required, showing number of shares, name of company, type of security, etc. In the case of stocks and bonds listed on a recognized stock exchange, market value can be determined from this information, but if the statement includes the stock of local companies a recent statement of each company and information as to the total number of shares outstanding should be furnished.

Three weaknesses may be encountered from time to time in this asset: the investments may be (1) of a speculative sort, such as stocks in enterprises that are in the promotion stage; (2) difficult to market, particularly where the securities are those of local enterprises; or (3) unprofitable, especially dangerous where in weak affiliated or subsidiary concerns, which may call for additional capital to save what has already been invested.

Liens. In examining the liabilities, the most likely error is the omission of any mention of liens, or pledged assets. Where any debts are secured by a lien on any of the assets, a question should bring out the amount of the secured debt and the particular assets which are pledged. The maker of the statement may be asked whether any of his accounts receivable or notes have been pledged or sold to banks, finance companies, or others, and for what amount. Inquiry should be made to ascertain whether receivables are ever pledged, since it is possible that a balance sheet might be made up at a season when there were no such borrowings. Creditors with no information except the statement made up at such a time would form a wrong impression of the situation. Where it is likely that purchases may be made on the installment plan, care should be taken to inquire if the full liability for unpaid installments has been properly included in the list of debts.

The credit man who is interested chiefly in debtors in a single city can frequently get the necessary information from some local credit agency. A credit investigator will examine the county clerk's records for recorded liens and will also find out whether there are any unpaid property taxes. Agencies interested in supplying credit information often put out a daily sheet which records such matters as court actions, judgments filed, mechanics' liens, mortgages filed and discharged, deeds, and

[2] Circular No. 1340, Jan. 19, 1934.

conditional sales where the law requires filing. These keep one informed of sudden liabilities or liens that might change the status of the liabilities of local debtors.

Other information about liabilities. In some instances, the liabilities are unusually large or small because of the seasonal factor. If such conditions are treated as normal, the reading of the statement may lead to unsound conclusions. The months in which the accounts payable are at their maximum and minimum and the amounts at such times should be requested. (The effect of seasonal expansion of credit can be approximated along the lines suggested on page 61.) Concerns impressed with the desirability of showing a low debt and small inventory sometimes make unusual efforts to avoid all possible deliveries of incoming merchandise just before statement dates. Should the accounts payable appear unduly small after an allowance for the seasonal factor, and a possibility of a poor accounting exists, two questions may be raised: (1) Have the accounts payable been subtracted from the accounts receivable, and does the latter state a net amount? (2) Have all the accounts owing for goods that are now on hand been included under the caption "Accounts Payable"?

In the study of the funded or long-term indebtedness, the date or dates of maturity should be learned. The provisions for retirement of such debt may also be significant. If a sinking fund is required by the terms made at the time the debt was incurred, a check should be made to see if the fund has been properly provided.

Insurance. While the asset values are being scrutinized, it should not be forgotten that the insurance protection which safeguards them is also a matter of the first importance. It has become customary to include a fire insurance policy among the papers that go with a real estate mortgage, for the protection of the mortgagee. Although the current creditors seldom have a lien on the inventory, it is equally important that they be protected in case of fire loss. In the event of a serious fire, the inventory is worth no more to the creditors than the face of the policy that covers it. It is important, therefore, that the coverage be adequate. Inadequate insurance is sometimes regarded as a sign of possible inventory overvaluation.

In some few cases, large corporations provide their own insurance fund. This practice is called *self-insurance.* An amount is set up as a reserve for insurance, and sometimes the cash itself

is set aside and invested in a reserve fund. Such a policy can be regarded as a satisfactory substitute only where the properties of the company are numerous and so separated that a conflagration could not sweep a group. No single property should be of such considerable value in relation to the whole that its loss would seriously embarrass the company.

Some enterprises have protected themselves not only against the possible loss of their physical assets, but also against the contingency of the removal by death of persons vital to the organization's continued success. Life insurance may be taken out in favor of the business on the life of a manager, a director, or an inventor whose loss would seriously weaken the business. In a few somewhat unusual cases, a debt has been provided for by taking an endowment insurance policy on the life of one or more of the particularly important persons in the organization. In case of a death, a fund is available to retire the debt; in case no death occurs and the debt runs till the end of the endowment period, the proceeds of the maturing insurance policy provide the necessary money. The credit of partnerships has been saved at times by life insurance when the death of one of the partners might have seriously impaired confidence in the credit standing of the business.

Credit insurance provides indemnity for wholesalers, jobbers, and manufacturers against unusual losses due to the failure of their customers to meet their obligations. The policy protects only against (1) losses that are above the so-called normal or expected loss, usually expressed as a percentage of gross sales; and (2) losses occurring when the credits have been extended to debtors with a proper credit rating and for amounts that are not excessive.

The total liability of the credit insurance company may be limited to a certain amount, or it may be unlimited, provided, of course, that each of the individual losses is one which falls within the terms of the policy. Such protection is equivalent to a contingent reserve fund and gives an established value to the accounts receivable, with consequent protection to creditors and investors if the company taking out the insurance always limits itself in the extension of credits to concerns properly rated for the line of credit granted.

Whether a concern should take out credit insurance is a question of whether self-insurance is wise or unwise at this point. Ordinarily, it will be cheaper to set up a reserve for bad debts

and care for one's own losses. Only those business houses whose loss ratios are extremely variable, either because they sell to a very limited number of customers or because their customers are very susceptible to a period of business depression, will find their losses sufficiently unpredictable to warrant this type of insurance.[3]

Special forms of insurance are also vital in caring for emergencies that might otherwise sweep a business into bankruptcy. In this class would fall employers' liability and workmen's compensation insurance, protecting against the claims of injured employees. Similarly, public liability protection will meet those claims which might arise in the form of a heavy judgment for damages, where injuries have been sustained in such a way as to make the business liable. Automobile insurance to cover public liability and property damage by cars used in the business, and fidelity bonds, where it is possible for unfaithful employees to abscond with large amounts, may be necessary. Adequate insurance from the creditors' point of view is protection against all those hazards which might suddenly remove asset values or create liabilities that would render the business insolvent.

Hedges. Closely allied to insurance is the "hedging" against fluctuations in the value of inventory in certain lines of business. "Hedges," or "future contracts," are possible for some textile mills and flour mills. Future contracts of this sort are to be had only in certain staple commodities, like cotton, wheat, and corn, which are traded in on the exchanges. A mill using short staple cotton can engage, for example, in a speculative contract agreeing to sell cotton at a future date for a certain price at the same time that it buys cotton for manufacture. The price of the mill's product will fluctuate closely with the price of cotton, and any loss which might result from a downward price movement during the interval between the purchase of the cotton and the sale of the completed cloth would be approximately offset by the profit on the speculative "short" contract, and vice versa. If the cotton were but a minor element in the cost of producing the cloth, the hedge might not be used.[4]

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[3] Chapter XXIX of Ettinger, R. P., and Golieb, D. E., *Credits and Collections* (rev. ed., 1929) is devoted to a full discussion of credit insurance. New policy forms have been written that are designed to meet some of the objections given by these writers.

[4] Disagreement as to the merits of hedging do exist. General Baking Company, for example, does not follow the practice of hedging its flour and sugar purchases. The management believes that over a period of years the carrying charges on

Contingent liabilities. Insurance protects both creditors and owners against the loss of assets through hazards largely beyond the control of the management. The business itself may give rise to certain losses contingent upon the failure of others to meet their obligations. Inquiry should be made about contingent liabilities which may have been incurred by the concern's having acted as an indorser or guarantor of the paper of others, or having sold or discounted accounts or notes receivable or having assigned them with the indorsement or guaranty of the business. Businessmen on occasion indorse the paper of others as a matter of accommodation—a dangerous and generally an undesirable practice.

Where a note or acceptance of a customer has been disposed of, it is important to keep the contingent liability in sight until the item has matured. Contingent liability on discounted notes is particularly important in the case of houses engaged in exporting, which, after drawing on their foreign customers, discount the drafts. Some of these houses have been very seriously embarrassed when their contingent liabilities became actual.

In domestic trade, the case of H. B. Claflin Company has become almost classic in credit circles. The Claflin Company was a wholesale dry goods house, whose owner held a controlling interest in more than a score of retail houses. Notes from these retail houses were indorsed and discounted with banks throughout the country. Statements of the wholesale house were given out, but, so far as can be learned, no information was available with regard to the amount of contingent liability. More important, perhaps, was the difficulty of learning the condition of the retail stores. The statement shown on the next page was published January, 1913, showing an apparently good condition. When statements were prepared showing the status of the 23 companies which had executed notes later indorsed by H. B. Claflin Company, there were shown liabilities of $34,089,758, of which $31,157,710 were "notes discounted by H. B. Claflin Company," against total assets of $14,822,865. A considerable portion of the notes did not represent merchandise purchases, but were evidently used to finance the purchase of the stores.

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such operations offset the advantages except in periods of unusual price fluctuations. (Standard Statistics Annual Report Card, Feb. 8, 1934.) The exceptional periods are usually regarded as sufficient justification for hedging. In flour milling, the customary practice is to hedge grain on hand, cash grain purchases, and unfilled flour sales orders in the market for grain futures.

Contingent liability may arise from the indorsement or guaranty of other than short-term credit instruments. Particularly among larger corporations, it is not unusual to find the bonds or the preferred stock of an allied or subsidiary corporation guaranteed. In the case of some subsidiary companies, this device may be necessary to market the securities in question. Generally,

H. B. CLAFLIN COMPANY

COMPARATIVE BALANCE SHEET

As of December 31

Assets:	1913	1912
Cash	$ 2,794,562	$ 2,417,603
Dividends	152,187	152,187
Bills Receivable	2,102,862	2,078,782
Open Accounts	2,009,289	1,803,366
Merchandise	5,821,749	6,717,407
Store Property	2,739,182	2,739,182
Stable	27,197	27,197
Horses, Trucks, etc.	69,688	69,688
Total	$15,716,715	$16,005,411
Liabilities:		
First Preferred Stock	$ 2,600,300	$ 2,600,300
Second Preferred Stock	2,570,600	2,570,600
Common Stock	3,829,100	3,829,100
Open Accounts	4,501,487	4,778,882
Foreign Exchange, etc.	269,500	294,000
Surplus Reserve	1,683,474	1,647,336
Profits During Fall	262,254	285,194
Total	$15,716,715	$16,005,411

this responsibility is thought of for the first time when the evil day of default arrives.

Contracts and unfilled orders. Long-term contracts sometimes are in effect guaranties, and are important in a consideration of the future of the corporation. Thus an expensive office building may be erected by a realty corporation organized and owned by a parent company. The parent company may then make a long-term lease for all, or a considerable portion, of the building. This is, of course, a contract of a definite nature, rather than a contingent liability. The assumed rental is as much a fixed charge as bond interest, but no liability appears in the balance sheet of the parent company.

Another type of contract to be looked for, most frequently in the case of the manufacturer, is the unfilled order. Accepted

orders for goods are to be carefully looked into in times of violent price change, when they may result in either severe losses or considerable profits. The converse situation is found in contracts made for the purchase of materials and supplies. Whenever prices rise for any considerable time, there are likely to be overzealous persons who will tie themselves up with contracts that result in losses in later price reactions. The postwar boom of 1920 provided many examples. Some tire manufacturers contracted for rubber for a considerable period. Their experience was disastrous.[5]

Sales analysis. Just as the study of the balance sheet may be supplemented, so there are possibilities for supplementing the income statement. Details in regard to the earnings are available, as a rule, only to those managing the operations. When the results will justify the cost of securing the same, the statement of profit and loss may be subdivided so as to permit the scrutiny of the enterprise by branches, departments, geographical divisions, salesmen, and kinds of product. Analysis of this sort is less costly and easier to obtain than formerly, what with the use of mechanical devices for calculation and tabulation.

The object of such study is to discover weaknesses that may be eliminated. Unprofitable departments or lines of goods, except where special circumstances exist, should either be made to pay or be dropped. Some salesmen will be devoting their efforts to the sale of lines where there is little or no profit unless the profitableness of their orders is watched. Where the salesman is a factor in the matter of credit granting, the collection expense and bad debts loss on his sales are of interest.

Production costs. The proper analysis of production costs is another auxiliary to the statement of earnings which is normally available only to the management. Production is essentially of two sorts:

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[5] On February 14, 1921, a meeting of the stockholders of the Goodyear Tire & Rubber Company was called to authorize a plan of adjustment of debt and capitalization. The deficiency was caused by contracts for buying raw materials to cover anticipated sales, which were approximately $45,000,000 below the estimated amount ($250,000,000). Some temporary relief had been afforded by loans from banks.

After the rapid decline in commodity prices beginning in the fall of 1937, the New York Stock Exchange suggested to corporations with listed securities that they advise stockholders whether or not their practice was to enter into commitments for the future purchase of raw materials. Weissman, Rudolph L., *The New Wall Street* (New York: Harper & Bros., 1939), pp. 106–107.

1. Where it consists of a single uniform product.
2. Where there is a diversity of product, owing to differences in size, model, style, or nature.

For production of the first class, an analysis of costs is relatively simple. By dividing each figure of the profit and loss statement by the number of units sold, a second column of figures may be had with the data for the period on a "per unit of product sold" basis. The selling price, cost of goods sold, and various expenses are stated on a per unit basis. When a supplementary schedule is made up stating production costs, the per unit cost of production may be had in a similar manner, in detail, for each item of expense. The resulting per unit figures are in a form which makes them readily comparable with data for other concerns or with the experience of the same plant in preceding periods. In the manner described, "per ton of coal" figures might be prepared for a coal mine or "per yard of cloth" figures for a textile mill producing one uniform grade of duck or sheeting.

A more difficult problem arises when there is a variety of products requiring the division of various indirect expenses among them. A producer of a variety of rubber specialties, a manufacturer of machines or castings of different sorts, or a printer taking jobs which are almost infinitely various, each has this problem. The raw material and labor directly applied to it may be kept account of; but how shall the indirect expenses or overhead, such as depreciation of machinery, light and power, rent, and indirect labor, such as janitor service or superintendence, be divided among the several jobs? The work of correctly distributing these indirect expenses is the central problem of cost accounting. This kind of accounting is distinct from but supplementary to general accounting, sometimes called *financial accounting,* from which the ordinary financial statements discussed in this book are prepared. Cost accounting should also be distinguished from cost finding, which is done by estimate—often expertly arrived at by engineers and factory men—but not based on detailed cost accounts which definitely distribute all the expenses of production over the products of the period.

Cost accounting is a subject beyond the scope of this work, but it is likely to be vital to the executive aiming to secure profitable results. The absence or improper keeping of cost records may explain a concern's poor profits or constitute a serious source of

weakness. A number of companies have lost profitable business by overestimating certain costs and demanding excessive prices for certain products, and at the same time have taken other business which improper records failed to show as unprofitable. Where business of both sorts is obtained and the results mingled, the actual situation may be obscured until alert competitors have acquired the profitable lines and only the below-cost-of-production business remains.

Selling and administrative expenses. An effective analysis of selling and administrative expenses may be as fruitful as a study of production costs. It is being realized of late that these expenses can be allocated in some cases just as production costs are. The marketing of some articles or lines of product will entail greater effort and expense, which is just as significant in profit and loss as is the greater production cost of some articles. A salad dressing will cost more to market than sugar; a newly patented article more than a well-known standard article. The management must consider the cost of manufacturing as but one element in a series of costs which are necessary to put the product in the hands of the customer at the time and the place that economic demand exists. Any attempt to go deeply into the subject would involve the whole field of cost accounting, which is outside our province. A study of the principles that operate in this field will be found of general value to the analyst who has the opportunity to make such a study.

Business history or "antecedents." In addition to the strictly financial information, a report on a business may contain historical information or pertinent facts about current conditions. A mercantile agency reporting on a business will record past failures and fire losses. Such facts are sought because of the frequency of fraudulent or swindling failures and of fires deliberately set in order to conceal fraud or to rob the insurance company. People who have undesirable antecedents of this sort usually refuse to make statements regarding their previous record. Other facts, such as changes in the ownership, management, and form of organization will be given. Questions may be asked to determine the experience and probable qualifications of the controlling parties. In the case of a sole proprietor or of partners, inquiries may be made as to age, length of service with the business, and previous experience. Similarly, in a corporation, the record of the chief officers is examined and the identity of controlling stockholders looked into. Sometimes the social

and outside activities of these parties are checked to explain heavy withdrawals by the proprietors or an overgenerous dividend policy.

Priorities, allocations, and defense. During a period of war or active defense preparations, repercussions upon the particular business are significant in the analysis of financial outlook. The whole near-term future of a concern may depend upon its ability to obtain necessary priority for, or allocation of, essential raw materials to conduct operations. For a concern that is indebted, inability to continue operations may spell bankruptcy.

Loans to concerns that are producing for defense purposes fall in a distinct category and require special analysis. The lender must know whether the prospective borrower (1) has a knowledge of processes and methods, (2) has ability to make accurate cost estimates, (3) has suitable facilities and labor supply, (4) can obtain needed materials with sufficient promptness, and (5) can arrange satisfactory subcontracts where necessary.[6] Such considerations may radically alter a banker's estimate of a former borrower and make reliance upon past balance sheets and income accounts extremely dangerous.

Independent audits. For the purpose of insuring reliable statements, it is the growing custom to secure outside verification of the financial statements. This work belongs to the auditor, or public accountant, who, because of his training and independent position, is expected to see that correct principles are employed and honest results shown. It is often found that the usefulness of statements is impaired by the presence of terms that are vague in meaning or too technical to be understood by the general reader. The auditor should remember that his work is not serving his client properly if the element of clearness has been neglected.

The fact that the auditor has done his work is shown by his certificate attached to his report to the executives. If the report is published, the certificate will generally be given with the statements. If it is known that an audit has been made, but only an uncertified report is published, the reason should be sought.

A standard form of certificate for reports involving no qualifications has been approved by the American Institute of Account-

[6] See Bower, Marvin, "Defense Loan Pitfalls for Bankers," *Barron's*, May 5, 1941, p. 9; Sawin, B. F., "Defense Lending," *The Burroughs Clearing House*, March, 1941, p. 11.

ants and, subsequently, by the New York State Society of Certified Public Accountants:

To the Board of Directors (or Stockholders) of the X Y Z Company:

We have examined the balance sheet of the X Y Z Company as of April 30, 1939, and the statements of income and surplus for the fiscal year then ended, have reviewed the system of internal control and the accounting procedures of the company, and have examined or tested the accounting records of the company and other supporting evidence, by methods and to the extent we deemed appropriate.

In our opinion, the accompanying balance sheet and related statements of income and surplus present fairly the position of the X Y Z Company at April 30, 1939, and the results of its operations for the fiscal year, and conform to generally accepted accounting principles applied on a basis consistent with the preceding year.

Signed.....

If circumstances make it necessary, as when the audit has not been in detail or the auditors do not feel it proper to give their unqualified approval of the report, the certificate will contain all the essential reservations and qualifications. If the report has been prepared for the use of the executives, it may have some comments on the figures presented which are likely to be of assistance in interpretation.

The more frequent reasons for qualifications are those occasioned by:

1) Restrictions placed on the scope of the audit;
2) Changes in accounting methods from the preceding period;
3) Departure from recognized and customary accounting principles;
4) Unusual items and situations.

The objective of the accountant should be a report that is as informative as possible within the limits set by accepted accounting principles. The analyst will read the certificate carefully for such light as it may throw upon the financial statements.

If the accounting profession wishes the public to attach importance to its work, accountants must refuse to certify to statements which are rendered meaningless by qualifications or by accounts that conceal vital information. The experience of an important and reputable public accounting concern that had the misfortune to accept from the dishonest officers of a large corporation the customary certificate as to quantity and value of inventories will undoubtedly serve to make accountants more vigilant than ever.

If the auditors believe that misleading excerpts might be made from their reports or that their qualifying comment is essential in interpretation, they may insert some statement such as the following:

> Our reports and certificates are issued with the understanding that, if published, either they must be reproduced in their entirety, or, should it be desired to publish any references to, or extracts from them, such references or extracts shall be submitted for our approval.

Forms for credit analysis. The statement information will be received by the credit man in various forms: sometimes on his own forms, again as a credit agency report, and at other times just as the statements have been prepared by an outside auditor. The work of analysis will be facilitated by a recopy upon a special form. The advantages will be not only in uniformity, but also in increased ease of comparison with figures for other years, the possibility of adding ratios to the form, and the greater ease in handling. Original statements will, of course, be retained for reference. The actual form to be adopted will depend upon the characteristics of the statements generally received, and so the accompanying form is suggestive rather than final. Unlike a form being sent out, there is no need for completeness. Unusual items such as Advances to or Investments in Subsidiaries, Loans to Officers, Goodwill, and Loans from Finance Companies can be written in the blank spaces whenever they are significant amounts. (Room should be left in each section, although omitted in the accompanying form to economize space.) Very minor items can be lumped together as Miscellaneous in the proper section of the balance sheet. Only the most essential ratios are suggested here. Others found to be useful can be added, such as (*a*) fixed asset turnover, (*b*) current debt turnover, (*c*) gross and net profit margins, and (*d*) per cent earned on net worth. The reverse side of this summary record sheet or card can be used for miscellaneous information received from time to time, such as ledger interchange experience, and for unusual points noted in the study of the statements.[7]

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[7] For the reader interested in illustrative analyses, some sources are: (1) Chapin, A. F., *Credit and Collection Principles and Practices,* pp. 330–333; (2) Kavanaugh, T. S., *Bank Credit Methods and Practices* (3rd ed., 1924), pp. 145–175, 200–202; (3) Myer, John N., *Financial Statement Analysis,* (New York: Prentice-Hall, Inc., 1941), pp. 172–184; (4) Schwulst, E. B., *Extension of Bank Credit* (Boston: Houghton, Mifflin, 1927), pp. 287–353; (5) Strain, Myron, *Industrial Balance Sheets;* (6) Wall, A., and Duning, R. W., *Ratio Analysis of Financial Statements,* pp. 187–349; and (7) Young, Robert, *Industrial Credits* (New York: Harper and Brothers, 1927), pp. 128–133, 143–148, 269–542.

FORM FOR CONDENSING STATEMENTS FOR BANK CREDIT FILE

Name_____ Address_____
Business_____

Assets	19—	19—	19—	19—	19—	19—	19—
Cash on Hand							
Cash in Bank							
Accounts Receivable (net)							
Notes Receivable (net)							
Marketable Securities							
Current Assets (excl. mdse.)							
Inventories							
Total Current Assets							
Land							
Buildings (net)							
Furniture and Equipment (net)							
Prepaid Expenses							
Total Assets							
Liabilities and Net Worth							
Accounts Payable							
Notes Payable—Mdse.							
Notes Payable—Bank							
Accrued Expenses							
Total Current Liabilities							
Bonds Payable							
Total Liabilities							
Capital Stock							
Surplus							
Total Liabilities and Net Worth							
Working Capital							
Contingent Liabilities							
Maximum Current Debt in Year							
Minimum Current Debt in Year							
Average Bank Balance							
Reserves Deducted from Assets:							
From Receivables							
From Buildings							
From Furniture and Equipment							
Net Sales							
Net Profits							
Dividends							
Ratios:							
Curr. Assets: Curr. Liab.							
Curr. Assets (excl. mdse.): Curr. Liab.							
Receivables: Aver. Daily Cr. Sales							
Inventory Turnover							
Total Tangible Assets: Total Debt							

"Standard" ratios. In summarizing the material for credit study, a reference to "standard" ratios is appropriate. By gathering a large number of statements in a single line of business, certain average (arithmetic mean) or very common (modal) ratios may be found which will be representative. These figures are sometimes regarded as a "standard," variation from which in an unfavorable direction is regarded as a sign of weakness. Knowledge of existing ratios is helpful, and those who have emphasized ratio study have been responsible for much of the existing concrete material on the subject; but the use of "standards" as an ideal comes dangerously close to making analysis a mechanical process. Reasonable differences among businesses are often explainable in a way that need not be unfavorable, much less fatal, to some of the concerns with below-standard ratios. On the one hand, the "standard" ratio may represent unnecessary strength; on the other, it may show a weak condition for the group as a whole. These opposite possibilities mean that a supply of facts does not remove the need for judgment as to what constitutes a sound credit risk. From time to time, judgment will require a modification of requirements to allow for changes in conditions within the industry or in the general state of business.

The most ingenious application of the standard ratio idea is undoubtedly the "index of credit strength" proposed by Wall and Duning. The ratios of a given business are compared with the standard ratios for that type of business, and the resulting percentages are then weighted and combined into a single index, which is intended as a measure of the deviation from par in credit strength.[8] The method is subject to all of the difficulties attending the use of standard ratios already mentioned and the further one that the weight which should be accorded any particular ratio is necessarily variable. If a single fault is bad enough, the apparently favorable appearance of other ratios is an insufficient offset, even though it may be more than enough to cover up the fault in a composite index of arbitrarily weighted factors.

An illustration is found in the case of an installment clothing store. The statements furnished by this concern showed a very satisfactory current ratio, acid test, inventory turnover, net profit

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[8] Wall, A., and Duning, R. W., *Ratio Analysis of Financial Statements* (1928), Chaps. X and XI.

margin, and ratio of net worth to debt. The only major disproportion was due to a high ratio of receivables to sales. These balances were at least four times what would have been expected in view of the credit terms. The indication of uncollectible accounts and overstated profits was unmistakable. In time, the cash from a sale of stock to the public was absorbed by this "expansion" and the business went into receivership. As in a case of crime detection, the one clue was sufficient. The weighting accorded the several elements in the credit or investment picture varies from case to case, and judgment must be exercised in making these shifting weightings of the numerous variables involved.

Investment analysis materials. Whereas financial analysis for credit purposes is largely a study in solvency, investment analysis subjects the statements to scrutiny for the possible light thrown upon earning power as well. While different types of business will offer differing problems, the tentative outline of the points generally studied is shown on the following page.

The material suggested in this tentative outline might be added to as it suits the analyst. Suggestions for various other fruitful relationships have been offered in preceding chapters and also appear in the discussion of special types of business in succeeding chapters. In particular cases, it might be of interest to include operating statistics as to output and the like, a picture of capital structure with stocks at market valuation rather than book values, or book value of the common stock broken up into net current and other assets per share. Additional ratios might also be added.[9]

Where certain nonfinancial factors of importance are found with sufficient frequency, they may be included on any form used, in order to insure their consideration. Such factors might be diversification of markets, labor relations, favorable plant location, and the like.

If but a single security were under scrutiny, some of the material suggested could be omitted. Thus, a bond of a stable enter-

[9] Other material on form and content may be found in (1) Badger, R. E., and Guthmann, H. G., *Investment Principles and Practices* (New York: Prentice-Hall, Inc., 3rd ed., 1941), pp. 332–341; (2) Bliss, J. H., *Financial and Operating Ratios in Management* (New York: Ronald Press, 1923), pp. 192–199; (3) Graham, Benjamin, and Dodd, D. L., *Security Analysis* (New York: McGraw-Hill Book Co., 2nd ed., 1940), pp. 669, 675, 680; (4) Moody's *Manual of Investments* (financial and operating ratios are given in the Special Feature section) and (5) *Standard Individual Corporation Descriptions* (Standard & Poor's Corporation).

prise with ample safety margin does not require the careful study of financial data that a speculative bond or a common stock would. Furthermore, the sums being invested will determine the amount of time and effort which can be devoted profitably to the study. Were the commitment sufficiently large, a field survey might even be undertaken to study operating conditions

SHORT OUTLINE FOR INVESTMENT ANALYSIS

Name of business———————————————

	19—	19—	19—	19—	19—
I. Working Capital Position:					
Current Assets					
Current Liabilities					
Working Capital					
Current Ratio					
Near-Term Bond Maturities					
II. Net Assets:					
Working Capital					
Fixed Operating Assets					
Nonoperating Investments					
Intangibles					
Total					
III. Capital Structure:					
Bonds					
Preferred Stock					
Common Stock					
Capital Surplus					
Surplus Reserves					
Earned Surplus					
Total					
Percentage Proportions:					
Bonds					
Preferred Stock					
Common Equity Less Intangibles					
Working Capital per $1,000 Bond					
Net Tangible Assets per Share Common Stock					
IV. Earnings:					
Net Sales					
Depreciation					
Net Operating Income					
Other Income					
Net for Interest					
Interest					
Federal Income Taxes					
Preferred Dividends					
Common Dividends					
Surplus					
Depreciation to Gross Fixed Assets—%					
Depreciation to Net Sales—%					
Net Operating Profit Margin—%					
Times Interest Earned					
Times Interest and Preferred Dividends Earned					
Earned per Share—Common					
Dividends per Share—Common					
Earned on Total Tangible Capital Structure					
Earned on Tangible Common Equity					
V. Security Price Record (annual high-low):					
(Title) Bonds					
Preferred Stock					
Common Stock					
Yield on Average Bond Price					
Yield on Average Preferred Stock Price					
Dividend Yield on Common Stock					
Earned on Common Stock Price—%					

with something of the intensiveness that the management itself might undertake.

It is not possible to make a complete survey of all the aids to statement analysis which may be available or desirable for executive purposes. Such discussion would reach over into the field of statistical control. Business statistics is a distinct subject which serves with accounting as the means of managerial control. Moreover, the subject of production costs—falling in the specialized field of cost accounting—can only be indicated in this work.

Supplementary information for investors. Indicative of the kind of information desirable for investment analysis purposes, is that required by the Securities and Exchange Commission from corporations registering their securities. In addition to the financial statements, information is required as to:

1) Facts about organization of corporations;
2) History and nature of business;
3) General character and location of principal plants and other important units;
4) Details about capital securities and any warrants or rights to subscribe to securities;
5) Names of persons who own more than ten per cent of any class of equity security;
6) Names and addresses of all directors and officers;
7) Remuneration of all directors and officers; also of employees and other persons when they receive in excess of $20,000 during year;
8) Any important bonus or profit-sharing arrangements;
9) Important management and supervisory contracts;
10) Dates, parties, and general tenor of important contracts;
11) Options to purchase securities given by corporation;
12) Information about any (a) substantial asset revaluation, (b) restatement of capital stock, or (c) amortization of bond discount and expense other than regular annual write-off after January 1, 1925.
13) Names of public accountants who have certified any statements since January 1, 1925.

Graphic presentation. Because of the very great importance of suitable presentation in order to clarify the meaning of financial information, the utility of graphic forms should not be overlooked. The greater ease with which one may read a graph, as

compared with a table of figures, explains the increased use of this form of presenting figures. It is much easier to see the rise and fall of a line in a picture before one than to examine a series of figures that tell the same story. So a graph picturing sales, operating expenses, net earnings available for dividends, and

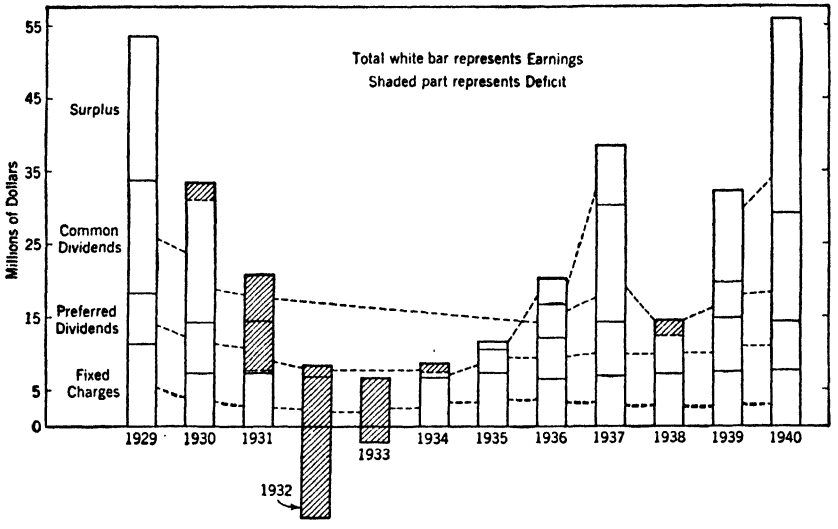

Fig. 7.—Bethlehem Steel Corporation Earnings and Their Distribution.

BETHLEHEM STEEL CORPORATION EARNINGS AND THEIR DISTRIBUTION *

YEARS ENDED DECEMBER 31
(Thousands of Dollars)

Year	*Available for Fixed Charges*	*Fixed Charges*	*Preferred Dividends*	*Common Dividends*	*Surplus or Deficit*
1929.....	53,460	11,217	a7,000	a15,600	19,643
1930.....	31,016	7,173	a7,000	a19,200	*2,357d*
1931.....	7,542	7,426	a6,895	6,400	*13,179d*
1932.....	*12,507d*	6,897	1,645	.....	*21,049d*
1933.....	*2,034d*	6,702	.....	.....	*8,736d*
1934.....	7,354	6,804	1,634	.....	*1,084d*
1935.....	11,509	7,218	3,269	.....	1,023
1936.....	20,415	6,514	5,603	4,787	3,510
1937.....	38,786	6,966	7,471	15,941	8,407
1938.....	12,378	7,128	7,471	.....	*2,221d*
1939.....	32,133	7,495	7,471	4,775	12,392
1940.....	56,294	7,616	6,771	14,925	26,982

* ***Standard Individual Corporation Descriptions.***
a Includes dividends declared in January after close of fiscal year.
d = deficit.

dividends paid would make vivid some of the most important points to be examined in a series of earnings statements.

Thus, the accompanying Figure 7 shows Bethlehem Steel Corporation's earnings and their distribution for the years 1929–1940 much more vividly than the accompanying table. The total height of the white portion of the bar represents net income available for interest and dividends. The claims are marked off from bottom to top in the order of their priority: interest charges, preferred dividends, and, when they exist, common dividends and surplus. Common dividends were continued in 1930 and 1931 in amounts exceeding the balance available. Unearned preferred dividends were paid in 1932, 1934, and 1938. The deficit after the payments in any year is shown by the shaded area. In 1931, the earnings barely covered interest charges, and both preferred and common dividends contributed to the deficit. In 1932 and 1933, the income statement showed a deficit even before interest by the amounts which the shaded, or cross-hatched, areas extend below the base line. A more vivid effect might be had by introducing a different type of cross-hatching for each section of the bar and then coloring the deficit area with the conventional red-ink color. However, simple black-and-white effects are preferable for most commercial work because they permit quick and inexpensive reproduction, as compared with color work.

One point should be emphasized as to the nature of graphs, one recommendation made, and one caution given. First, as to the nature of graphs: they are prepared to tell the facts at a glance, and if detailed study is required they fail in their primary purpose. A good graph must be clear. Second, it may be recommended that, where possible, it is a wise precaution to give a tabulation of the figures used. In the third place, it is necessary to guard against possible optical errors.

Misleading graphs. For any thorough study of graphs, a special work on the subject of statistical presentation should be studied.[10] Two misleading conditions have been so frequently found in the presentation of financial data that they may properly be mentioned here. The first condition indicates how the eye may be misled, and the second, how the study of special forms is essential to insure the utilization of correct methods in graphic work.

[10] Karsten, K. G., *Charts and Graphs* (New York: Prentice-Hall, Inc., 1925), pp. 136 and 155, gives a number of illustrations of how popular graphic methods are likely to be misleading.

The pair of graphs shown in Figure 8 represent the same figures for the sales of a certain firm. Since the base line which would stand for zero has been erased in the right-hand figure, one is likely to gain an incorrect impression. The rise is so emphasized in that figure that the sales appear to have been increased rather more rapidly than in the case of the data presented in the left-hand figure. The reason for this difference lies in

TABLE OF SALES CHARTED

Year	*Amount of Sales*
1920	$130,000
1921	110,000
1922	125,000
1923	140,000
1924	160,000
1925	175,000
1926	200,000

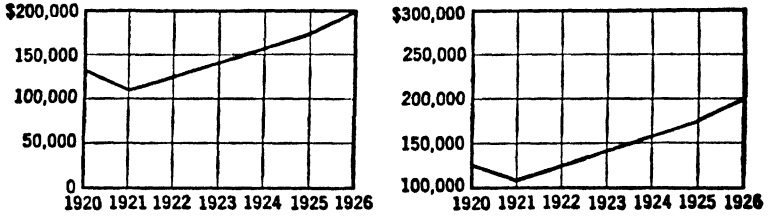

Fig 8.—Illustration of Visual Effect of Different Base Lines.

the tendency of the eye to measure the quantities or values presented as so much distance between the base line and the line representing the data. Quantities at different points on the data line are consequently given relative values dependent upon their relative height, which interpretation is correct only when the base line is zero.

In one instance, the promoters of a speculative stock wished to show graphically how the price of their stock had risen. The price had increased from $25 to about $32 during a relatively short period of promotion. By making the base line $22 instead of zero, the reader was given the impression that the stock had about tripled in value in the interval, since $32 was three and one-third times as far from the base line as $25. So, in the figure for sales given in the above illustration, the impression made by the second graph is that the amount has been multiplied a number of times, where the correct figure shows the increase to have been but a fraction of the value in the initial year.

Ratio charts. Another problem in graphic presentation arises

where the object is not to present certain quantities, such as the total sales, but where, rather, the percentage of increase or decrease of one item, such as sales, is to be compared with the percentage increase or decrease of some other item, such as expenses. Many charts are made with the express intention of showing relative variations; but when drawn on ordinary rec-

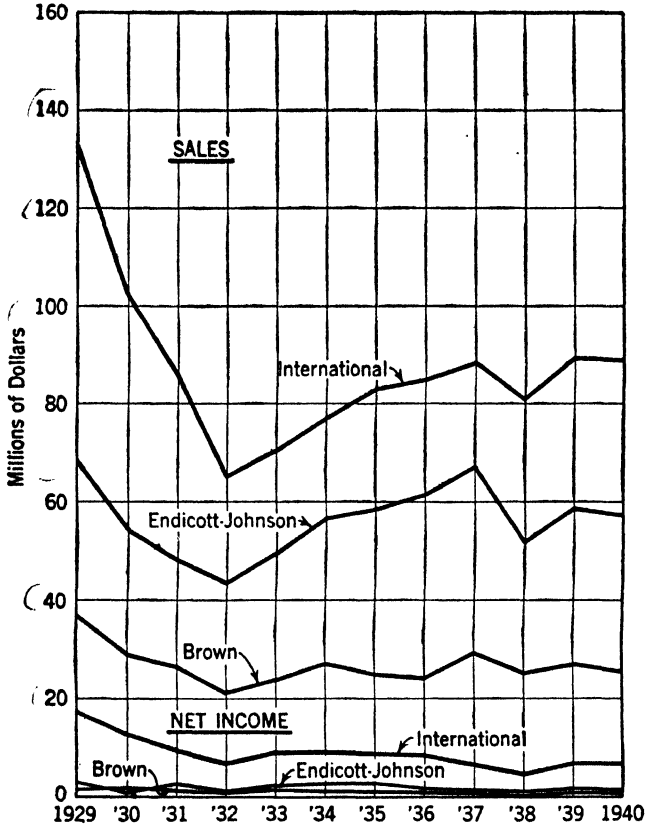

Fig. 9.—Sales and Net Income of Leading Shoe Manufacturers, 1929–1940—Rectilinear Chart.

tilinear ruling they give a misleading picture. A chart upon which a certain vertical distance always represents the same percentage change rather than the same numerical change meets this difficulty. This result is accomplished by the ratio, or "semilogarithmic," chart.[11]

[11] Described more fully in Croxton, F. E., and Cowden, D. J., *Practical Business Statistics* (New York: Prentice-Hall, Inc., 1934), Chap. V.

On the rectilinear chart, the same numerical change is always represented by the same vertical distance, whereas on the ratio chart, the same percentage change is always represented by the same vertical distance. For example, in the rectilinear chart, the vertical distance between 1,000 and 2,000 is the same as between

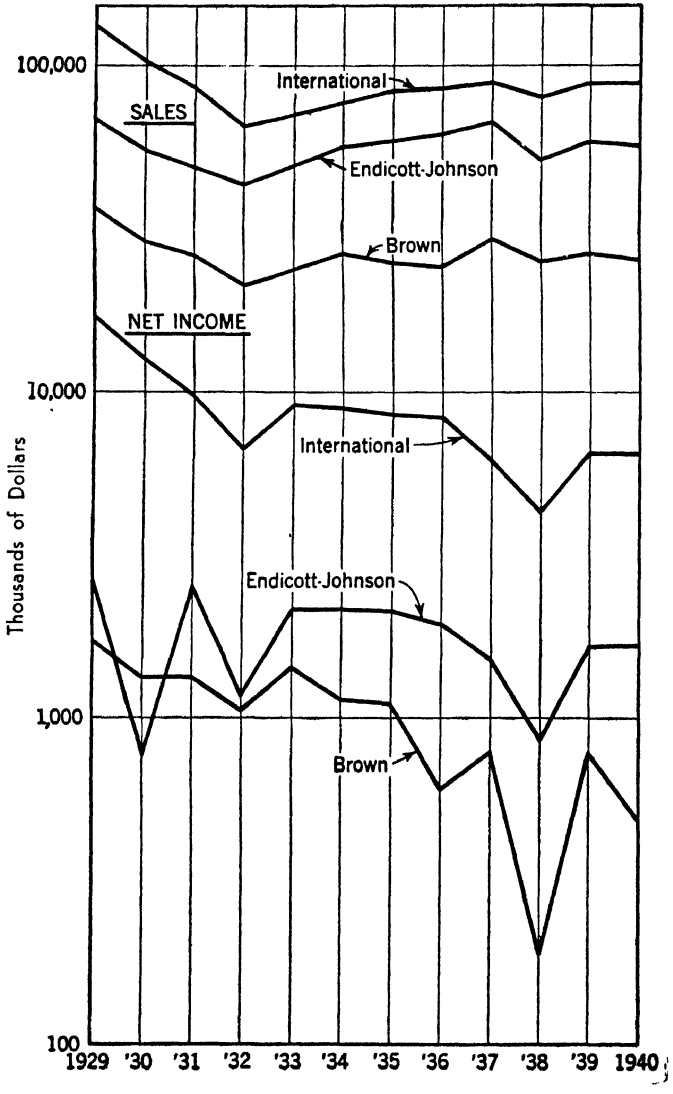

Fig. 10.—Sales and Net Income of Leading Shoe Manufacturers—Ratio Chart.

5,000 and 6,000, because the numerical difference is the same—1,000 in both cases. Note, however, that while the numerical increase is the same in both cases, the percentage increase is very different, being 100 per cent in the first case and 20 per cent in the second. In the ratio chart, however, the vertical distance from 1,000 to 2,000 (100 per cent increase) is considerably greater than from 5,000 to 6,000 (20 per cent increase) but is the same as from 5,000 to 10,000 (100 per cent increase). Also, the distance from 1,000 to 1,200 (20 per cent increase) is the same as from 5,000 to 6,000 (20 per cent increase).

The net sales and net income figures for three leading shoe manufacturers—International Shoe Company, Endicott-Johnson Corporation, and the Brown Shoe Company, Inc.—as shown in the accompanying table, are used to illustrate the difference between the two types of chart. Plotted in the accompanying ordinary rectilinear chart, the figures for sales are prominent and those for net income (in this case, the same as net profits) are so small as to conceal fluctuations and trends. For these data, relative rise and fall, or fluctuation, is more important to the analyst than the absolute dollar changes. The ratio chart figure brings out this relative fluctuation. As would be expected, net income is more variable percentagewise than sales. Whereas the mere size of the International sales figures makes their movement seem more extreme in the first chart, the ratio chart brings out

SALES AND NET INCOME OF LEADING SHOE MANUFACTURERS: 1929–1940
(Thousands of Dollars)

	Net Sales			*Net Income*		
Year	*International*	*Endicott-Johnson*	*Brown*	*International*	*Endicott-Johnson*	*Brown*
1940	89,257	57,636	25,633	6,474	1,664	498
1939	89,325	58,525	26,770	6,588	1,661	774
1938	80,829	41,735	25,005	4,268	857	191
1937	88,279	67,135	29,397	6,267	1,521	793
1936	84,857	61,571	24,011	8,417	1,975	603
1935	83,073	58,328	24,904	8,542	2,117	1,108
1934	77,169	56,248	26,832	8,967	2,168	1,139
1933	70,343	49,818	23,888	9,091	2,155	1,437
1932	65,489	43,599	21,156	6,648	1,188	1,016
1931	86,802	48,203*	26,692	9,745	2,581*	1,356
1930	102,394	54,499	29,019	12,874	765	1,334
1929	132,110	68,415	36,754	17,031	2,772	1,740

* Eleven months ended Nov. 28.

the very similar relative sales fluctuations of all three companies, although the narrowing spread between the International and Endicott-Johnson lines indicates that the latter company was gaining on the former during the period 1929–1937. The spread increased in the last three years. The ratio chart also brings out the relatively large fluctuations of Endicott-Johnson net income in the early years and of Brown in 1938. For the whole period, all the companies showed a downward trend for net income but the total loss was relatively greatest for Brown, least for Endicott-Johnson.

The ratio chart thus presents for rapid inspection a picture of relative variation of two or more series, or of the variation of even a single series, in a way that no table possibly can. Even an elaborate percentage study would be less telling, although once the major differences have been presented in the graphic fashion, a few percentage statements may fortify the description of the chart. Thus, the percentage declines in sales and net income for the period 1929–1940 were as follows:

	Sales Decrease	*Net Income Decrease*
International	33%	62%
Endicott-Johnson	16	40
Brown	30	71

It will be noted that no zero amount or deficit can be represented upon the ratio chart. The base line does not have any significance, as it ordinarily does in a well-constructed rectilinear chart with a zero base line which facilitates comparisons of absolute amounts by their vertical distances from it.

Summary. This chapter has suggested something of the form to be followed in financial statement analysis for mercantile and bank credit work and for investment purposes. The task is admittedly difficult because in practice the form must be adapted to fit the data which are ordinarily available and to meet the peculiar needs of the user of the material. Variations in available data and in a user's needs will require modification of any general form put forward.

The supplementary information noted in this chapter is worthy of special study, for often the discovery of a single hidden factor sufficient to make for success or failure will rest upon some one clue. Graphic presentation is mentioned here because so frequently it is the most effective instrument for bringing out important tendencies and presenting them effectively.

FORM OF FINANCIAL STATEMENTS REQUIRED BY SECURITIES AND EXCHANGE COMMISSION

Among the various forms published by the Securities and Exchange Commission, the student of statements will be especially interested in Form 10 for corporations which are applying for the registration of the securities about to be offered to the public, and Form 10-K for the annual report of corporations whose securities are listed on a registered securities exchange. With each form there is an instruction book. Also of interest is Regulation S-X on the Form and Content of Financial Statements, from which much of the following material is drawn.

The Commission recognizes that some "average investors" will not always appreciate or even grasp the significance of some portions of such information; but it believes that everything that it asks possesses value to the investing public and that this should be made available to those who want it, especially those who undertake to give advice to investors.

Among the practices established by the new form are requirements that corporations disclose their gross sales (in the absence of action by the Commission honoring a request for confidential statement of this item), that earned surplus hereafter be set apart from capital or paid-in surplus, that the market price as well as the book value or cost of marketable investments be shown in the balance sheet, and that securities of the company or its affiliates may not be classified as marketable investments.

As required by law, the financial statements are to be certified by certified public accountants, after proper audit.

A fuller statement of the requirements, as well as rulings, may be found in the *Securities Regulations Service,* published by Prentice-Hall, Inc.

Balance sheet: Where, in these instructions, "the basis of determining the amount" is required, the basis shall be stated specifically. The term "book value" is not sufficiently explanatory unless, in the instructions, it is stated to be acceptable with respect to an item.

Assets hypothecated or pledged, other than for funded debt, shall be so designated. If current assets or securities are pledged to secure long term debt they shall likewise be designated.

Any information necessary to describe any item adequately may be presented either in the financial statement, or in a schedule or note attached thereto, or in the accountants' certificate.

The basis of conversion of all items in foreign currencies shall be stated,

and the amount and disposition of resulting unrealized profit or loss shown if significant.

Current assets: Items included in this group shall be generally realizable within one year; however, generally recognized trade practices with respect to individual items such as installment receivables, or inventories long in process, are admissible, provided such trade practices are stated. Reserves provided against current assets shall be separately shown in the balance sheet, and shall be deducted from the specific assets to which they apply. The total of current assets shall be stated.

1. *Cash and Cash Items:*	State separately (a) cash on hand, demand deposits, and time deposits; (b) call loans; (c) funds subject to withdrawal restrictions. Funds subject to such restrictions and deposits in closed banks shall not be classed as current assets unless they will become available within one year.
2. *Marketable Securities:*	Include only securities having a ready market. State in the balance sheet the basis of determining the balance sheet amount and if not shown on the basis of current market quotations, state such aggregate amount parenthetically. If marketable securities constitute 15% or more of total assets submit the information specified in Schedule I-A, and refer to it in the balance sheet.
3. *Notes Receivable (Trade):*	Notes and accounts receivable may be combined.
4. *Accounts Receivable (Trade):*	Notes and accounts receivable known to be uncollectible shall be excluded from the asset as well as from the reserve account.
5. *Reserves for Doubtful Notes and Accounts Receivable (Trade):*	Provision for doubtful notes and accounts receivable (trade) shall be shown in the balance sheet, and included in Schedule VI.
6. *Inventories:*	State separately in the balance sheet, or in a schedule therein referred to, major classes of inventory such as (a) raw materials; (b) work in process; (c) finished goods; (d) supplies, and the basis of determining the amounts shown in the balance sheet. Any other classification that is reasonably informative may be used. State, where practicable, the amount of any intercompany profits included in these items. If impracticable of determination without unreasonable expense or delay, give an estimate or explain.
7. *Other Current Assets:*	Specify. State separately, (a) total of current amounts due from officers and directors, other than trade accounts sub-

ject to the usual trade terms; (b) total of current amounts due from parents and subsidiaries; (c) any other amounts in excess of 5% of total current assets, indicating when any such amount is due from affiliates other than those included under sub-caption (b).

Indebtedness of a parent or subsidiary or any affiliate as may be designated under (c) shall not be considered as current unless the net current asset position of such affiliates justifies such treatment. In the registrant's balance sheet show separately that indebtedness which in the consolidated statement is (a) consolidated, and (b) not consolidated.

Provision for necessary reserves shall be shown.

Investments:

8. *Securities of Affiliates:* Submit the information specified in Schedule I and refer to it in the balance sheet.

9. *Other Security Investments.* State in the balance sheet or in a note therein referred to, the basis of determining the amount, and, if available, the aggregate current quoted value. If reacquired stock (treasury stock) is shown as an asset in the balance sheet, give the reasons therefor and state the number of shares and the amount at which carried. (See balance sheet item 31.) Where reacquired bonds or other evidences of indebtedness of the person whose statement is furnished are included under this caption (excluding those held in sinking funds), state the principal amount and the amount at which carried.

If the total of this item (Other Security Investments) constitute 15% or more of total assets, submit the information specified in Schedule I-A and refer to it in the balance sheet.

10. *Indebtedness of Affiliates—Not Current:* State separately, in registrant's balance sheet, that indebtedness which in the consolidated statement is (a) consolidated, (b) not consolidated.

Provision for necessary reserves shall be shown.

11. *Other Investments:* State separately, by class of investments, any items in excess of 5% of total assets, other than fixed and intangible assets.

Fixed assets:

12. *Property, Plant and Equipment:* Submit the information specified in Schedule II and refer to it in the balance sheet.
13. *Reserves for Depreciation, Depletion and Amortization (or Reserves in Lieu thereof):* Submit the information specified in Schedule III and refer to it in the balance sheet.

Intangible assets:

14. *Patents, Trade Marks, Franchises, Goodwill and Other Intangible Assets:* Submit the information specified in Schedule IV and refer to it in the balance sheet.
15. *Reserves for Depreciation and/or Amortization of Intangible Assets:* Submit the information specified in Schedule V and refer to it in the balance sheet.

Deferred charges:

16. *Prepaid Expenses and Deferred Charges:* Specify. State separately any substantial items.
17. *Organization Expense:*
18. *Debt Discount and Expense:* Show separately, and state the method used in amortizing such debt discount and expense.
19. *Discount and Commissions on Capital Stock:* State separately commissions on capital stock not charged off. State what provision has been made for writing off these items.

Other assets:

20. Specify. State separately total of sinking fund assets, and any other item in excess of 5% of total assets, other than fixed and intangible assets.

LIABILITIES, CAPITAL STOCK AND SURPLUS

Current liabilities: In general all amounts due within one year shall be included here. Generally recognized trade practices may be followed with respect to such items as customers' deposits and deferred income, provided such trade practices are stated. The total of current liabilities shall be shown:

21. *Notes Payable:* State separately amount payable (a) to banks; (b) to trade; and (c) to others.
22. *Accounts Payable (Trade):*
23. *Accrued Liabilities:* State separately accrued payrolls, tax liability, interest, and any other substantial items.
24. *Other Current Liabilities:* Specify. State separately (a) total of current amounts due officers and directors, other than as required in Item 23; (b) dividends declared; (c) serial bonds, notes and mortgage installments due within one year (where any such obliga-

tions of the person whose statements are furnished have been reacquired and deducted under this sub-caption the amounts shall be shown separately); (d) total of current amounts due to parents and subsidiaries (under this sub-caption state separately the amounts which in the consolidated balance sheet are (i) consolidated and (ii) not consolidated) and (e) any other item in excess of 5% of total current liabilities, indicating when any such liability is due to affiliates other than those included under sub-caption (d). Remaining items may be shown in one amount.

Deferred Income:

25. Specify. See note above on this item under "Current Liabilities."

Long term debt:

26. *Funded Debt:* Refer in the balance sheet to Item 13 of the application as to details. If any amount of funded debt, other than as required in Item 24(c) above, falls due within one year, state separately. Where reacquired bonds and notes of the person whose statements are furnished are deducted from bonds and notes outstanding the amounts shall be shown separately.

27. *Indebtedness to Affiliates—Not Current:* State separately, in registrant's balance sheet, that indebtedness which in the consolidated statement is (a) consolidated, (b) not consolidated.

28. *Other Long Term Debt:* Specify. State whether secured. Include under this caption all amounts of long term debt not provided for under captions 26 and 27 above.

Other liabilities:

29. Specify. State separately any amount in excess of 5% of total liabilities, other than funded debt, capital stock and surplus.

Reserves (not elsewhere provided for):

30. Submit the information specified in Schedule VI. State in the balance sheet the total of each major class.

Capital stock and surplus:

31. *Capital Stock:* State in the balance sheet for each class of stock, the number of shares (a) authorized; (b) outstanding; par value per

share; if no par value the stated or assigned value per share, if any, and the capital stock liability thereof. Show also the dollar amount, if any, of capital stock subscribed but unissued, and of subscriptions receivable thereon.

Reacquired stock (treasury stock) is preferably to be shown as a deduction from capital stock or from either the total of capital stock and surplus, or from surplus, at either par or cost, as circumstances require.

32. *Surplus:* Show in the balance sheet the division of this item into (a) paid-in surplus and/or (b) other capital surplus; and (c) earned surplus; however if, in the accounts of the registrant, separate balances for these are not shown at the beginning of the period of report, i.e., if the company has not, up to the opening of the period of report, differentiated in its accounting for surplus as indicated above in (a) and/or (b) and (c), then the registrant may state the surplus in one amount.

An analysis of each surplus account for the period of report, as shown in Schedule VII, shall be given in the balance sheet, or in a schedule, or as a continuation of the profit and loss statement.

Balance sheet notes:

A. Contingent liabilities not reflected in the balance sheet shall be given due consideration here.

B. If there be arrears in cumulative dividends state the amount per share and in total.

C. The facts and amounts with respect to any default in principal, interest, or sinking fund provisions shall be stated here if not shown in the balance sheet.

Profit and loss statement

The basis of conversion of all foreign currency items shall be stated.

Where, in the registrant's business, income is derived from both Gross Sales (required in 1.A. below) and Operating Revenues (required in 1.B. below) the two classes may be combined in one amount when the lesser amount is not more than 10% of the sum of the two items. Where these items are combined, the Cost of Goods Sold (2.A. below) and Operating Expenses (2.B. below) may be combined in one amount.

1.A. *Gross Sales Less Discounts, Returns and Allowances:*

(a) State separately, where practicable, sales to (i) parents and subsidiaries and (ii) sales to others.

(b) When sales are made on an install-

ment or other deferred basis, show in the profit and loss statement or in a note therein referred to, the basis of taking profits into income.

2.A. *Cost of Goods Sold:* State here the amount of cost of goods sold as regularly computed under the system of accounting followed by the registrant. If opening and closing inventories are used in the computation, state them here, or in a schedule here referred to. If any intercompany profits are included, state, where practicable, the amount, either here or in a note attached to the schedule showing the analysis of costs of goods sold. If impracticable of determination without unreasonable expense or delay, give an estimate, or explain.

1.B. *Operating Revenues:* Public utilities using classifications of accounts prescribed by federal or state authorities, or similar classifications, shall follow the general segregation of revenues prescribed by such authorities. State separately, where practicable, revenues from parents and subsidiaries and revenues from others.

2.B. *Operating Expenses:* State here the total amount of operating expenses. In the case of public utilities using classifications of accounts prescribed by federal or state authorities, or similar classifications, the general segregation of operating expenses prescribed by such authorities may be followed.

3. *Maintenance and Repairs:*
4. *Depreciation, Depletion and Amortization, or Charges in Lieu Thereof:*
5. *Taxes (Other than Income Taxes):*
6. *Management and Service Contract Fees:*
7. *Rents and Royalties:*

Enter here the amounts shown in Col. C of Schedule VIII, which shall be furnished as specified therein.

8. *Other Operating Expenses:* State separately any substantial amount.
9. *Selling, General and Administrative Expenses:*
10. *Provision for Doubtful Accounts:*
11. *Other General Expenses:* Include items not normally included in Item 9 above. State separately any substantial amount.

Other income:

12. *Dividends:* Submit the information specified in Schedule IX and refer to it in the profit and loss statement.

13. *Interest on Securities:* State separately, where significant and practicable, the amount of interest from (a) marketable securities, (b) affiliates, (c) other security investments.

14. *Profits on Securities:* Profits arising from transactions in securities shall be stated net of losses. No profits on registrant's own securities, or on those of its affiliates shall be included under this caption. State the principle followed in determining the cost of securities sold, e.g., "first in-first out"; "average cost"; or "specific certificate or bond."

15. *Miscellaneous Other Income:* State separately, with explanation, any substantial non-recurring items of miscellaneous other income, and any other substantial amounts. If profits arising from transactions in registrant's own securities or in those of its affiliates or on the sale of capital assets are included, state the amount separately and give reasons for the inclusion under this caption rather than as direct credits to surplus.

Income deductions:

16. *Losses on Securities:* Losses arising from transactions in securities shall be stated net of profits. No losses on registrant's own securities, or on those of its affiliates shall be included under this caption. State the principle followed in determining cost of securities sold, e.g., "first in-first out"; "average cost"; or "specific certificate or bond."

17. *Miscellaneous Income Deductions:* State separately, with explanation, any substantial non-recurring items of miscellaneous income deductions, and any other substantial amounts. If losses arising from transactions in registrant's own securities or in those of its affiliates or on the sale of capital assets are included, state the amount separately or give reasons for inclusion under this caption rather than as charges to surplus.

18. *Interest and Debt Discount and Expenses:* State separately (a) interest on funded debt; (b) amortization of debt discount and expense; (c) other interest.

19. *Net Income before Provision for Income Taxes:*

20. *Provision for Income Taxes:*

21. *Net Income or Loss:* See balance sheet item 32, and Schedule VII.

Schedule I—Investments in securities of affiliates (Note 1)

COL. A	COL. B		COL. C		COL. D		COL. E	
Title of Issue, and Name of Issuer. Group in three divisions: (i) stocks and bonds of subsidiaries consolidated, (ii) stocks and bonds of subsidiaries not consolidated, (iii) stocks and bonds of other affiliates. Show stocks and bonds separately in each case (Note 2)	Balance at the Beginning of Period as Per Accounts		Additions During Period		Reductions During Period		Balance at the Close of Period Balance Sheet Item 8	
	Number of Shares. Principal amount of bonds and notes	Amount in Dollars	Number of Shares. Principal amount of bonds and notes	Amount in Dollars (Note 3)	Number of Shares. Principal amount of bonds and notes	Amount in Dollars (Note 4)	Number of Shares. Principal amount of bonds and notes	Amount in Dollars

NOTE: (1) This schedule shall be furnished to correspond with the balance sheet of the registrant, and a similar schedule for the consolidated balance sheet.

(2) Within the three groups required in Col. A major investments shall be stated separately. Reasonable grouping without enumeration may be made of other investments. Those foreign investments, the enumeration of which would be detrimental to the interest of the security holders of the registrant, may be grouped.

(3) If the cost of additions in Col. C represent other than cash expenditures, explain.

(4) State: (a) Cost of items sold and how determined
(b) Amount received. If other than cash, explain.
(c) Disposition of resulting profit or loss.

Schedule I-A—Marketable securities and/or other security investments.

COL. A	COL. B	COL. C	COL. D
Title of Issue and Name of Issuer	Number of shares, units or principal amount	Aggregate Amount at which each security is carried in the balance sheet (NOTE 1)	Aggregate market value at balance sheet date

NOTE: (1) State the basis of determining the amounts in Column C.

Schedule II—Property, plant and equipment (Note 1)

COL. A	COL. B	COL. C	COL. D	COL. E	COL. F
Classifications of Property (Note 2)	Balance at Beginning of Year as Per Accounts	Additions During Period at Cost (Note 3)	Retirements or Sales During Period (Note 4)	Other Changes Dr. and/or Cr.—Describe (Note 5)	Balance at Close of the Period—Balance Sheet Item 12

NOTE: (1) Where the registrant is mainly a holding company, and its property is not of significant amount, this schedule may be furnished in connection with the consolidated balance sheet only.

(2) Show by primary property accounts, as carried on the company's books.

(3) If the changes in property accounts represent anything other than additions from acquisitions, state clearly the nature of the changes and the other accounts affected. If cost of property additions represents other than cash expenditure explain.

(4) If the changes in property accounts represent other than reductions by retirement or sales, state clearly the nature of the changes and the other accounts affected. If items are stated at other than cost explain, where practicable.

(5) When provision for depreciation, depletion and/or amortization of property, plant and equipment is credited in the books directly to the asset accounts, the amounts shall be stated in Col. E with explanations, including where charged.

Schedule III—Reserves for depreciation, depletion and amortization (Note 1)

COL. A	COL. B	COL. C		COL. D	COL. E		COL. F
Reserves for Classifications of Property Listed in Schedule II (Note 2)	Balance at Beginning of Period as Per Accounts	Additions to Reserves		Total of Col. B and Col. C	Charges to Reserves		Balance at the Close of Period—Balance Sheet Item 13
		Charged to Costs or Income	Charged to Other Accts. —Describe		Retirements Renewals and Major Repairs	Other—Describe	

NOTE: (1) (a) Where the registrant is mainly a holding company, and its reserves are not of significant amount, this schedule may be furnished in connection with the consolidated balance sheet only.

(b) Where other reserves are created in lieu of depreciation reserves the same information shall be given with respect to them.

(c) State the company's policy with respect to the provisions for depreciation, depletion and amortization or reserves created in lieu thereof, during the year under report.

(d) Insofar as amounts for depreciation, depletion and amortization are credited to the property accounts, such amounts shall be shown in Schedule II, as there required.

(2) Where so carried in the books, reserves shall be shown to correspond with the classifications of property in Schedule II, separating especially depreciation, depletion and amortization.

Schedule IV—Intangible assets (Notes 1 and 2):

COL. A	COL. B	COL. C	COL. D		COL. E	COL. F
Description of Assets by Main Classes	Balance at Beginning of Period as Per Accounts	Additions During Period at Cost—Describe (Note 3)	Deductions During Period Charged (Note 4)		Other Changes During Period Dr. and/or Cr. —Describe	Balance at the Close of Period—Balance Sheet Item 14
			To Profit and Loss	To Other Accounts—Describe		

NOTE: (1) If in the registrant's balance sheet this asset is not of significant amount, this schedule may be furnished in connection with the consolidated balance sheet only.

(2) Where in the accounts of the registrant it is not practicable to separate intangible assets from property, plant and equipment, the information here required may be included in Schedule II.

(3) If cost of additions in Col. C represent other than cash expenditure explain.

(4) When provisions for depreciation and/or amortization is credited in the books directly to intangible asset accounts, the amounts shall be stated in Col. D, with explanation.

Schedule V—Reserve for depreciation and/or amortization of intangible assets:

COL. A	COL. B	COL. C		COL. D	COL. E	COL. F
Reserves for Classifications of Intangible Property in Schedule IV (Note 1)	Balance at Beginning of Period as Per Accounts	Additions to Reserves		Total of Col. B and Col. C	Charges to Reserves—Describe	Balance at Close of the Period—Balance Sheet Item 15
		Charged to Costs or Income	Charged to Other Accounts —Describe			

NOTE: (1) If in the registrant's balance sheet this asset is not of significant amount, this schedule may be furnished in connection with the consolidated balance sheet only.

(2) This schedule shall, as far as practicable, be furnished to correspond with the classifications in Schedule IV.

(3) State the company's policy with respect to the provisions for depreciation, and amortization of intangible assets, or reserves created in lieu thereof.

(4) Insofar as amounts provided for depreciation and/or amortization are credited to the intangible assets accounts, such amounts shall be shown in Schedule IV as there required.

Schedule VI—Reserves (Note 1)

COL. A	COL. B	COL. C		COL. D	COL. E
		Additions During Period Charged			
Descriptive Names of Reserves (Note 2)	Balance at Beginning of Period As Per Accounts	To Costs or Income	To Other Accounts —Describe	Charges to Reserve During Period—Describe	Balance at the Close of Period—Balance Sheet Item 30

NOTE: (1) (a) Where in the balance sheet of the registrant these reserves are not significant, this schedule may be furnished in connection with the consolidated balance sheet only.

(b) Total of each general class of reserve shall be shown separately in the balance sheet.

(2) List, by general major classes, all reserves not included in schedules III and V. Identify each such class of reserve by descriptive title. All minor items and special contingency reserves may be grouped in one total.

(3) Total of each general class of reserve shall be shown separately in the balance sheet.

Schedule VII—Surplus

1. BALANCE (OR BALANCES) AT BEGINNING OF PERIOD AS PER ACCOUNTS.
2. NET INCOME OR LOSS FROM PROFIT AND LOSS STATEMENT.
3. OTHER ADDITIONS TO SURPLUS—SPECIFY.

TOTAL:

4. CHARGES TO SURPLUS—SPECIFY.
5. DIVIDENDS—STATE RATE AND AMOUNT ON EACH CLASS OF STOCK.
   (a) CASH
   (b) STOCK

TOTAL CHARGES TO SURPLUS

6. BALANCE (OR BALANCES) AT CLOSE OF PERIOD—BALANCE SHEET ITEM 32.

Schedule VIII.—State for each of the costs or expenses named in Col. A below, the total amount charged during the year, classified, where practicable, as indicated.

COL. A	COL. B	COL. C	COL. D		COL. E
Item	Charged to Costs	Charged to Profit and Loss	Charged to Other Accounts		Total
			Account	Amount	
1. Maintenance and Repairs.					
2. Depreciation, Depletion and Amortization (or charges in lieu thereof).					
3. Taxes (other than Income Taxes).					
4. Management and Service Contract Fees.					
5. Rents and Royalties (where significant).					

Schedule IX—Income from dividends (Note 1).—

COL. A	COL. B			COL. C
	Amount of Dividends			
Title of Issue and Name of Issuer (Note 2)	1. Cash	2. Other (Note 3)	3. Total—Item 12 Profit and Loss Statement	Amount of Registrant's Equity in Affiliates' Earnings or Losses for Period of Report

NOTE: (1) This schedule shall be furnished to correspond with Item 12 in the profit and loss statement of the registrant.

(2) The stocks of affiliates shall be listed or combined as in Schedule I. Dividends from (a) marketable securities (Item 2 in balance sheet) and (b) other security investments (Item 9 in balance sheet) shall also be included, and may be shown in separate aggregate amounts.

(3) State the nature of any dividends other than cash, the basis on which they have been taken up as income, and the reasons for so doing.

Part II

ANALYSIS OF THE DIFFERENT TYPES OF BUSINESS

Foreword

This second division of the book takes up the special problems and points of interest in the different classes of business enterprise. It will be noted that these different types fall into these three classes:

I. Public Service Industries.
   Railroads; Public Utilities.
II. Industrials.
   Mercantile and Manufacturing Concerns; Mines.
III. Financial Corporations.
   Commercial Banks; Insurance Companies; Holding Companies.

While the varieties of business are not exhausted by this list, the cases studied are representative of the three kinds of business. This threefold grouping will be found significant not only to the businessman studying statements but also to the economist. The investment of the public service industries is largely in the form of fixed, service-rendering capital. The industrials, on the other hand, are interested in turning over commodities, and require considerable working capital. Financial corporations engage their capital in securities or credit instruments to earn interest and dividends. It should be noted that occasionally some holding companies are a mixture of operating and holding company.

The material presented in Part II should be particularly helpful in the study of investments, although it should also be useful in the concrete study of the various fields of business administration—transportation, public utilities, merchandising, banking, and insurance.

CHAPTER XI

Railroad Statements

The Study of the Income Account

General interest of railroads. Railroad statements are of interest for three reasons:

1. *Completeness of information.* Because the railroads furnish an unusual amount of financial and statistical data reported in a uniform manner, they are a rich source of material for study.

2. *Politico-economic importance.* Our railway lines, approximately 235,000 miles in extent, are our most important trade highways, and, touching our economic life as they do at so many points, their proper regulation is a difficult problem. On the one hand, agricultural and industrial interests are ever seeking more favorable rates; on the other hand, the railroads demand a fair rate of return on their investment in order to maintain their plant in an efficient manner and to attract new capital for extensions and improvement. Just legislation and rate regulation require an intelligent appreciation of the information to be had from the earnings statements and balance sheets of the railroads.

3. *Investment importance.* Railroad securities constitute one of the most important classes of investments. The net amount of these securities held by the public in 1939 was as follows:

Capital Stock	$ 6,991,000,000
Funded Debt	10,707,000,000
Total	$17,698,000,000

The securities of railroads are very widely held and have constituted one of the most attractive fields for investment. Besides those who own railroad securities directly, the majority of people have an indirect financial interest in the railroads, for a large part of the investments of our insurance companies and savings banks are in railroad bonds. Railroad bonds were until recently the largest group of bonds of all corporation bonds held by life

insurance companies. Any financial disaster, therefore, to the railroads as a whole would affect practically everyone. This widespread economic interest is an important reason for the unusual financial aid extended to the railroads in their extreme distress during the depression of the early 1930's.

Sources of railroad data. The Interstate Commerce Commission *Statistics of Railways in the United States* furnishes the most detailed and comprehensive operating and financial statistics. The information about the individual railroads is accompanied by compilations prepared by the statisticians of the commission. The work is such that nearly two years elapse between the collection of these data and their final publication. However, the Commission publishes monthly reports of the earnings and expenses of the railroads and an annual statistical report of Class I roads, that is, roads with annual operating revenues in excess of $1,000,000.

Sources more generally used are the publications of Moody, Standard and Poor's, and Fitch, which are used by investors and investment houses. *Moody's Manual of Investments* has a volume on railroads which, in addition to comparative statements, contains other pertinent data. Much valuable statistical and general information about the railroads as a whole appears in each of these volumes, which are published annually. Current financial information concerning the individual railroads that comes out between the yearly publications is released at frequent intervals in a loose-leaf supplement. The Standard and Poor's Corporation offers its *Standard Individual Corporation Descriptions* which are for the various leading corporations and are upon individual cards, which can be replaced as rapidly as new information becomes available. The Fitch Publishing Company also offers an investment information service.

The Bureau of Railway Economics, whose offices are at Washington, D. C., publishes reports of the monthly earnings of railroads and other miscellaneous matter. Its *Review of Railway Operations* each year is of particular interest. The Western Railways' Committee on Public Relations at Chicago issues an annual number devoted to railroad statistics and a commentary on transportation problems. The United States Department of Commerce issues miscellaneous data on commerce and transportation.

Uniform railroad accounts. Railroads, like some other public service corporations coming under regulatory commissions, are

obliged to keep their accounts under a uniform system and report accordingly. Although the original Interstate Commerce Act of 1887 gave the Interstate Commerce Commission the power to prescribe the accounts to be kept by railroads doing an interstate business, it was found that insufficient power had been granted to enforce the provision. Considerable progress toward uniformity was made, however, through the influence of the Interstate Commerce Commission, the Association of American Railway Accounting Officers, and the National Association of Railway Commissioners of the States.

Under the Hepburn Act the Commission in 1906 was given the necessary power, and on July 1, 1907, a uniform classification of accounts for all steam railroads engaged in interstate commerce was put into effect.[1] As a result, there has been available, since that date, uniform and intelligible information for investors, regulatory bodies, shippers, and the general public. In the industrial and mercantile field, there is nothing comparable to this system of uniform accounts.

The Income account. The most generally read and widely circulated financial statement of the railroad is the Income Account. This statement is published in detail at the end of each year and is available in a partial and condensed form each month.

The Study of the Income account naturally starts with the very condensed form of the statement, such as is shown in Exhibit A. The figures for this exhibit are taken from the railroad's reports published annually, of which Exhibit B is an example. The following discussion of the various items is, on account of space, necessarily confined to those which are significant; those which are unimportant, and certain others which are self-explanatory and require no particular attention, are not referred to. For more detailed analysis, certain supplementary schedules of details and traffic statistics, which will be described later, are also used.

Gross operating revenue. The operating revenues are those from transportation and from incidental sources related to transportation, such as the dining car income, rent of buildings used in the service of transportation, and the like. Sometimes a small

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[1] This is known as the *Classification of Income, Profit and Loss, and General Balance Sheet Accounts for Steam Roads Prescribed by the Interstate Commerce Commission.* This general classification is supplemented by the *Classification of Operating Revenues and Operating Expenses* and the *Classification of Investment in Road and Equipment of Steam Roads.*

EXHIBIT A
NEW YORK CENTRAL RAILROAD COMPANY

10-YEAR ANALYSIS OF INCOME ACCOUNT *
Years Ended December 31

	Total Oper. Rev. $	*Net Oper. Rev.* $	*Ratio of Exps. to Total Oper. Rev.* %	† *Net Ry. Oper. Inc.* $	*Gross Income* $	*Misc. Deduct.* $
1940	370,545,875	91,870,895	75.21	44,052,437	62,235,553	1,987,615
1939	341,086,708	84,202,476	75.31	37,303,427	54,196,848	1,584,168
1938	298,681,195	61,178,812	79.52	15,582,476	30,756,142	1,679,735
1937	366,226,126	82,225,687	77.55	36,028,267	60,345,663	1,795,987
1936	361,063,872	92,233,436	74.46	45,278,627	67,744,088	1,669,363
1935	310,192,980	72,995,525	76.47	36,748,524	60,003,318	1,516,928
1934	295,084,881	70,913,121	75.97	29,160,928	53,217,582	2,291,378
1933	283,341,102	75,417,808	73.38	33,269,163	55,340,275	2,383,603
1932	293,636,140	66,459,520	77.37	20,812,987	45,180,492	4,968,685
1931	382,190,183	75,124,502	80.34	28,075,578	64,720,580	5,171,130

* The following income accounts in condensed analytical form are quoted chiefly from the *Standard Individual Corporation Descriptions.*
† After deducting taxes, net hire of equipment, and net joint facilities rents.

EXHIBIT A—(*Continued*)
NEW YORK CENTRAL RAILROAD COMPANY

10-YEAR ANALYSIS OF INCOME ACCOUNT
Years Ended December 31

	Avail for Fxd: Chgs.	*Total Fixed Charges*	*Times Earned Total Fixed Chgs.*	*Times Earned Int. on Fund. Debt*	*Net Income*	*Capital Stock Divs. Paid*	*Capital Stock Earned Per Share*	*Capital Stock Paid Per Share*	*Capital Stock Surp. After Divs. and Approps.*
	$	$			$	$	$	$	$
1940	60,247,938	48,982,854	1.23	1.45	11,265,084	.....	1.75	...	11,265,084
1939	52,612,680	48,103,444	1.09	1.18	4,509,236	.....	0.70	...	4,509,236
1938	29,076,407	49,230,764	0.59	0.20	*20,154,357*	.....	*3.13*	...	*20,154,357*
1937	58,549,676	52,197,064	1.12	1.24	6,352,612	.....	0.99	...	6,352,612
1936	66,074,725	57,141,550	1.16	1.31	8,933,175	.....	1.79	...	8,933,175
1935	58,486,390	58,371,344	1.00	1.00	115,046	.....	0.02	...	115,046
1934	50,926,204	58,608,539	0.87	0.73	*7,682,335*	.....	*1.54*	...	*7,682,335*
1933	52,956,672	58,369,186	0.91	0.81	*5,412,514*	.....	*1.08*	...	*5,412,514*
1932	40,211,807	58,468,207	0.70	0.36	*18,256,400*	.....	*3.66*	...	*18,326,550*
1931	59,549,450	57,119,349	1.04	1.09	2,430,101	19,970,305	0.49	4.00	2,309,254 *

* After Other Income Deductions of 120,847 in 1931 and 70,150 in 1932.
* Dividends Paid out of Profit and Loss. Balance after Dividends, *17,661,051.*
Figures in italics = Deficit.

EXHIBIT B
THE NEW YORK CENTRAL RAILROAD COMPANY
INCOME STATEMENT FOR THE YEAR ENDED DECEMBER 31, 1940
(10,940.89 Miles Operated)

Operating Income	
Railway Operations	
Railway Operating Revenues	$370,545,874.82
Railway Operating Expenses †	278,674,979.67
Net Revenue from Railway Operations	$ 91,870,895.15
Railway Tax Accruals	33,476,018.75
Railway Operating Income	$ 58,394,876.40
Equipment Rents, Net Debit	$ 11,636,287.87
Joint Facility Rents, Net Debit	2,706,151.50
Net Railway Operating Income	$ 44,052,437.03
Other Income	
Revenues from Miscellaneous Operations	$ 596,740.75
Income from Lease of Road and Equipment	263,003.45
Miscellaneous Rent Income	3,721,045.02
Miscellaneous Non-operating Physical Property	1,877,441.03
Separately Operated Properties—Profit	856,730.16
Dividend Income	6,579,040.16
Income from Funded Securities	4,032,286.96
Income from Unfunded Securities and Accounts	128,112.36
Income from Sinking and Other Reserve Funds	69,686.27
Miscellaneous Income	59,029.82
Total Other Income	$ 18,183,115.98
Total Income	$ 62,235,553.01
Miscellaneous Deductions from Income	
Expenses of Miscellaneous Operations	$ 443,882.67
Taxes on Miscellaneous Operating Property	76,963.84
Miscellaneous Rents	484,471.99
Miscellaneous Tax Accruals	509,854.19
Separately Operated Properties—Loss	22,775.67
Miscellaneous Income Charges	449,666.32
Total Miscellaneous Deductions	$ 1,987,614.68
Income Available for Fixed Charges	$ 60,247,938.33
Fixed Charges	
Rent for Leased Roads and Equipment	$ 21,724,402.41
Interest on Funded Debt	25,283,481.58
Interest on Unfunded Debt	1,974,970.16
Total Fixed Charges	$ 48,982,854.15
Net Income	$ 11,265,084.18

Profit and Loss Account		
Balance to Credit of Profit and Loss, December 31, 1939		$170,777,952.50
Additions:		
Net Income for the Year 1940	$11,265,084.18	
Credits from Retired Road Property	34,510.82	
Donations	9,546.50	
Miscellaneous Credits	372,631.48	11,681,772.98
		$182,459,725.48

Deductions:		
Surplus Appropriated for Investment in Physical Property	$ 112,626.29	
Debt Discount Extinguished through Surplus	17,222.85	
Debits from Retired Road Property (represents ledger value, less salvage recovered, of roadway property not required for transportation service retired during the year)	3,255,377.70	
Miscellaneous Debits	995,055.80	4,380,282.64
Balance to Credit of Profit and Loss, December 31, 1940		$178,079,442.84

† Includes $15,989,969.39 equipment depreciation charges.
Note: Included in Other Income and Rent from Leased Roads and Equipment are $4,331,859.09 of inter-company transactions representing credits and corresponding debits. Also included in Other Income is $1,443,271.94 of interest and dividends from terminal and other railroad companies whose properties are jointly used by this company, so that a major portion appears under Joint Facility Rents.

amount of net gain or loss is reported for the operation of facilities connected with transportation and jointly operated with other railroads. A summary of the operating revenues of the New York Central Railroad for the year 1940 read as follows:

	Amount	*Per Cent*
Freight Revenue	$270,274,028	72.9
Passenger Revenue	59,322,145	16.0
Mail Revenue	11,803,146	3.2
Express Revenue	7,313,917	2.0
Milk Revenue	1,349,058	.3
Switching Revenue	5,921,632	1.6
Other Trans. Revenue	2,060,120	.6
Non-Trans. Revenue	12,501,829	3.4
	$370,545,875	100.0

Revenue from freight. In the study of freight revenue, the major source of income, three factors receive especial attention: traffic density, traffic stability, and the length of haul. A railroad may be compared to a mill grinding out services: like a mill, it can produce only when there is grist to grind. Moreover, the interest on the plant and the cost of maintenance are fairly fixed, regardless of the production. (The ability of the railroads to control expenses and contract them on a large scale during the business decline after 1929 has been regarded as a remarkable achievement. Losses were heavy nevertheless, and the principle stated holds. Added traffic means a lowering of the cost per unit of service until the railroad is used to capacity. Consequently, increased traffic density tends to increase operating profits.

To find the volume of freight traffic, the weight of the goods transported and the distance carried are used. The tons of

freight carried are multiplied by the miles which the respective shipments are hauled. The sum of the products obtained, which is the total traffic volume, is spoken of as the *ton-miles* of transportation service for the period. The traffic density may be found by dividing the total ton-miles by the number of miles of railroad operated. The quotient is the measure of the railroad's production of freight services per unit of railroad plant —that is, per mile of road operated. Since traffic density does not consider the kind of goods carried, it is a crude measuring stick; but, for a given railroad, it serves to bring out major changes in the volume of business. Tonnage and not dollar volume is measured. The figure should not be overemphasized as between railroads, for low density may be balanced by carrying freight paying higher rates or by low investment in facilities.

Commodities carried and traffic stability. As the traffic density is studied for the volume, the commodity statistics are examined for the light they may throw on probable stability and future traffic trends. The following table of selected cases will serve to illustrate the important differences between the various types of railroads. In practically every instance, the proportion of mines tonnage is high, owing to the importance of coal. Just as the railroads have been likened to the arteries of the body, so the coal corresponds to the heat-producing elements in the blood which provide the necessary energy—in this case for the industrial organism.

The proportions for the New York Central are representative for a highly industrialized area. Almost one-half of all the ton-

CLASSIFICATION OF REVENUE FREIGHT TONNAGE

For the Year Ended December 31, 1940
(Percentages)

Products	*New York Central*	*New Haven*	*Bangor & Aroostook*	*Chesapeake & Ohio*	*Kansas City Southern*	*Burlington*
Agriculture	6.1	10.5	29.6	1.8	6.9	19.5
Animals	1.7	3.2	0.1	0.5	1.8	4.4
Mines	60.5	29.5	16.3	85.7	32.3	39.8
Forests	2.1	4.1	17.3	1.8	16.8	5.5
Manufactures & Misc.	28.3	46.3	35.6	9.6	41.6	29.4
All L. C. L. freight	1.3	6.4	1.1	0.6	0.6	1.4
	100.0	100.0	100.0	100.0	100.0	100.0

nage is coal, chiefly bituminous. The detailed statement of the other various sub-groups shows wide diversification. The next largest items are iron ore, 6.1 per cent, and the several groups of

iron and steel manufactures, which latter grouped together amount to 5.4 per cent.

The New Haven tonnage shows a high proportion of manufactures and merchandise, which is characteristic of the highly developed New England manufacturing region, located outside the area producing the raw materials. About one-third of the mines tonnage was bituminous coal, which is used chiefly in manufacturing and gas production, and a large part (more than bituminous) of the remainder of the mines tonnage was anthracite, which is favored for domestic fuel. L.C.L., or less than carload lot, shipments are generally a small part of total tonnage but the New Haven has considerable of this type, its total exceeding one-eighth of the manufactures and miscellaneous tonnage.

The Bangor & Aroostook, located in Maine, is interested primarily in the potato crop, which ordinarily makes up about one-third of its tonnage and brings in more than one-half of its gross revenues. Pulpwood and lumber are a large part of the forest products, and formerly were the largest tonnage items. The closely related item of paper is an important manufactured commodity.

The Chesapeake & Ohio is a soft coal road with 80 per cent of its tonnage in this primary commodity. The Kansas City Southern, located in the Southwest, shows a diversified tonnage. The large percentage of manufactures seems rather surprising in view of the small percentage of mine products until it is learned that a large amount of refined petroleum and petroleum products fall under the first classification. The Burlington is known as one of the "grain," or "granger," roads, although that term is not as applicable today as formerly, owing to the greater diversity of traffic which now exists in this territory. About one-fourth of its tonnage is bituminous coal.

Traffic stability. The volume of traffic should not merely average high, but should show stability, in order to present the most desirable investment situation. As the result of mergers, the traffic of leading railroads has come to reflect the economic activity of certain large sections of the country in which they operate, so that they are now less subject to the more localized troubles of business. Exceptions, like the Bangor & Aroostook and the Chesapeake & Ohio, may enjoy especially profitable growth or stability, but are usually subject to a correspondingly greater hazard of loss. This risk offers one of the inducements for consolidations which will increase diversification of traffic.

Railroad policy seeks diversification of traffic in order to minimize the chances of idleness in a bad year in any one branch of our economic life. Crop diversification has been valuable to the railroads as well as to the farmers in making for stability.

In this respect, the diversification of the industry of the territory served by the railroad is more important than the commodity diversification. Thus, if a railroad were confined to a small territory dominated by the motor industry, it would show not only the movement of traffic resulting from the carrying of such products, but also the inward movement of raw materials and of manufactures and food products which the population was able to purchase with its production. The study of commodities carried should concentrate, then, on the types of traffic originated in the territory; for with any failure of demand for these, the road will lose not only that business, but also the "imports" of raw materials, merchandise, and food which were made possible by the production. Thus, the inward movement of merchandise for the Bangor & Aroostook is conditioned by the success of the potato crop, the export of which gives the territory its buying power.

Stability which comes from traffic diversification will not be protection against cyclical movements in business. A depression which paralyzes all business inevitably affects the railroads because of their carriage of heavy producers' goods as well as consumption goods. The relatively uniform loss of revenues by most of the major railroads in the difficult years following 1929 is an indication of their wide diversification. Most of the major roads showed a decline in gross revenues very similar to the national average of 50 per cent. The exceptions, in the direction of either greater stability or greater loss of revenue, were characteristically the roads with a lack of diversification. The Bangor & Aroostook and the Chesapeake & Ohio were more stable, showing gross revenue declines of but 27 and 24 per cent, respectively, in the 1929–1932 recession. The Pittsburgh & Lake Erie, with a heavy concentration in coal, ore, and steel and iron tonnage, registered a decline of 63 per cent.

Average length of haul. As between different hauls, some will be more profitable than others. It is generally felt that long hauls represent especially desirable business, in spite of lower rates per mile carried. Normally, the longer hauls are made at a relatively lower cost, since certain costs, especially those in-

curred at the terminals, are not affected by the distance of the shipment. The exceptional case, where long hauls will be less profitable than short hauls, may exist when the long haul is between two points where competing transportation systems have cut their rates abnormally. Another advantage of the long haul is that in competition with the truck the long haul is less frequently lost to the latter. The wholesale method of handling traffic favors the railroads on the longer movements. To the extent that short haul business has been less profitable and has been replaced by longer haul business, the railroads need not look with unmixed regret upon such losses to the competing truck. Because of the greater profit in the long haul and the danger of losing short haul business to the truck competition, railroads with any considerable amount of long haul or through shipment business are regarded as fortunately situated. The Union Pacific is frequently given as an example. The New Haven represents the other extreme, as is shown in the following table of railroads located in various sections:

AVERAGE LENGTH OF FREIGHT HAUL
1925–1940

	1925	1930	1935	1940
Union Pacific	380	404	466	515
Northern Pacific	301	275	319	343
Southern Railway	182	186	197	210
New York Central	202	203	220	215
New Haven	110	131	134	136

The Interstate Commerce Commission's *Statistics of Railways in the United States* for the year ended December 31, 1939, states the average haul of revenue freight for the railroads in the various districts to have been as follows:

	Miles
Eastern District	161.0
Southern District	229.3
Western District	261.6
Average for the United States	203.8

Revenue from passengers. Freight revenue is the most important source of railroad income; but for many railroads, particularly in the densely populated Eastern states, the passenger revenue is important. An exceptional case is that of the New York, New Haven & Hartford, which, in 1940, showed 30.8 per cent of its gross operating revenues coming from this source.

In 1921, its passenger revenues were almost as great as freight revenues.

NEW HAVEN OPERATING REVENUES FOR 1940

Freight Revenues	$50,512,702
Passenger Revenues	26,342,490
Other Operating Revenues	8,748,917
Total	$85,604,109

Passenger transportation is a specialized type of transportation and tends to become very much more profitable as the volume of service grows. It requires special investment in the proper facilities, and involves special problems of management. Because of the fixed expenses which are not easily reduced when traffic declines, the passenger business has been particularly unprofitable since the advent of the private automobile and the bus. The passenger transportation calls for an expensive type of service. The requirements of an exacting time schedule, speed, consideration for the appearance of employees, and equipment call for special expenses. The necessity for speed, for example, will demand special attention to the maintenance of the roadbed.

In 1920, the Interstate Commerce Commission provided rules for segregating freight and passenger service expenses, the results to be used as a form of analysis rather than as a part of the regular statements.[2] Because any division of those expenses which are common to both kinds of service must be somewhat arbitrary, its value has been regarded as theoretical, although possibly useful for shedding light on rate problems for the Commission. More exact information as to the relative costs of the different branches of transportation service might aid in a more scientific construction of rates. The data have had but little significance for the investor-analyst, save that they appear to bear out the opinion generally held that the freight business is more profitable than the passenger business. The combined figures for all of the leading railroads for the years 1927–1939 were reported as shown at the top of page 279.[3]

Other operating revenues. Revenues from mail and express business, as a rule, are shown separately, as being of special im-

[2] Interstate Commerce Commission, *Rules Governing the Separation of Operating Expenses between Freight Service and Passenger Service on Large Steam Railways* (1920). For the results of this analysis of expenses, see *Statistics of Railways in the United States*, published annually by the Commission.

[3] Compiled from Interstate Commerce Commission, *Statistics of Railways in the United States.*

PROFITABLENESS OF FREIGHT AND PASSENGER SERVICE

CLASS I RAILROADS IN THE UNITED STATES (1927–1939)

(Millions of Dollars)

	1939	1935	1932	1930	1929	1927
Freight Revenues	$3,350	$2,894	$2,532	$4,214	$4,979	$4,791
Per Cent of Expenses to Revenues	64.0	64.7	67.0	67.6	67.0	70.3
Passenger Revenues*	$632	$558	$595	$1,067	$1,300	$1,346
Per Cent of Expenses to Revenues	121.0	129.0	119.0	101.2	90.1	89.7

* Note that this title includes revenue from allied services, the expenses for which are not readily separated; for example, excess baggage and express shipments, which are hauled by passenger locomotives.

portance. Excess baggage, milk transportation, switching, water transfers, and the like may, when minor, be shown combined as "other transportation revenues." Other incidental revenues represent receipts from services related to transportation. Into this class fall revenues from dining and buffet, station and train privileges, demurrage, grain elevators and stockyards, power, and rents from property chiefly used for transportation. Joint facility revenues and expenses arise from the joint use by two or more roads of a common property, such as a terminal, a dock, or the like.

Operating expenses. Operating expenses are shown under the following heads (with which New York Central's figures for 1940 are given), and if the railroad's annual report to the stockholders is examined, they may be studied in even greater detail.

Operating Expenses:	*Amount*	*Per Cent*
Maintenance of Way and Structures	$ 39,454,595	14.1
Maintenance of Equipment	77,989,733	28.0
Traffic Expenses	6,596,590	2.4
Transportation Expenses	139,498,310	50.0
General Expenses	9,680,325	3.5
Miscellaneous Operations	5,510,528	2.0
Transportation for Investment (credit)	*55,101*	—
Total	$278,674,980	100.0

Similar figures for all Class I railroads in the United States for 1929, 1932, and 1939 showed the following proportions:

	1939	1932	1929
Maintenance of Way and Structures	16.0	14.6	19.0
Maintenance of Equipment	26.2	25.8	26.7
Traffic Expenses	3.7	4.0	2.9
Transportation Expenses	48.6	48.2	46.2
General Expenses	4.4	6.5	4.2
Miscellaneous Operations	1.3	1.1	1.3
Transportation for Investment (credit)	*.2*	*.2*	*.3*
	100.0	100.0	100.0
Total Operating Expenses (millions of dollars)	2,918	2,403	4,506

"Maintenance of way" consists of expenditures for replacing ties and rails and similar expenses. "Structures" refer to the stations, shops and engine houses, power stations, and the like. "Traffic expenses" are those expenses incurred to get business, the traffic department representing the sales department of the railroad. The direct expenses of rendering transportation service, such as the wages of employees who operate the trains carrying freight and passengers, and the fuel that runs the trains, are the "transportation expenses." "General expenses" are the remaining unclassified expenses incurred in the transportation end of the business and usually of an administrative nature. There remain only those expenses incurred in "miscellaneous operations," such as the cost of operating dining car service, grain elevators, and stockyards. These operations are not transportation operations, but are incidental to the work of transportation. The credit or subtraction for "transportation for investment" is an allowance for the expenses incurred by the company in transporting on its own lines men engaged in, and materials for, construction. This amount is added by the same bookkeeping entry to the Property Investment account.

The maintenance factor. Transportation expenses constitute the major class of operating expenses and, together with the two maintenance accounts, will be the center of interest; but because maintenance can be varied somewhat by the management to suit the times, it is the more closely studied. During a period of hardship, and in order to lessen the decrease in the net income of a road, maintenance may be neglected. Most railroads which fail will be found to have curtailed maintenance in the period immediately preceding their receivership as a result of their struggle to avoid that unhappy state. Receivers relieved of the burden of meeting ordinary obligations usually find it wise to increase maintenance considerably. Moreover, a conservatively managed solvent railroad can make extraordinary expenditures during a period when the revenues are adequate. Before the uniform system of accounts was prescribed, the accounting for maintenance was on occasion arbitrarily handled according to the exigencies of the period.[4]

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[4] During the four years after 1868, the Erie, while under Gould control, increased its Construction account from $49,000,000 to $108,000,000, although its assets remained practically unchanged. A part of this inflation is stated to have been due to the entry of discount on illegally issued bonds among the assets, and

Conservatively managed systems have, in some instances, charged the cost of improvements and betterments to maintenance, instead of showing them as assets. Such accounting understates the value of the properties and the surplus for the period, and fails to do the railroad justice in judging its operations for such a period. On the other hand, such practice puts the railroad in a stronger position for the future. Under the uniform system of accounts prescribed by the Interstate Commerce Commission, deliberate misstatements of this sort, which fail to distinguish between expenditures for assets and those for maintenance, are no longer permitted.

The expenditures referred to are sometimes of such a nature that it is a matter of judgment whether they represent additions to the property or merely replacements. For this reason, ultra-conservatism that seems to be charging improvements to maintenance, when judged by ordinary standards of upkeep, is not to be regarded as a deliberate misstatement of facts although its justification is founded on expediency rather than on good accounting principles. Reports are published for information, and, in so far as they fall short of the exact truth, they are unsatisfactory. Variations of maintenance can be analyzed, however, and so differ from the account juggling that existed in some instances before the Interstate Commerce Commission regulations for account keeping were laid down in 1907.

Variables in maintenance of way. A fixed standard in terms of dollars for judging the adequacy of a road's maintenance is impractical. Even though efficiency is the same, the following factors will produce differences in the cost of maintenance, both between different periods for the same railroad and between different railroads for the same period:

1. Price differences.
   a. The scale of wages and prices of materials will fluctuate from year to year.
   b. Cost of labor and construction material, such as ties and crushed stone, will vary in different sections of the country.

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another part probably to the charging of "actual operating expenses to the Construction account in order to deceive the public as to the condition of the road." Such accounting would overstate current earnings as well as the assets. Ripley, W. Z., *Railroads: Finance and Organization* (New York: Longmans, Green & Co., 1915), p. 22.

2. Character of the road.

a. Traffic density. Between different railroads, greater density of traffic will increase the expense of maintenance.

b. Number of tracks. Where there are extra tracks, there will be more maintenance required per mile of road.

c. Character of traffic. High-grade traffic requiring speed in transportation will require a better roadbed than low-grade, slow-moving traffic.

d. Location of road. The geography of the road may be of considerable importance, as in the case of the northern roads subject to severe weather conditions. The cost of removing snow and ice is placed under the heading "Maintenance of Way and Structures."

Maintenance of equipment. Practice in respect to maintenance of equipment, which, as in the case of maintenance of ways, consists of repairs, depreciation, and retirements, is extremely variable. In one study, the Interstate Commerce Commission found rates for equipment depreciation varying from one-half of one to six per cent of the cost.[5] Management may even vary the rate from year to year.[6] Examination of the allowances made by a group of leading railroads for the years 1915–1917 showed an average rate of 3.33 per cent (of cost) per year.[7] In 1939, the average depreciation for equipment by Class I railroads was 3.52 per cent.[8]

Retirement expense, included under the heading of maintenance in the same way as depreciation, formerly reflected any losses at the time equipment was retired. The loss was the book value (cost less accrued depreciation) remaining at the time of retirement, less any amount recovered from the disposal of the scrap. Today, retirement expense includes only the cost of tearing down and recovering salvage from retired equipment, and

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[5] *I.C.C. Reports,* Vol. 177 (July, 1931), p. 363.

[6] Thus, the New York Central decreased its depreciation of equipment from $13,979,000 in 1932 to $6,440,000 in 1933, although its repairs rose from $36,868,000 to $39,704,000. This reduction in depreciation of $7,539,000 contributed substantially toward the reduction in the deficit in net income from $18,327,000 in 1932 to $5,413,000 in 1933.

[7] *I.C.C. Reports,* Vol. 177, p. 471 *et seq.* Tables given in this report show the practice by years for 16 large railroads for the period 1915–1917. The total accrued depreciation is shown for the years 1914–1930. The highest accumulation was for the Chicago, Burlington & Quincy—52.1 per cent—and the lowest for the Missouri Pacific—15.6 per cent. Additional detailed figures for a longer list of roads appear in Vol. 168, p. 398 *et seq.*

[8] I.C.C., *Statistics of Railways in the United States,* 1939, p. 88.

occasionally, the amortization of extraordinary retirements. Usually, extraordinary retirements are charged off in the Profit and Loss Account at the end of the statement and so lost sight of. Under the "group plan" of accounting for depreciation, the allowance is for the group of similar units rather than individual items and the full cost of any retired unit is charged to the reserve (Accrued Depreciation—Equipment) whether or not it has attained the estimated average service life.

The most common method of studying maintenance—partly, at least, because it is the simplest—is to compare it with gross revenues. The total maintenance in normal years has tended to run about 33 per cent.[9] The actual percentages for all Class I railroads' combined figures are shown in the following table. (Class I roads are those with annual gross operating revenues of over $1,000,000.)

MAINTENANCE RATIOS FOR ALL CLASS I RAILROADS IN THE UNITED STATES

(Based on Combined Operating Figures—Percentages of Gross Revenues)

Year	*Total Maintenance* %	*Maintenance of Way* %	*Maintenance of Equipment* %
1925	33.91	13.34	20.57
1929	32.77	13.62	19.15
1930	32.66	13.36	19.30
1931	32.18	12.67	19.51
1932	31.02	11.23	19.79
1933	29.75	10.41	19.34
1935	31.17	11.41	19.76
1937	31.74	11.90	19.84
1939	30.86	11.69	19.17

From 1922 to 1929, the total ratio fell by slow degrees as a result of the equipment element. The factors making a lower maintenance of equipment ratio possible were (1) increasing traffic, especially in the earlier years; (2) improved condition of

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[9] The chief variations appear among the lesser roads. Thus, the Pittsburgh & Lake Erie generally shows a ratio in excess of 40 per cent. Its figures show:

(Millions of Dollars)

	1929	1932	1940
Gross Revenues	$34,135	$12,521	$23,947
Maintenance of Way	4,064	1,002	1,905
Maintenance of Equipment	11,924	4,446	8,178
Total	$15,988	$ 5,448	$10,083
Ratio	46.9%	42.9%	42.1%

the equipment, that is, a cleaning up of maintenance deferred in the hard years at the beginning of the period; and (3) increased efficiency. The increasing prosperity of the railroads in these years is reflected in the tendency for the maintenance of way per cent to increase slightly. When conditions grew bad after 1929, this expense was contracted even more rapidly than gross revenues declined. Although equipment was neglected, as indicated by the increasing amount in need of repair, the per cent spent on its maintenance rose slightly, but not enough to offset the slashes made on the sums spent for upkeep of way and structures. Partial recovery is seen in the figures after 1933. In general, maintenance expenditures are more subject to managerial control, at least over the short run, than are transportation expenses; of the two classes of maintenance, that of way and structure is the more controllable.

Another method of maintenance study is that on a "per mile of road operated" basis. The operated, rather than the owned, mileage is used because the Income account shows the results for the former. The New York Central Railroad illustrates the importance of the point, for it owns but 3,600 of the 10,900 miles which it operates—the balance being mostly leased, but with some operated under other contracts, as for trackage rights. The table on page 285 shows average figures for some of the leading railroads grouped according to the territory served.

The geographical factor and the closely related character-of-traffic factor show their influence in the marked differences among the several groups of roads shown. Within each group, the influence of volume and value of traffic, chiefly the former, can generally be seen. One indirect method of allowing for the traffic density factor which is particularly appropriate for maintenance of way is to recognize the differences in "miles of road operated" which arise from extra trackage. A mile of road which has been double-tracked will require more expenditure than a single-track line. Since the extra track does not result in doubling the expense, it has been suggested that such extra trackage may be treated as 0.8 of a mile of first track, and sidings, as 0.5 of a mile. By dividing the maintenance of way by the resulting total of "equated track miles," figures more comparable than the simpler per mile of road figures are obtained.

Another method formerly used in checking maintenance of way was the test of ties and rail relaid. A usual standard was that one-twentieth of the rails and one-eighth of the ties should

be replaced each year. With the increased use of heavier rails, possibly balanced by heavier equipment, and the gradual substitution of cross-ties treated with preservatives in place of untreated wood, the usefulness of old standards is somewhat doubtful.[10] Moreover, statistical information is currently reported in

MAINTENANCE PER MILE OF SOME LEADING RAILROADS IN THE UNITED STATES

7-YEAR AVERAGES, 1934–1940
(Compiled from *Moody's Manual of Investments—1941*)

	Of Way	*Of Equipment*	*Operating Revenues*
Eastern Trunk Lines:			
Pennsylvania	$3,800	$7,988	$39,725
New York Central	3,606	7,128	33,867
Erie	3,147	6,808	34,787
Baltimore and Ohio	2,259	5,335	24,298
Coal Roads:			
Delaware, Lackawanna and Western (a)	3,798	9,085	48,456
Reading (a)	2,951	6,962	38,464
Lehigh Valley (a)	2,269	6,126	33,955
Norfolk and Western (b)	4,262	7,597	40,224
Chesapeake and Ohio (b)	3,768	7,103	38,777
Central:			
Illinois Central	1,566	3,504	16,266
Wabash	2,206	3,019	17,819
Chicago and Northwestern	1,591	2,183	10,141
Chicago, Burlington & Quincy	1,354	1,762	10,284
Chicago, Rock Island & Pacific	1,301	1,879	9,366
Southern:			
Louisville and Nashville	1,842	3,887	17,077
Southern	1,700	2,508	14,040
Atlantic Coast Line	965	1,718	8,695
Seaboard Air Line	1,400	7,055	9,329
South Central:			
Kansas City Southern	1,352	2,220	14,367
Missouri Pacific	1,696	2,277	11,537
Missouri, Kansas and Texas	1,138	1,465	8,722
Southwestern Transcontinental:			
Atchison, Topeka & Santa Fe (system)	1,650	2,599	11,478
Southern Pacific (system)	1,586	2,592	15,114
Northwestern Transcontinental:			
Union Pacific (system)	1,672	2,832	15,234
Chicago, Milwaukee, St. Paul & Pacific	1,513	1,742	9,295
Northern Pacific	1,093	1,847	8,959
Great Northern	1,183	1,739	10,681

(*a*) "Anthracite" Roads
(*b*) "Bituminous" Roads

[10] Willard, Wm. C., *Maintenance of Way and Structures* (New York: McGraw-Hill Book Co., 1915), pp. 70, 87, and 148.

a form which makes the application of such a check difficult or impossible.

Detailed study of the maintenance of equipment may be made by comparing the expense for each class of equipment—locomotives, freight cars, and passenger cars—with the amount of use given it. Utilization is measured by the distances which the equipment moves. Thus, a locomotive traveling one hundred miles gives one hundred locomotive-miles of usage. The total maintenance of locomotives—including repairs, depreciation, and retirements—is divided by the locomotive-miles of service to obtain that expense on a "per locomotive-mile" basis. Similarly, the maintenance of the other equipment on a "per freight-car-mile" and a "per passenger-car-mile" basis gives figures that cover the other two major classes. Comparison of such figures from year to year and among railroads in the same territory is often fruitful.

Sakolski cites an interesting case of analysis of this sort: [11]

The Illinois Central, in 1907, began to "farm out" its freight cars for repairs, with the result that the cost of freight car upkeep increased steadily, jumping from $3,924,296 in 1906 to $7,975,992 in 1910. An investigation finally revealed that gross frauds had been practiced in the company's repair department. Had the company's directors compared its freight car maintenance cost with those of competing companies, the condition of affairs might have been discovered much sooner. The stockholders might have been spared the heavy loss, estimated in some quarters as high as $6,000,000. Thus, a comparison of freight car maintenance of the Illinois Central, the Cincinnati, New Orleans & Texas Pacific, and the Mobile & Ohio would have shown:

	Illinois Central		Cin., N. O. & Tex. Pac.		Mobile & Ohio	
	Per Frt. Car	*Per Frt. Car Mile*	*Per Frt. Car*	*Per Frt. Car Mile*	*Per Frt. Car*	*Per Frt. Car Mile*
Year	$	¢	$	¢	$	¢
1908.....	86.02	1.03	91.47	1.63	75.92	0.72
1909.....	99.08	1.28	69.72	1.17	60.53	0.66
1910.....	130.22	1.51	78.04	1.20	94.94	0.99

One check upon the adequacy of the equipment maintenance is the reported condition of the various classes of rolling stock. The railroad reports what part of the equipment is in good order and what part is in need of repairs. When neglect is present, the percentage of unserviceable equipment will rise to an un-

[11] Sakolski, A. M., *American Railroad Economics* (New York: Macmillan, 1913), pp. 207 and 208. It is stated that computations were taken from Messrs. Price, Waterhouse & Company's *Compilation of Railroad Statistics.*

healthy extent. While the change in percentage is the significant thing, any increase in unserviceable locomotives or freight cars to a figure in excess of the averages in the normal years, such as that shown in the table below, should lead to a careful check. When traffic is greatly depressed, such unserviceable equipment may be unused and so may not interfere with the quality of service, but it does show an accumulation of deferred maintenance to burden the expenses in subsequent years. If not cared for, the road may be forced to spend uneconomically large amounts for hire of equipment.

EQUIPMENT CONDITION OF LARGE STEAM RAILWAYS IN THE UNITED STATES: 1921–1939

PERCENTAGES OF UNSERVICEABLE FREIGHT EQUIPMENT

	1921	1925	1927	1929	1930	1931	1932
Locomotives	24.0	17.8	16.1	16.4	17.5	20.7	26.6
Cars	13.2	7.7	5.9	6.0	6.2	7.8	10.6
	1933	1934	1935	1936	1937	1938	1939
Locomotives	32.7	33.9	33.8	30.4	25.5	29.4	29.7
Cars	14.2	14.6	14.0	12.8	10.1	11.9	11.3

Ordinarily, the percentages for the less numerous passenger locomotives are very similar to those for freight locomotives.

Operating ratio. The ratio of operating expenses to operating revenues is known as the "operating ratio." This percentage is sometimes regarded as the measure of operating efficiency, but this notion is hardly correct. A high ratio may be the result of external conditions entirely beyond the control of the management—as when the roads are given a schedule of inadequate rates by the regulating commission, or suffer from business depression. The latter causes revenues to fall, but the railroads may find a corresponding reduction of expenses impossible because of certain expenses which are more or less fixed regardless of the volume of traffic. The operating ratio may be more properly regarded as a rough indicator of the varying profitableness of the traffic, and as such it is very important to the investor. But this use is also limited; for if gross revenues shrink very much, net earnings will drop to an unprofitable level even though a normal operating ratio is maintained. Furthermore, analysis of the maintenance is always necessary to determine whether the operating ratio is fairly stated or not.

There is no absolute standard for the operating ratio, although 70 per cent is regarded as "normal." Roads with a higher ratio

usually are not earning a satisfactory return; when the ratio is lower, the situation is likely to be excellent. Where roads are in the pioneer stage, their operating ratios might conceivably be lower than after they develop. In fact, this might be necessary; for with a small volume of traffic, a wide margin of profit would be needed in order to meet the fixed charges. The margin of profit can become narrower as the business becomes heavier and still pay a fair return. The only requirement in any case is that the road earn a fair return on its investment. As the railroad develops, the investment per mile of road will increase; but this increase is not likely to be as rapid as that of the volume of traffic carried.

This tendency is illustrated by the following figures showing the comparative growth of freight traffic density, which is discussed later in this chapter, and the investment per mile of road for all Class I railroads in the United States. The passenger traffic density, which is omitted from this table, increased even more rapidly than the freight traffic density during this period.

COMPARISON OF INVESTMENT PER MILE OF ROAD AND FREIGHT TRAFFIC DENSITY, 1890–1939

	1890	1900	1910	1920	1930	1939
Investment per Mile of Road	$50,636	$56,567	$64,382	$81,777	$100,027	$103,426
Per Cent Increase During Decade	———	12	14	27	22	3
Freight Traffic Density (in thousands of ton-miles)	487	735	1,071	1,597	1,481	1,355
Per Cent Increase During Decade	———	51	46	49	7*	9*

* Decrease.

After 1920, freight traffic density rose through 1929, but at a slower rate than investment per mile of road. Truck competition came onto the scene during this period. Passenger traffic declined seriously—partly because of the bus, and even more because of the private automobile. Railroad troubles of the 1930's are partially reflected in the figures for 1930 and 1939.

Taxes. Three items appear after the "net revenue from railway operations," namely, taxes, hire of equipment, and joint facility rents. Their close relation to operations is evident from the caption "Net Railway *Operating* Income," which *follows* their deduction. The second and third items may be insignificant for some railroads or show credit rather than debit balances. Hire of equipment results from charges between companies for

the use of equipment—a natural result of freight shipments originating on one road and ending on another—and payments to individuals and companies for the use of private equipment.[12] Joint facility rents are paid and received for the use of trackage, yards, bridges, and stations owned by one railroad and used by another.

Taxes are always of first-rate importance, and while a necessary incident to operation, are separately stated because they are subject to political control and not to the action of the company. Their amount will vary from time to time and from state to state. The bulk of the item will consist of local property taxes on the real estate and personalty of the company. In good times, the Federal income tax upon net profits, taking between an eighth and a third of that balance, will be important. Other taxes of lesser importance will be taxes on capital stock, on sales or revenues, and on franchises.[13]

To place the Federal income tax in the statement next to the operating section, as the railroads do, is unusual—but is justified on the grounds that the position of the railroads is very different from that of the industrial corporation. With a flat percentage normal income tax to be paid by business corporations, the Federal government is ordinarily regarded as sharing in the corporate profits, taking much in good times and nothing when profits are absent. The railroads, like the utilities, are presumably regulated so as to permit a "fair return" upon their capital investment. (The position of the latter is stated more precisely in the next chapter.) Consequently, from the railroad's viewpoint, the income tax is no different from any other tax. It is merely one more deduction, and railroad rates are supposed to be so adjusted as to permit this tax to be covered and leave a balance that will amount to the fair return. Actually, in recent years, the force of competing transportation agencies and political pressure have prevented adequate rate adjustments.

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[12] Rent for equipment acquired upon leasing a whole railroad is included under "Rent for Leased Roads"; rentals which represent interest upon equipment obligations issued to acquire rolling stock are included under "Interest on Funded Debt."

[13] The relative importance of taxes as seen by the railroads is presented in *Railway Taxation* by the Bureau of Railway Economics (Special Series No. 61, 1934). The subsequent record of taxes may be traced in *Statistics of Railways in the United States*. In 1941, taxes reached an all-time record high in amount and exceeded 10 per cent of gross revenues for the first time in railroad history. In 1929, taxes were 6 per cent of revenues.

Other income. The "other income," or nonoperating income, consists of rents, dividends, interest, and sometimes profits from nontransportation property. The chief investments are generally in the stocks and bonds of other railroads, particularly the former. Such holdings may create closer working relations or create a holding company-subsidiary relationship. In many cases, the whole stock of the subsidiary is owned, thus making the subsidiary wholly subject to the control of the parent company—under which circumstances the actual net profit or loss of the subsidiary is a much better measure of the profitableness of the property than are the dividends received.

Moreover, when the subsidiary is separately operated, the element of control makes it possible for the owning corporation to change its dividend policy or even the earnings. The amount of the earnings may be the result of a traffic agreement which arbitrarily divides the rate charged on through traffic that is carried over both the subsidiary's and parent company's lines. It might also be pointed out that control of a small road may be purchased for the sake of the traffic it will bring to the system, even though such a feeder line may show a continued loss. The loss represents the cost of securing the additional traffic, and should be shown in the reports of the parent company as one of the losses of the period—a result which may be had by making a consolidated report of the operation of the system as a whole.[14] Railroad accounting is laggard in its failure to offer consolidated figures.

The large importance of investment income to the New York Central is apparent from the following table showing the net railway operating income and the nonoperating income:

COMPARISON OF OPERATING AND OTHER INCOME

1934–1940

(Millions of Dollars)

	1934	1935	1936	1937	1938	1939	1940
Operating Income	29.2	36.7	45.3	36.0	15.6	37.3	44.1
Nonoperating Income	23.2	22.6	21.8	23.6	14.6	16.3	17.6

Other railroads showing a substantial proportion of nonoperating income are the Pennsylvania, the Union Pacific, the Northern

[14] The technique of the consolidated report is discussed in Chapter XVIII, "Holding Companies."

Pacific, and the Great Northern. In order to obtain any genuine conception of the earning power of such roads, the actual and potential earnings of these holdings must be studied. The investments of the New York Central Railroad fall mostly into three classes: (a) miscellaneous physical property, (b) investments in affiliated railroad companies, chiefly stock but also including bonds and advances, and (c) investments, mostly stocks, of nonaffiliated railroad companies. For the New York Central, miscellaneous physical property consists largely of real estate, such as the New York Central Building and Hotel Commodore in New York City. It has leased air rights over portions of its subterranean tracks in that city. Other roads own hotels and mining property.

The most important holdings in affiliated railroad companies are those in the Cleveland, Cincinnati, Chicago and St. Louis Railway, the Michigan Central Railroad, and the Pittsburgh & Lake Erie Railroad. Often in such cases the holding company will have leased the property of the subsidiary and so become the guarantor of the interest and dividends upon the latter's securities. Thus, such dividends will appear under nonoperating income and also under rents for leased roads, a deduction from income. No such duplicate items appear in the New York Central statement for the Michigan Central and the Cleveland, Cincinnati, Chicago and St. Louis dividends, because their leases specifically provide that rent shall cover only dividends on stock not held by the lessee (i.e., N. Y. Central). Footnotes to the Income Account indicate $4,331,859 of such intercompany transactions for the New York Central in 1940. Similarly, there was $1,443,272 in connection with investments in joint facilities shared with other railroads.

The chief nonaffiliated stock investment in this case is a block of $13,145,000 of common and $21,855,000 of first and second preferred in the Reading Company. This stock represents a 25 per cent interest; 42 per cent is owned by the Baltimore and Ohio. Stocks of this sort in independently operated railroads, whether owned directly or through the medium of an investment company, are clearly the ones which require analysis. The dividends they pay may, and during good years often do, fail to reflect actual earning power. They constitute hidden earning power, as it were. At other times, their dividends may exceed earnings and conceal declining earnings from the eye of the superficial reader.

Deductions from income. The "deductions from income" have in recent years been divided to show (a) miscellaneous deductions, (b) fixed charges, and (c) contingent charges. The first consists of expenses incurred in connection with the earning of nonoperating income, including miscellaneous rents, miscellaneous taxes, miscellaneous income charges and minor financial expenses. The fixed charges are the fixed costs of securing capital, including rent for leased roads, and interest and amortization of discount on funded debt. By paying rent for leased roads, the company saves so much money which would otherwise have to be paid out in interest and dividends on security issues of its own. Interest on funded debt should be given special attention on account of its size and because it represents payments to bondholders which can be met only provided the surplus of revenues up to this point is sufficient. The threat of receivership, however, will ordinarily force the management to cut even such a necessary item as maintenance and stretch their finances to the limit in order to avoid default. The funded debt includes the total par value of unmatured debt, maturing more than two years from date of issue, exclusive of nonnegotiable debt to affiliated companies.[15] It consists almost entirely of bond issues. The measure of security of the funded debt is found in the customary "times interest earned" figure. Because the payment of interest upon income bonds can be omitted if not earned, it is a contingent charge, much like preferred dividends, and so stated separately.

In the case of the Kansas City Southern, if all deductions from income other than bond interest are subtracted to obtain the amount available for interest, and the relatively insignificant equipment trust obligations are ignored, there is shown:

Average Income Available for Interest on Funded Debt (5 years' results, 1936–1940)		$3,481,000
Interest on Funded Debt:		
First 3's	$ 900,000	
Refunding and Improvement 5's	1,046,000	
Secured Serial 3's	68,000	2,014,000
Net Surplus over Interest Requirements		$1,467,000

The total interest was earned 1.73 times. The "times earned" for the first mortgage bonds alone was 3.87. In the more complex case of the New York Central, the rents for leased road are clearly as much a fixed charge as is interest on bonds. Conse-

[15] See the I.C.C. account classification for steam railroads (*Account No. 755, Funded Debt Unmatured*).

quently, in railroad finance, where such leasing is most common, the "times fixed charges earned" is regarded as a more satisfactory measuring stick of safety than "times interest earned." In computing this figure, all other deductions from income except the fixed charges are customarily subtracted in order to arrive at the balance available. The fixed charges figure used is the sum of (1) rent for leased roads and equipment, (2) interest and amortization of discount on funded debt, and (3) interest on unfunded debt. The last item is usually included as a precaution, since it generally indicates a sale of securities whenever it is substantial, and any large amount of unfunded debt would be regarded as unsafe for a railroad. Computed on this basis, the "times fixed charges earned" for the New York Central in 1940 was 1.23 ($60,247,938 ÷ $48,982,854), as against a "times (funded debt) interest earned" of 1.45 ($36,548,566 ÷ $25,283,-482), in which latter computation the rents and unfunded debt interest are subtracted from available income as though prior charges. The former figure is the more generally used measure but is not wholly satisfactory in this particular case because the fixed charges include some of the rents which the company pays to itself because of its lease of the railroads whose securities it holds, as indicated in the footnote to the Income Account. The elimination of these inter-company transactions would eliminate a substantial fraction of the rental charges and a similar sum from the nonoperating income. This company has eliminated those amounts which would accrue to it as dividends on stocks of affiliated companies, such as the Michigan Central and the Cleveland, Cincinnati, Chicago, and St. Louis Railway. However, the interest from its bond holdings in the latter leased road appear under rentals and under interest income.[16]

In studying individual issues, the procedure suggested in the Kansas City Southern illustration would be followed. Rentals of strongly situated and profitable roads would be regarded as prior, just as would the interest on a bond with a prior mortgage on good property. Each of the numerous liens and leases need not be measured, but all may be put into a few large groups likely to obtain substantially similar treatment in the event of re-

[16] It is apparent that the situation calls for a consolidated statement as well as the form of report actually given. Since the New York Central actually operates most of its controlled subsidiaries, the intercompany complications are found chiefly in the nonoperating section of the income statement, which is not on a consolidated basis.

organization, and the coverage, or "times earned," computed for each group.

Net income. The net income, which is the balance remaining after the deduction of fixed and contingent interest charges, is usually spoken of as the "amount available for dividends," and is the figure used in calculating the percentage earned on the preferred stock. The computation of the number of times the combined preferred dividends and fixed charges have been earned gives a measure which makes it possible to compare the coverage of the preferred stock with that of junior bonds. The balance remaining for the common stock after the prescribed dividend on the preferred stock has been deducted is calculated as a percentage on the common stock, or is stated as so many dollars earned per share.

The dividends may be subtracted from the net income at this point in the Income Account in a section headed "Disposition of Net Income." This section is lacking in the illustrative New York Central report. Here also may be subtracted certain surplus appropriations, such as "income applied to sinking and other reserve funds" and "income appropriated for investment in physical property." Both dividends and surplus appropriations may be shown instead in the Profit and Loss section mentioned below.

Dividends. Even though earnings have been accurately stated, the net income may not represent an amount available for dividends. Those miscellaneous losses and gains classed as profit and loss adjustments still remain to be stated. The final section of the statement showing these adjustments, which is called the Profit and Loss account, contains: (1) loss and gain items not properly a part of the current year's operation; (2) the dividends for the period; and (3) any other changes in surplus which are neither expense nor income. The practice of locking up surplus in special accounts as special surplus reserves or as appropriated surplus is common among railroads, and is illustrated in the item "Surplus Appropriated for Investment in Physical Property." The "Debits from retired road property" might represent inadequate depreciation allowances in prior years or a loss caused by abandonment and retirement of certain mileage.

Aside from the surplus appropriations, the general policy of a railroad directorate may be to retain the earnings rather than to disburse them to the stockholders. The more conservatively managed American railroads have retained a large part of their

earnings for expansion. From the standpoint of securing funds, this reinvestment of earnings has been the equivalent of selling small blocks of stock, and in other respects has probably been superior to such a procedure. As shown in the final figures, the New York Central has retained $178,000,000 in its Profit and Loss, which, exclusive of other surplus, is equal to 32 per cent of the par value of the outstanding stock.

Supplementary statistics. As has already been shown in this chapter, the income statement is supplemented by certain required statistical information which aids in analysis. The general purpose of this material is to disclose weakness or strength that will develop unfavorably or favorably for the investor in future operations. The chief of these statistical data studied have been the commodity statistics, coal consumption figures, and certain other material bearing upon operating efficiency, such as traffic density and train movements. The commodity statistics have already been discussed. The pounds of coal consumed "per thousand gross ton-miles" of traffic moved is an index of economy for one of the important elements of railroad operating expense. With an increase in the use of electric power, of oil-burning steam locomotives, and possibly of Diesel engines, this measure may have less value.

Ton-miles per train-mile. "Railroad transportation consists essentially of buying train mileage and selling ton-miles and passenger-miles."[17] This statement is based on the fact that the expenditures for labor and supplies per train-mile do not vary greatly with the variation in the number of cars hauled, which has been one of the reasons for the ever-growing use of heavier locomotives. An increase in the volume of traffic handled does not ordinarily require a proportionate increase in train-miles, so that, others things being equal, the railroad is most efficient which can show the highest proportion of ton-miles to train-miles.

Briefly, the factors which may vary the trainload are:

1. Traffic density.
2. Proportion of local to through freight.
3. Grade and curvature of roadbed.
4. Efficiency in loading.
5. Efficiency of equipment employed.

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[17] Sakolski, A. M., *American Railroad Economics* (New York: The Macmillan Co., 1913), p. 152. The same principle was developed earlier in Thomas F. Woodlock's *The Anatomy of a Railroad Report and Ton-Mile Cost* (New York: Doubleday, Page & Co., 1900), pp. 68–73 and 104–105.

Whenever traffic density is low, a railroad is not justified in using such heavy equipment or such long trains as it otherwise would. In order to give proper service, it is essential that it be reasonably prompt. An attempt to assemble too long trains might interfere with speed. The character of traffic will be an indirect influence, as it affects traffic density. Coal being heavier than wheat, a coal road can show heavier tonnage than a grain road; but the apparent advantage will be offset by the higher rates paid by the latter commodity.

Since local freight is handled in relatively smaller carloads than is through freight, a large proportion of the former class of traffic will reduce the "average tons per loaded-car-mile" and, in turn, the average trainload.

Difficult grades and considerable curvature increase the labor of hauling and reduce the hauling capacity of the locomotives, consequently cutting down the size of the average trainload. Grades and curvature are largely settled once a railroad is built, although occasionally important improvements are made.[18]

Efficiency in loading is a factor which can be improved by a management capable of enlisting the co-operation of shippers in loading cars more nearly to capacity. The efficiency of the equipment, on the other hand, is partly a matter of securing equipment with a capacity suitable to the needs of the road, and partly a matter of adequate maintenance. Trainload performance should be examined if there appears to be inadequate maintenance of equipment—particularly of locomotives, since poorly maintained locomotives may cause a reduction in the size of trains.

The statistics of a railroad will show the pertinent factors with reference to traffic and loading, examples of which, drawn from the report of the New York Central, are shown on page 297.

The first two figures, showing freight traffic in terms of tonnage and of ton-miles, reflect the recovery in 1940 over 1939. The percentage increase in the ton-miles is slightly smaller than that in tonnage because of the decline in the average length of haul from 218 to 215 miles.

If operated mileage remained unchanged from year to year,

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[18] An example is the Natron Cut-Off of the Southern Pacific between Springfield Junction, Oregon, and Weed, California, which shortened the distance between San Francisco and Portland by approximately 20 miles and provided a route over the Cascade Range with grades of 95 feet to the mile, where the old route over the Siskiyou Range had grades of 174 feet to the mile.

the traffic density would be expected to vary in the same proportion as the ton-miles, as is substantially the case here. Should the railroad decrease its mileage, losing unprofitable mileage having little traffic, the average traffic density would rise by a somewhat higher per cent than the ton-miles carried.

This favorable increase in traffic and traffic density was not affected adversely by any important unfavorable rate changes. Revenues per ton and per ton-mile show almost no change.

(I = increase; D = decrease.)	*1940*		*Comparison with 1939*
Revenue Freight Carried (tons)	136,549,195	I	17,256,190
Revenue Freight Carried One Mile (millions)	29,308	I	3,279
Traffic Density (ton-miles per mile of road operated)	2,695,596	I	316,322
Length of Haul (average miles each revenue ton was carried)	214.6	D	3.6
Average Revenue per ton of Freight	$1.98	D	$0.03
Average Revenue per Ton-Mile	0.92¢	0	Same
Average Revenue per Train-Mile	$7.80	I	$0.28
Loading Figures:			
Average Loaded Cars per Train	33.0	I	0.5
Average Empty Cars per Train	22.5	I	0.3
Per Cent of Loaded to Total Car-Miles	59.5	0	Same
Car Loading (revenue ton-miles per loaded car-mile)	25.66	I	0.60
Average Trainload (ton-miles of revenue freight per train-mile)	846	I	32

That the traffic increase was turned to good advantage is indicated by the rise in the per train-mile revenue. An explanation is found in the increased number of loaded cars per train and the heavier loading of cars. The average number of loaded cars per train was stepped up and the number of empty cars per train was increased at substantially the same rates, so that the percentage of loaded to total car-miles remained unchanged. In this connection, diversification of traffic is generally advantageous, since it *tends* to reduce the proportion of empty cars. A railroad that moves little else but grain or coal has to bear the expense of returning the empty cars to the source of traffic. When there is return traffic, say, in the form of merchandise, the proportion of empty cars is reduced. Since the operating costs are not increased in proportion to the increased utilization of the equipment, the costs per ton-mile of freight moved are reduced.

In addition to the increase in the number of loaded cars, the

average carload rose. The combination of these factors increased the average trainload so that the railroad enjoyed the very favorable end result of being able to sell 846 ton-miles of service for each train-mile of costs in 1940 in contrast with the figure 815 for 1939. This improvement in operating efficiency helps to explain the larger increase in net than in gross revenues for the period.

Analyzing operating expenses. Traffic statistics as an aid in the analysis of operating expenses are usually limited in their application to the item of maintenance. When the distances traveled by the equipment are known, it is possible to calculate the maintenance of locomotives—for example, on a per-mile-run basis. However, it may be necessary in some instances to make allowance for varying conditions due to differences in type of equipment of the several roads and to changes from year to year in the cost of labor and material.

One of the most interesting examples of maintenance analysis is Professor Cole's study of the Atchison, Topeka & Santa Fe Railroad between the date of its reorganization in 1889 and its bankruptcy in 1893. The case illustrates how the elements described in this chapter may be drawn together to show the operating efficiency and the degree to which a proper maintenance policy is being pursued. In this instance the study reveals, first, that the maintenance was inadequate—which is indicated by comparisons made with similar roads—and second, that the inadequacy of the equipment was evidenced by the decline in operating efficiency.[19]

The figures were as follows:

	Gross Earnings per Mile	*Net Earnings per Mile*	*Percentage Operating Ratio*
1890	$4,335	$1,472	68
1891	4,733	1,353	75
1892	5,114	1,576	70
1893	5,523	1,699	69

	Maintenance of Way per Mile	*Maintenance of Equipment per Mile Run*		
		Locomotives	*Passenger Cars*	*Freight Cars*
1890	$633	$0.043	$0.0059	$0.0043
1891	717	0.050	0.0071	0.0047
1892	645	0.055	0.0097	0.0055
1893	741	0.052	0.0090	0.0059

[19] Cole, Wm. M., *Accounts, Their Construction and Interpretation* (Boston: Houghton, Mifflin Co., 1915), pp. 230–239.

An analysis of the operating expenses shows an undue increase as compared with the increase in business.

INCREASES IN 1891

	Per Cent
Gross Earnings	8
Ton-Miles	4¼
Cost of Labor for Transportation ($4,300,000 to $5,400,000)	24
Cost of Fuel ($2,400,000 to $2,800,000)	15

However, the increase cannot be explained by wage increases or increased cost of fuel alone. The other causes are:

1. The average trainload fell 7½ per cent in 1891.
2. Locomotives were driven farther, but freight cars traveled a shorter average distance.
3. Earnings per train-mile decreased.
4. Expenses per train-mile increased.

These facts would indicate poor economy in management, in contrast to the fairly steady increase of gross and net earnings on a per-mile basis. Professor Cole states the case in regard to the maintenance, and so, the incorrectness of the net earnings, as follows:

> Rails cannot ordinarily be counted upon to last more than twenty years; a road should, therefore, re-lay about one-twentieth (or more) of its line each year. The Atchison took three years to re-lay one-twentieth (1891, 152 miles; 1892, 193 miles; 1893, 118 miles). The Southern Pacific, in the same years that the Atchison was spending an average of $684 per mile for maintenance, was spending an average of $1,083, and it was not then as now accumulating a large reserve for betterments. The average for the Northern Pacific, the Southern Pacific, and the Union Pacific, combined, was for three years $982. The figures for maintenance of equipment are also extremely low. The average American maintenance for locomotives is about seven cents per mile run; for freight cars, six mills. The figures for the Atchison show locomotive maintenance wholly inadequate, and car maintenance adequate only in the last two of the four years. Does this explain why the loads were light and the expense of hauling heavy in 1891?

Summary. From the foregoing discussion of the railroad income statement, it is apparent that much can be learned by comparing the individual railroad's record from year to year and with the corresponding figures for similarly situated roads. Averages should not be set up as standards of performance, or they will be more misleading than helpful. Differences in operating conditions make it unfair to compare the operations of railroads in different parts of the country. Again, changes in

the price level from year to year make it impossible to say that so much should be spent for a given thing, such as maintenance of equipment per mile run, even when a single railroad is being studied.

To summarize, the chief points to be covered in analyzing the income statement will be:

1. *Operating revenues.* The revenues are the joint result of volume and rates. The former will be studied for the light that may be thrown upon future trends and stability. Rate changes are significant in relation to changes in operating costs.

2. *Operating expenses.* These expenses are watched in relation to revenues, through the operating ratio. Because maintenance is the most readily varied by management, it is subjected to the most thorough scrutiny for the revelations which it may furnish relative to actual, as distinguished from reported, earning power and the condition of facilities for rendering efficient service.

3. *Nonoperating income.* The relative importance of outside income is noted and then examined to see to what extent it represents the actual and potential income of property underlying the most important securities.

4. *Income deductions.* The fixed charges, consisting mostly of rents and bond interest, are compared with the total result of the preceding items—the total income less miscellaneous deductions from income. The "times earned" figures offer a statistical measure of the strength of the company, which must be interpreted in the light of the analysis of details of the preceding sections of the income statement.

5. *Net earnings and dividends.* The position of any preferred stock is measured after the manner of a junior bond. Since the common stock is the claimant to the residuum, all the qualifications and tendencies discovered in the analysis register upon its earnings.

CHAPTER XII

Railroad Statements (Continued)

The Balance Sheet

Introductory. The balance sheet of a railroad is unique in form and is usually of less importance than the Income account. As a practical matter, much time should not ordinarily be spent on the detailed points of the balance sheet. The nature and meaning of the chief items should be studied, however, lest, as so often happens, emphasis be wrongly placed.

The general form of the balance sheet is as follows:

Assets	*Liabilities*
Investments	Stock
Current Assets	Government Grants
Deferred Assets	Long Term Debt
Unadjusted Debits	Capital Liability Adjustments
	Current Liabilities
	Deferred Liabilities
	Unadjusted Credits
	Surplus

The terms for the headings of the subdivisions of the railroad balance sheet do not all have the same meaning as they have in other fields. Investments, deferred assets and liabilities, and unadjusted debits and credits will have to be redefined. Moreover, the order of the items is distinctive.

The balance sheet may be studied concretely by using the condensed statement published in the 1940 report of the New York Central Railroad. Ordinarily, it is advantageous to compare the balance sheet with the balance sheets of previous years, but limitations of space prevent such a comparison here.

Investments. "Investments" in the railroad balance sheet includes all the fixed, or capital, assets of the company both (1) the physical property directly owned and used for transportation service, and (2) its outside investments. The first consists chiefly of road and equipment, but also includes improvements

on leased railway property; the second, of nonoperating fixed assets, which are (1) miscellaneous physical property, that is, mines, hotels, commercial power plants, and real estate not used for transportation; (2) stocks, bonds, notes, and advances, shown as "Investments in Affiliated Companies"; and sometimes (3) other investments. Illustrations of all are found in the balance sheet of the New York Central Railroad. For those who are interested in tracing the "investments" historically, it should be noted that some roads report the additions to the road and equipment during the year in a separate schedule, a practice which permits an analysis of the additions from year to year.[1]

The equipment acquired under trust agreement should be shown apart from that which is owned outright without encumbrance as in this balance sheet. When equipment is purchased on this plan, its legal title rests in a trustee in order to secure the equipment trust certificates which are sold to pay for the equipment. After World War I, the down payment became characteristically one-fourth of the purchase price, and the certificates were given for the balance, with serial maturities over a fifteen-year period. The down payment was sometimes reduced in the difficult years of the 1930's. The certificates are highly regarded as investments, payments usually being maintained even by bankrupt roads, and are a cheap method of financing equipment purchases.

To determine the net book value of the road and equipment, the amount of the liability item "accrued depreciation" should be subtracted. (It will be noted that this title is much more accurately descriptive of the nature of the item than the "reserve" for depreciation used in other fields.) The amounts accrued for the depreciation of road are nominal. To the extent that this asset consists of roadbed, corresponding to land, this practice of reporting maintenance with no depreciation charges is understandable, but actual depreciation of structures, such as stations, is undoubtedly greatly understated. Even the allowances for

[1] From 1911 to 1914 inclusive, the Road and Equipment, or property, account of the railroads was divided under two headings: the first read "Investments to 1907," and the second showed the separate amounts of road and equipment acquired since that date.

Investments prior to 1907 were not recorded under the strict accounting classification inaugurated by the Interstate Commerce Commission in the year 1907. In some cases, the Asset account had been charged with fictitious amounts, including such things as abandoned property, discounts on bonds, and other items without asset value. Often road and equipment were not even shown as separate amounts in the reports of companies which followed this loose practice.

THE NEW YORK CENTRAL RAILROAD COMPANY

CONDENSED GENERAL BALANCE SHEET
December 31, 1940

Assets

Investments:	
Investment in Road	$701,056,155
Investment in Equipment	
Trust	84,203,011
Owned	307,814,044
Improvements on Leased Railway Property	148,562,398
Sinking Funds	109,191
Deposits in Lieu of Mortgaged Property Sold	60,754
Miscellaneous Physical Property	51,011,180
Investments in Affiliated Companies (Note A)	418,376,311
Other Investments (Note A)	40,003,796
Total Investments	$1,751,196,840
Current Assets:	
Cash (Note B)	$29,275,107
Time Drafts and Deposits	45,000
Special Deposits*	3,380,180
Loans and Bills Receivable	61,001
Traffic and Car-Service Balances Receivable	2,489,572
Net Balance Receivable from Agents and Conductors (Note B)	6,338,749
Miscellaneous Accounts Receivable	7,471,724
Material and Supplies	28,229,558
Interest and Dividends Receivable	2,038,075
Rents Receivable	682,683
Other Current Assets	573,911
Total Current Assets	$80,585,560
Deferred Assets:	
Working Fund Advances	$181,649
Insurance and Other Funds	1,672,600
Other Deferred Assets	3,641,351
Total Deferred Assets	$5,495,600
Unadjusted Debits:	
Rents and Insurance Premiums Paid in Advance	$72,914
Discount on Funded Debt	—
Other Unadjusted Debits	6,751,038
Total Unadjusted Debits	$6,823,952
Total	$1,844,101,952

* Greater detail in original balance sheet.
NOTE A.—Carried at cost, or less.
NOTE B.—Includes $1,230,318.69 in Canadian funds.

This balance sheet does not include the assets or liabilities of lessor, affiliated, terminal or other companies, nor the liability of The New York Central Railroad Company as guarantor or under leases or otherwise with respect to the securities or obligations of such companies.

THE NEW YORK CENTRAL RAILROAD COMPANY

LIABILITIES

Stock:	
Capital Stock	$562,332,642
Governmental Grants:	
Grants in aid of construction	$6,149,120
Long-Term Debt:	
Funded Debt Unmatured*	$648,732,200
Nonnegotiable Debt to Affiliated Companies*	56,001,282
Total Long Term Debt	$704,733,482
Total Capitalization	$1,273,215,244
Current Liabilities:	
Loans and Bills Payable	—
Traffic and Car-Service Balances Payable	$6,830,263
Audited Accounts and Wages Payable	17,793,317
Miscellaneous Accounts Payable	1,045,850
Interest Matured Unpaid	2,582,546
Dividends Matured Unpaid	149,901
Unmatured Interest Accrued	5,376,605
Unmatured Rents Accrued	2,333,029
Other Current Liabilities	6,858,039
Total Current Liabilities	$42,969,550
Deferred Liabilities:	
Liability to Lessor Companies for Equipment	$5,209,272
Other Deferred Liabilities (Note C)	35,985,968
Total Deferred Liabilities	$41,195,240
Unadjusted Credits:	
Tax Liability*	$18,515,245
Premium on Funded Debt	87,868
Insurance and Casualty Reserves	5,904,806
Accrued Depreciation—Road	2,426,852
Accrued Depreciation—Equipment	192,905,132
Accrued Depreciation—Miscellaneous Physical Property	3,476,088
Other Unadjusted Credits (Note D)	75,706,536
Total Unadjusted Credits	$299,022,527
Corporate Surplus:	
Additions to Property through Income and Surplus	$7,918,893
Miscellaneous Fund Reserves	1,701,055
Profit and Loss—Balance	178,079,443
Total Corporate Surplus	187,699,391
Total	$1,844,101,952

* Greater detail in original balance sheet.

NOTE C.—Includes:

Amounts payable to New York State as the New York Central proportion of certain grade crossing eliminations	$27,892,017
Amounts due under railroad equipment lease agreements	$2,980,627

NOTE D.—Includes:

Depreciation accruals for equipment of lessor companies	50,604,607
Bills rendered and unpaid not credited to income but to be credited to Grand Central Terminal accounts upon collection	3,389,992
Accruals for injuries to persons and loss and damage—freight	7,577,913

equipment depreciation appear to be small for the railroads as a whole, as was suggested in the preceding chapter.[2] The figures in our illustrative balance sheet show:

Investment in Equipment	$392,017,055
Less Accrued Depreciation	192,905,132
Net Book Value	199,111,923
Per Cent of Depreciation to Cost	49.2

These figures may be compared with the combined road and equipment of all Class I roads in 1939, exclusive of minor amounts of improvements on leased railway property: *

(millions of dollars)

	Asset	*Accrued depreciation*	*Per cent*
Road	13,887	137	1.0
Equipment	5,476	2,662	48.6
General Expenditures	242		
Total	19,605		

* Source: I.C.C., *Statistics of Railways in the United States*, 1939, p. 111.

The total accrued depreciation of equipment for the New York Central is about average. In the above total of road and equipment, the road constitutes 71, the equipment 28 per cent. The similar percentages for the New York Central were 64 and 36. A railroad, like this one, leasing the property of other roads, gradually supplies all of the equipment as that of the lessors wears out and is retired. The result is that the proportion of equipment to owned road tends to run above average.[3]

The nonoperating investments in affiliated and other companies can be studied in detail, since a list of such investments is usually given elsewhere in the annual report. Sometimes they consist of securities of known companies, which issue statements of their own, as does the Reading Company, in which the New York Central has substantial stockholdings. Their analysis is ordinarily made in connection with the study of their earning power for the income statement.

Where securities of this sort are pledged for a specific debt, the balance sheet will show them as pledged. This would be the

[2] See above, page 282 and accompanying footnotes 7 and 8.

[3] In addition to the "Liability to Lessor Companies for Equipment" shown in the balance sheet, a footnote to the "Other Unadjusted Credits" indicates $50,604,608 for "Depreciation Accruals for Equipment of Lessor Companies."

case with securities pledged to secure collateral trust bonds. Like pledged equipment, they would not be available for the general unsecured creditors in the event of insolvency.

Working capital. The current assets and current liabilities will normally require no individual attention, and a detailed discussion of them may be omitted. The major values are in the fixed section of the balance sheet, and even a moderate working capital deficit is not looked upon with concern if earnings are satisfactory and the security market normal. When earnings are but little more than enough to cover fixed charges, a weak working capital position is likely to reflect potential insolvency. Loans and bills payable are frequently present in such cases, showing that temporary financial aid is being extended.

The severe effects of the depression beginning in 1930 may be appreciated from the fact that on July 31, 1932, railroad working capital showed a deficit for the first time in the reported history for the combined figures of Class I railways.[4] The course of this decline is shown in the following figures:

COMBINED WORKING CAPITAL OF ALL CLASS I RAILWAYS IN THE UNITED STATES
(Millions of Dollars)

As of Dec. 31	*Current Assets*	*Current Liabilities**	*Working Capital*
1929	$1,718	$1,201	$517
1930	1,511	1,162	349
1931	1,213	1,147	66
1932	1,063	1,131	*68d*
1933	1,035	1,261	*226d*

* Excluded tax liability.
d = Deficit.

Many receiverships were prevented by the Reconstruction Finance Corporation, which, owned and financed by the Federal Government, made loans to railroads in distress for interest, taxes, and refunding when acceptable security was available. The net amount owing at the end of 1933 was $337,000,000. (As of December 31, 1940, the RFC and the PWA, which extended loans for capital purposes, had made total loans of $987,579,305, of which $506,050,271 had been either repaid or sold to the pub-

[4] Working capital figures after 1939 are not comparable with those for earlier years because of the removal of "Funded Debt Matured Unpaid" and "Interest Matured Unpaid" after that year from the Current Liabilities to places under Long-Term Debt and Deferred Liabilities, respectively, except in cases where provision has been made for payment.

lic.) The Railroad Credit Corporation was organized by the railroads themselves to pool receipts from temporary freight rate increases authorized at the end of 1931 for the purpose of creating a special loan fund. When the increase ended in 1933 and the lending ceased, loans of this corporation had reached over $72,000,000.

The Seaboard Air Line Railway Company went into the hands of a receiver December 23, 1930. The receivership became inevitable as a result of the decline in earnings in spite of a sale of common stock underwritten on October 11, 1929, and executed in January of 1930, which resulted in the realization of over $20,000,000. In view of poor earnings, as shown by the low coverage of fixed charges stated in the table below, the financing was unusual. The additional funds explain the temporary reduction in the working capital deficit shown in the table below.

SEABOARD AIR LINE RAILWAY COMPANY

STATEMENT OF WORKING CAPITAL, INTEREST CHARGES, AND THE NUMBER OF TIMES FIXED CHARGES WERE EARNED
(Thousands of Dollars)

As of Dec. 31	*Current Assets*	*Current Liabilities*	*Working Capital*	*Fixed Charges*	*No. of Times Earned*
1927	14,401	14,428	*27 (d)*	11,290	1.11
1928	14,703	15,566	*863 (d)*	11,235	1.11
1929	12,919	18,985	*6,067 (d)*	11,126	1.09
1930	12,180	14,170	*1,990 (d)*	11,376	0.50

(*d*) Working capital deficit.

When earnings are declining or absent, it is likely that working capital will suffer. This condition is often checked by the neglect of maintenance or the reduction of dividends. The study of maintenance to determine its adequacy should be particularly close when general conditions appear unfavorable. A policy of inadequate maintenance is the simplest method of conserving cash reserves, and at the same time it reduces the apparent operating expenses.

During a period of high earnings, it may be found that working capital does not apparently increase proportionately. Unlike the industrial corporation, the railroad has no need for increasing investment in receivables or inventories. Expansion takes the form of increased road and equipment or the purchase of securities of affiliated roads or enterprises. Sometimes funded debt is retired, especially if it is in the form of small serial maturities of equipment obligations. Otherwise, dividends will benefit, for

large cash reserves are very unusual. Even investment in liquid securities to meet the proverbial rainy day has been rare—roads such as the Union Pacific being exceptional. When such marketable securities are held, they do not appear as current assets but under the heading "Other Investments."

The payment of dividends is closely watched for its effect on working capital. A strong temptation exists to continue dividends even when their disbursement is most unwise. On some occasions, it is true, the best procedure is to use past earnings to continue a well-considered dividend policy if working capital permits, for regularity of dividends is a factor that will strengthen the credit of a railroad. The fact that dividends are being paid is stressed by bond houses as evidence that interest charges will be met. In some jurisdictions, a dividend record is required in order that a bond may retain a "legal" status for fiduciaries and regulated financial institutions such as savings banks and life insurance companies.[5]

The necessity for an uninterrupted dividend record suggests that during years of good times it is desirable that working capital be increased with a view to continuing dividends during the periods of dullness which alternate with prosperous times. In fact, railroad earnings have fallen so greatly in recent years that the goal for many has become the conservation of working capital in order to maintain bare solvency in depression years.

Deferred assets. The deferred assets of a railroad consist of working funds, insurance funds, and other funds. The title "Deferred Assets" in the balance sheet of a railroad has a meaning different from that which it has when it is in statements of other kinds of business. It includes funds which are likely to be employed for meeting items of an expense nature. Thus, "working funds" consists of advances made to officers and employees, to be accounted for as expenditures are made. Sinking funds, however, are investments to meet funded debt and so appear in the investments section of the balance sheet.

Unadjusted debits. Unadjusted debits are miscellaneous items which cannot properly be included under the previous headings. They include prepaid expense items, discount on

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[5] Such legal requirements explain why the Baltimore & Ohio continued its dividends during a period when its earnings did not justify that course. This railroad fell short of earning the dividend of five per cent which it paid in 1917. It reduced the rate in 1918, but continued to pay dividends at the rate of four per cent per annum into the year 1919.

stocks and bonds issued, suspense items to be added later to some asset or expense, and contingent assets. A perusal of the items appearing in the general balance sheet at the beginning of this chapter shows some of these items. For the most part, they are very minor amounts.

When the company has securities of its own which have been issued but are now held in the treasury or are used as collateral for other issues, the item is in the nature of a memorandum and will not be added into the total assets. It will be offset by similar memorandum items on the liability side. The New York Central shows no such items in our illustrative balance sheet but does report them in a supporting detailed schedule of funded debt. They may represent either repurchased obligations or issues available under the terms of an open-end mortgage. They can be useful for the market value at which they might be sold or because they can be pledged to secure a collateral note or bond issue.

Deferred liabilities. The deferred liabilities in the case of railroads are ordinarily of very minor importance, consisting of unusual liabilities of somewhat indefinite maturity. When funds are held by the company's treasurer in the administration of employees' pension, savings, relief, or other association funds, or when certain percentages due contractors are retained to be paid on the completion of contracts, the liability is shown under this caption. In the illustrative balance sheet, the "Other Deferred Liabilities," as stated in a footnote, consists chiefly of "Amounts payable to New York State" as the New York Central's share of certain grade crossing eliminations.

Unadjusted credits. The unadjusted credits, on the liability side of the balance sheet, are a miscellaneous group of items. Most of the items under this heading correspond to the reserve accounts appearing in an industrial balance sheet. Tax liability is a current liability and since January 1, 1941 has been moved up under that heading. The insurance and casualty reserves are the liabilities accumulated to take care of probable losses. Operating reserves are set up to care for the losses which result from personal injuries, loss and damage, and other claims, and for similar purposes. These last-named reserves equalize the burden on the operating expenses, which might otherwise be extremely variable.

Accrued depreciation is the equivalent of the term "reserve for depreciation," and is usually the largest of the items under this

general heading. Its analysis as a valuation reserve has been discussed in connection with the asset "road and equipment."

Sometimes a company borrows securities from a subsidiary or lessor company in order to pledge the same for its own bond issues. In such cases, they show here as a contingent liability offset by the contingent asset listed under "Unadjusted Debits."

Grants in aid of construction. This account following the capital stock represents donated surplus of the paid-in variety which has arisen from the acquisition of lands or other grants from states, municipalities, or other governmental units and appears under the heading of "Road and Equipment." However, contributions by governmental agencies for facilities used jointly with others, as for the elimination of grade crossings, are not taken into the accounts. Only that portion of such projects' costs as is borne by the railroad is included in the balance sheet.

Reorganization adjustments of capital. It is expected that in the numerous railroad reorganizations taking place under the Bankruptcy Act (Section 77) the new securities issued will be substantially less in amount than those formerly outstanding. The net excess of the asset accounts over the new liabilities including the face amount of stock issued is to be set up on the liability side as Reorganization Adjustment of Capital. With the approval of the Commission, extraordinary losses, such as the write-down of assets, may be charged against this account.

Capital security issues. The chief items on the liability side are, first, the funded debt, consisting of equipment obligations, mortgage bonds, collateral trust bonds, debenture bonds and any other negotiable instruments of debt maturing more than two years from the date of issue; and, second, capital stock and corporate surplus. The first represents the bondholders' and the second the stockholders' equity or interest in the assets.

It might appear that an important omission was being made in thus leaving out the nonnegotiable debt to affiliated companies as a part of the long-term debt in the capital structure. However, this debt is not of the same pressing nature as a debt to outsiders. Very often the reporting company owns virtually the whole stock equity so that the complete elimination of this particular obligation would have little more significance than the elimination of intercompany items which is common practice in the consolidated balance sheet of a holding company report.

The proportions of funded debt and capital stock are frequently referred to as a measure of the conservatism of the capi-

tal structure; but with the passage of years, surplus has been an increasingly important source of funds, and should be included. The following figures show both the conventional bond and stock proportions for the years 1930 and 1939, and the more significant proportions of bonds and net worth for the same years:

CAPITAL STRUCTURE PROPORTIONS OF ALL CLASS I RAILROADS IN THE UNITED STATES: 1930 AND 1939

	Amounts (Millions of Dollars)		*Bonds and Stocks*		*Bonds and Net Worth*	
	1930	*1939*	*1930*	*1939*	*1930*	*1939*
Bonds	$10,795	$10,353	56.6%	55.8%	45.4%	49.0%
Stocks	8,267	8,197	43.4	44.2	54.6	51.0
Surplus	4,730	2,564				
Totals	$23,792	$21,114	100.0%	100.0%	100.0%	100.0%

Although capital structure proportions are of doubtful significance, the primary consideration always being supporting earning power, they will, nevertheless, frequently show the expected correlation with financial strength. The capital structure proportions of some of the leading railroads immediately prior to their receivership are shown below. It is to be noted that some roads, like the Wabash, may show a satisfactory capital structure but fail when the all-important earning power becomes inadequate.

(Millions of Dollars)

	Seaboard Air Line— 1929		*St. Louis San Francisco— 1931*		*Wabash— 1930*	
Bonds	$190.1	73%	$293.8	70%	$141.8	44%
Stocks	60.9	27	114.7	30	138.5	56
Surplus	9.4		9.9		44.3	
	$260.4	100%	$418.4	100%	$324.6	100%

A railroad with a funded debt in excess of 60 per cent of the total capitalization or 50 per cent of the combined bonds and net worth is likely to be in a weak position.[6]

But some companies have fixed charges in the form of rentals; and, unlike the interest on funded debt, these charges show no corresponding burden in the capital structure figures. If the

[6] Massachusetts law does not permit savings banks to purchase the bonds of railroads outside New England when such bonds exceed, or are authorized to exceed, three times the capital stock. The material given here indicates why the rule has slight protective merit.

securities supported by the rental charge were combined with the companies' own securities in the balance sheet, in the manner in which the operations of the leased road are combined with those of the owned road in the income statement, no problem would exist. The customary solution is to capitalize the rentals at an arbitrary rate of interest, generally 5 per cent, and show the resulting amount along with the funded debt in stating the debt burden in the capital structure whenever leases are at all significant, as they are for the New York Central. Applying this method to that company, the rents for leased roads amounting to $21,724,402 in 1940 were equal to 5 per cent on a capital sum of $434,488, 040. The effect of including this amount in the capital structure is shown in the following figures:

NEW YORK CENTRAL RAILROAD COMPANY

CAPITAL STRUCTURE PROPORTIONS
December 31, 1940

	Amounts (Millions of Dollars)	*Bonds and Net Worth*	*Rentals, Bonds, and Net Worth*
Capitalized Rentals—5%	$434		24%
Bonds	649	46%	35
Stock	562	54	41
Surplus	188		
Totals	$1,833	100%	100%

This solution of the rental problem is inappropriate for the New York Central to the extent that these rental charges are paid back to it in the form of dividends and interest on securities of the leased roads which it owns. The actual debt burden is with respect to rents and interest paid to others. The company's 1940 annual report states that income from securities included $4,331,859 from securities that were guaranteed by lease or contract. Of a similar character was $1,443,272 received from investments in joint facilities used by the company.[7]

Capitalization and mileage. The New York Central balance sheet shows that investors have placed capital at the disposal of the company which has been used to acquire operating properties and securities. Yet railroad securities are often discussed as though solely related to miles of road owned. At the date of the illustrative statement, the New York Central owned but 3,653.88 miles of road, making the capital stock per mile $153,900 and

[7] This difficulty of eliminating intra-system transactions is another illustration, in addition to those presented, of the desirability of consolidated statements.

the funded debt $177,546, a total of $331,446 per mile. Any comparison on this basis is misleading, since it overlooks the fact that any amount of this capitalization may be the result of investment in securities rather than in railroad property.

The improvements which many of the larger railroads make on leased properties must also be considered. These improvements amounted to over $148,000,000 for the New York Central. The net capitalization for the railroad properties alone may be calculated by deducting the investments in other companies, improvements on leased railway property, and any treasury securities from the gross capitalization.

A METHOD OF NET CAPITALIZATION

NEW YORK CENTRAL RAILROAD COMPANY
As of December 31, 1940

Gross Capitalization:		
Capital Stock	$562,332,642	
Funded Debt	648,732,200	$1,211,064,842
Outside Investments:		
Investments in Affiliated Companies	$418,376,311	
Other Investments	40,003,796	
Miscellaneous Physical Property	51,011,180	
Total	$509,391,287	
Sinking Funds	109,190	
Deposits in Lieu of Mortgaged Property Sold	60,754	
Improvements on Leased Railway Property	148,562,398	
Total Deductions		658,123,629
Net Capitalization		$ 552,941,213

The net capitalization per mile of road on the basis shown above amounts to $151,330, as compared with a gross capitalization per mile of $331,000. In the case of such roads as the New York Central and the Pennsylvania, the *owned* lines, which give rise to this capitalization, consist mostly of valuable terminals and main line of two and even four tracks. For the 3,654 miles of road owned by the New York Central in 1940, there was a total of 9,943 miles of owned track.

In view of present-day complications of railroad finance, this measure of capitalization is of doubtful value. Originally, it served as a rough measure to indicate whether a road was heavily —and so perhaps excessively—capitalized. Today, excessive capitalization may be as dependent upon the character of security holdings as upon that of road and equipment investment. The contribution of surplus in supplying funds for the purpose of acquiring both transportation and other assets is ignored by this

ratio of securities outstanding to miles of road. The simplest and most direct check upon whether or not the investment is large "per mile of road" is to divide the asset "road and equipment" by the number of miles of road owned, which would show a figure of $340,000 for the New York Central.

Investment and earnings. In order to bring the balance sheet into relation with the income statement, three measures may be used to advantage: (1) the return upon total investment, as measured by bonds and net worth; (2) the return upon transportation property; and (3) the return upon nonoperating assets. The total return to investors, both bond and stock holders, consists of the amounts paid upon the funded debt plus the net corporate income for the stockholders. The first measure of total return is illustrated by the following figures for the New York Central:

	(*Millions of Dollars*)			
	1929	1932	1938	1940
Total Bonds and Net Worth	$1,431	$1,417	$1,379	$1,399
Earnings for Interest and Dividends	104	14	7	38
Return on Total Capital Structure	7.3%	1.0%	0.5%	2.7%

The comparison of the operating and nonoperating asset investments with their respective contributions to earning power are shown below:

	(*Millions of Dollars*)	
	1929	1940
Road and Equipment	$1,074	$1,144
Improvements on Leased Railway Properties	140	148
Total	$1,214	$1,292
Less Accrued Depreciation	141	199
Net Book Value	$1,073	$1,093
Net Working Capital	2	38
Book Investment in Operating Property	$1,075	$1,131
Net Railway Operating Income Less Rent for Leased Roads	76	22
Return on Operating Property	7.0%	1.9%
Investments in Affiliated Companies	$ 343	$ 418
Other Investments	49	40
Total	$ 392	$ 458
Dividends and Income from Funded and Unfunded Securities and Accounts	24	11
Return on Nonoperating Assets	6.1%	2.4%

In arriving at the total operating assets, not only road and equipment are included, but also improvements on leased rail-

road and the working capital.[8] The allowances for depreciation are subtracted. At first glance, the related income would appear to be the net railway operating income, but that figure represents income derived from leased as well as owned railroad, and so the rent for leased road is deducted. As a result, the balance obtained as a return for the owned road includes the profit or loss from the leasing operations. The presence of the fixed rental deduction makes the net figure more variable than it would be if the whole property were directly owned. This factor explains the large variation in return from 7.0 to 1.9 per cent. Deficits were shown in years like 1932 and 1938.

The return from the nonoperating assets in the form of interest and dividends is apparently much more stable, declining only from 6.1 to 2.4 per cent. A part of this stability is the result of holdings of intra-system guaranteed securities, already discussed, and a part the result of dividends being more stable ordinarily than the income which supports them.

These results are open to the criticism that they ignore a number of minor items under both the income and the deductions of the nonoperating section of the Income account. Ordinarily, the miscellaneous physical property would be included in the nonoperating asset total. Any other items should presumably also be allocated to either operating or nonoperating assets and income; but aside from certain ambiguities which make such work difficult, the resulting refinement is likely to make no appreciable increase in accuracy for ordinary analytical purposes.

Principle of fair return on investment. The Transportation Act of 1920 marked a distinctly new era in railroad regulation for this country. The provision perhaps of most interest to investors was that the Interstate Commerce Commission should so regulate rates that the railroads, taken as a group in a given section of the country, would be able to earn a "fair return" upon the amount actually invested in operating properties.

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[8] *I.C.C. Reports,* Vol. 58, p. 229: "The needs for working capital, and materials and supplies on hand, have been considered and allowance therefor has been made." See also Whitten, R. H., and Wilcox, D. F., *Valuation of Public Service Corporations* (New York: Banks Law Publishing Co., 2nd ed., 1928), Chap. XXX.

The term "property investment" is commonly used to mean the sum of the two accounts "Investment in Road and Equipment" and "Improvements of Leased Railway Property," and, less frequently, to include "Materials and Supplies." An allowance for depreciation and the inclusion of either working capital or materials and supplies seem essential in arriving at the "property investment as shown by the books."

This provision represented a logical outcome of the principle stated by Commissioner Daniels in the so-called "Five Per Cent Case" of 1914. At that time he said: "A living wage is as necessary for a railroad as for an individual. A carrier without sufficient return to cover costs and obtain, in addition, a margin of profit large enough to attract new capital for extensions and improvements cannot permanently render service commensurate with the need of the public."

Section 15a of the Transportation Act was amended by the Emergency Act passed June 16, 1933, which did away with the provision that rates should be fixed so that carriers might earn a fair return upon the fair value of their transportation property and with the recapture clause. Paragraph two provided:

> In the exercise of its power to prescribe just and reasonable rates the Commission shall give due consideration, among other factors, to the effect of rates on the movement of traffic; to the need, in the public interest, of adequate and efficient railway transportation service at the lowest cost consistent with the furnishing of such service; and to the need of revenues sufficient to enable the carriers, under honest, economical, and efficient management, to provide such service.

The vagueness of this section gives it the ring of a political speech rather than of an administrative working rule. When, and if, railroad earning power returns to a more normal state, the Commission will be obliged to meet the concrete problem of regulating rates and earnings; and in the absence of more specific principles, the Act of 1920 is likely to be influential. Furthermore, if earnings become substantial and the stronger roads earn a high return on investment under a system of rates that represents a fair average level for a given territory, agitation for the re-enactment of something equivalent to the discarded recapture provision would seem likely. For this reason, the relation of the older law to railroad statement interpretation is of interest.

"Fair return" not investors' return. The 1920 Act has been misinterpreted in several ways, and it has even been condemned as "unduly limiting profits" and "confiscatory," whereas, if actually carried out, it would make railroad profits greater than at any time in recent years.[9] The Act provided that rates should be so regulated as to permit the railroads as a whole to earn a fair

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[9] A rough index of railway earnings is found in the per cent earned upon aggregate property investment, including improvements on leased railway property, cash, materials, and supplies. The highest return in recent years was 5.90 per cent in 1916. The lowest return for a long period was reported in the years

return upon the fair value of the property engaged in rendering transportation service. A fair return was specified as 5½ per cent, with a possible addition of not more than one-half of one per cent at the discretion of the Commission. In May, 1922, a decision was handed down that the fair return should be 5.75 per cent. Had such a per cent been achieved, some roads would have been able to pay very high dividend rates in relation to par value —considerably more than the specified return. The reasons for this difference between the rate of "fair return" allowed on the investment and the dividend rate may be outlined as follows:

1. The figure for actual investment of the railroads as determined by the Commission is likely to differ from the value of the property as it appears on the railroads' books.
2. But even should capitalization and book investment agree, the issuance of bonds at a fixed rate of interest above (or below) the rate of return allowed by the Act would result in the return to the stockholders being below (or above) the rate allowed. Approximately nine-tenths of railroad funded debt bears a coupon rate of 5 per cent or less, and the average rate is about 4½ per cent. Since bonds are customarily sold by the railroad for less than par, the cost of borrowed capital would tend to be slightly above coupon rates.
3. Moreover, dividends are declared as a per cent of par; but many companies have considerable surplus, so that a given return on the total stockholders' investment would produce a higher rate in relation to par. Return is based upon the assets, not the nominal capitalization.
4. Capital may be invested in properties which are not devoted to railroad operations. The rate of return in this case may be any per cent.
5. The *individual road* may receive either more or less than the stated fair return, since rates are fixed with a view to their effect on railroads *as a group* in a given section of the country. Consequently, when the roads earn the "fair return," it follows that those roads which are more advantageously located and more efficiently managed are bound to earn a rate higher than the stated return.

1918, 1919, and 1920, with returns of 3.51, 2.46, and 0.08 per cent, respectively. The highest return after World War I, of 4.99 per cent, was earned in 1926. From 1929 at 4.84 per cent, this figure declined to a low of 1.24 per cent in 1932, and stood at 2.61 in 1940.

The five foregoing points are considered in more detail as follows:

1. Railroad valuation and capitalization. The determination of the value of the property of any given railroad is a matter which is left to the Commission to determine "from time to time and as often as may be necessary." It is understood that valuations begun by the Commission under a preceding act (1913) were to be used to establish an initial basis of value.

Additions to, and deductions from, the railroad properties are constantly taking place, and it appeared likely that once an initial basis of value was agreed upon between a given railroad and the Commission as a starting point, the accounting record of the railroad would thereafter be used to determine any later valuation. However, the railroads contended that consideration should be given to reproduction value, which was presumably higher at the time. This contention was upheld in the Supreme Court of the United States in the St. Louis & O'Fallon Railway case. However, the decision was vague as to what weight should be given that factor.[10]

The valuation work was sufficiently complete for the Commission to make use of it in the rate decision of July 29, 1920.[11] The valuation used was $18,900,000,000 as of December 31, 1919, instead of the book cost of road and equipment amounting to $20,040,572,611. This valuation, while less than book cost, was considerably in excess of the outstanding capitalization at that date, which amounted to only $16,550,310,683.

2. Effect of bonds on stock earnings. Many railroads will find that the rate of return allowed is higher than that paid on much of their outstanding capitalization. The principle is that the issuance of bonds raises or lowers the rate earned upon stock, depending upon whether the rate paid on the bonds is below or above the rate earned on the total capitalization. Moreover, the difference between the rate earned on the stock and that on total capitalization increases as the proportion of bonds to stocks increases.

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[10] The majority merely held that consideration should be given to reproduction cost, but that "the weight to be accorded thereto is not a matter before us." An able statement of the economic and administrative arguments for the more determinate basis employed by the Commission was presented in the dissenting minority opinion by Justice Brandeis. For a brief review of this case, see *Moody's Manual of Investments—Railroads* (1932), p. a66.

[11] *I.C.C. Reports*, Vol. 58 (July 29, 1920), pp. 220 *et seq.*

3. Effect of surplus. It would seem hardly necessary to note that return on the investment of the stockholder should not be confused with the nominal rate on par, but the error is common.

4. Investments in outside property. Every large railroad system is concerned with its investments in other properties as well as with those in its own transportation property. These outside investments may be in nonrailroad property, such as the real estate investments of the New York Central in the vicinity of its New York City terminal, or the coal properties owned by the Lackawanna—in which case the earnings are not subject to the regulations of the Act. As in the past, so in the future, these nontransportation properties may be a major influence in the prosperity of some companies.

Should the outside investments be in securities of another railroad, each company would receive separate treatment in the application of the Act, the railroad owning the securities being regarded like any other investor. Such securities, being purchased in the open market and at varying prices, might show almost any conceivable rate of return.

5. Weak and strong railroads. The Act does not attempt to regulate rates for the individual road, in contrast with most utility regulation, in order to attain the desired end. It recognizes that rates for railroads in substantial competition must be practically uniform. The Act states that "the Commission shall . . . establish . . . rates so that carriers *as a whole* (or as a whole in each of such rate groups or territories as the Commission may from time to time designate) will . . . earn . . . a fair return upon the aggregate value of the property of such carriers held for and used in the service of transportation." Under such an adjustment of rates by territorial sections, railroads will tend to be relatively strong or relatively weak as they are strong or weak now. Rate increases which help the weak railroad will strengthen the strong railroad at the same time.

Partly to prevent the stronger roads from earning an "unreasonable" return, and partly to aid the weak roads (which may be essential to our commerce), the original Act contained a "recapture clause," repealed in 1933 both for the future and retroactively, wherein it was provided that one-half of any net operating income in excess of six per cent of the *value of railway property* must be turned over to the Government. All such sums were to be used as a fund to be loaned to railroads, presumably to those in greatest need. This clause resulted in considerable

attention to the Commission's valuations, which were to have been important in arriving at the value of the property of the individual roads. Had the clause become effective, two results would have been likely: (1) strong roads would have found it to their advantage to absorb weak roads in order to lower the rate earned on total property and so reduce their loss through recapture, and (2) an accumulation would have been available which would have made the railroads largely independent of the Government aid that they were obliged to seek in the depression following 1929.[12]

The purpose of the Transportation Act, then, was to lay down a general principle of rate regulation which would be fair to the railroads as a whole, rather than to limit their earning power unduly.

In summarizing, it may be stated that the Act prescribed rate regulation which would, if carried out, have given the railroads a higher return than they actually have earned for some time in the past, and which would have permitted the stronger roads to earn very substantial dividends. The reasons are threefold. In the first place, even if a road had earned more than the "fair return" on its operating properties, only one-half of the excess was to have been taken by the Government; in the second place, low interest rates on outstanding bonds permitted a surplus for dividends in excess of the prescribed return; and, in the third place, an unlimited return on properties not used for railroad operation was permitted.

Analysis for investment purposes. An investor is interested not so much in the general facts about the railroad's financial condition as in the relative safety of a particular bond or stock. If he is analyzing the position of a certain bond which is secured by a first lien on a piece of property indispensable to the operation of an important railroad, he is interested in the character of the lien rather than in the general earning power of the road. Such a bond is hardly likely to suffer in a reorganization and commands a better price than a second lien on a greater amount

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[12] The recapture clause would have operated in the 1920's at a time when even weak roads were able to finance. The Interstate Commerce Commission estimates that the fund, if operative, would have amounted to considerably over $300,000,000 for the period 1920–1931 (*I.C.C. Annual Report,* 1932, p. 93). The Reconstruction Finance Corporation had loans outstanding to railroads of $280,000,000 at the end of 1932, and of $337,000,000 at the end of 1933. For a concise statement of the difficulties of applying the recapture principle, see *I.C.C. Annual Report.* 1932, pp. 16–18.

of property. On the other hand, a general lien, though secondary, often ranks higher than a first lien on some unimportant, and perhaps unprofitable, property. In a reorganization, the bondholders with a lien on the latter type of property might be told to take the property mortgaged if they were not satisfied with the amounts they received under the reorganization plan.

As the strength of the investment position of a security diminishes, general earning power becomes more and more important. Stocks stand in the last position as regards security, and are valued in proportion to the sufficiency and stability of earnings. The higher return which investors in stock secure by taking the greater risk is often offset by the consequent losses. Where a higher return over a period of years is actually realized, it may be said to be the reward for ability to evaluate securities. The investor who hopes to make a large return by taking less secure investments must pay the price in the way of time and study to obtain that return.

External factors affecting the future. In addition to ability to analyze the past performances of a railroad through its statements, there should be an intelligent knowledge of those general external factors likely to change present conditions. The chief of these are:

1. *Political elements, both legislative and regulatory.* Legislation showed a favoring attitude in the Transportation Act of 1920. Again, during the depression after 1929, much was done to prevent the collapse of railroad credit. In absolute amounts the loans of the Reconstruction Finance Corporation were large, but relative to the properties protected they were not excessive. Furthermore, such aid indicated an appreciation of the social importance of preserving a situation the destruction of which might have impaired the solvency of important financial institutions. Legislation can, however, be harmful in imposing burdens designed to benefit special groups or interests.

Regulation similarly can be helpful or otherwise. In this respect, the rate-making power is of paramount importance, although the limitations of any commission to set rates which will be suitably profitable must be recognized. During a depression, rate adjustments are an inadequate substitute for lost traffic volume. In ordinary times, attempts to raise rates may be restrained by the presence of competitive transportation agencies. Probably a portion of the slow but steady decline in the

average per-ton-mile rate between 1922 and 1932 from 1.177 cents to 1.046 cents was due to rate-paring here and there undertaken on the initiative of railroad management either to gain or to hold traffic subject to competition.

2. *Consolidations.* The Transportation Act of 1920 encouraged consolidations subject to the approval of the Interstate Commerce Commission with the idea of effecting economies by the welding of the railroads into strong regional systems. The intention was, however, to preserve competition in each section of the country.[13] The possible advantages or disadvantages of mergers with other stronger or weaker roads affect the future possibilities and values of a railroad's securities.[14] Other ambitious proposals have been put forward which, going beyond what is permitted by the law, propose to weld all the railroads in a given territory, and so, it is hoped, achieve the maximum economies of a monopolized public service.[15]

3. *Growth of population and wealth.* The growth of population by increasing traffic volume has been an important reason for the development of efficient mass transportation on a large scale. Growth from this factor has also offset the loss of traffic to other transportation agencies which have grown so rapidly in the recent past, and so has prevented what would otherwise have been a net decline. Future growth seems likely to be slower. Decrease is possible in some territories. Should per capita wealth continue to increase, the demand for transportation service could continue to grow, however, in spite of a relatively stationary population. The influence of population and wealth changes will be traced in the gross revenues and the character of the traffic, as will the next factor.

4. *Competition of other forms of transportation.* The competition of water transport, pipe-lines, and, especially, the motor truck for freight traffic, and the bus, the airplane, and the private automobile for passenger traffic has become important. The

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[13] Somewhat unwillingly, the Interstate Commerce Commission published a *Proposed Railroad Consolidation Plan* on December 9, 1929: *I.C.C. Reports,* Vol. 159, p. 522 *et seq.* A modification was published July 13, 1932: *I.C.C. Reports,* Vol. 185, p. 403 *et seq.*

[14] For the considerations governing the strategy of consolidation, and so its significance in analysis, see Ripley, W. Z., *Main Street and Wall Street* (New York: Little, Brown and Co., 1927), Chap. IX, "Planning Ahead."

[15] Probably the best known of these has been the Prince plan, which proposed a seven-system regional grouping and claimed potential economies on a staggering scale. A popular description is given by Dudley Hovey in "Checking Up the Prince Plan," *Barron's,* December 18, 1933.

shrinkage in the carriage of passengers since 1920 would have been alarming had that branch of the business contributed more heavily to profits. The rapid growth of truck transport has been largely confined to short-haul movements, and up to 1929 appears to have absorbed a portion of what would have been normal growth of railroad freight traffic. In 1929, ton-miles of revenue freight were about the same as in 1926, the previous high year (actually, one-half of one per cent higher). The decline in the years immediately following was largely the product of depression rather than competition, although the ability of truck operators to cut wage costs and to adjust their rates at will undoubtedly gave them an unusual advantage in seizing business during such a period. Another consideration to be kept in mind is that the decade of the 1920's was the period of the introduction of the truck, and with the passing of this initial stage of rapid development, its place in the transportation field should become more fixed and its inroads into railroad traffic less important.

In giving attention to the more obvious effect of the motor truck, the less obvious loss of previous growth in coal tonnage during this period is often overlooked. Coal traffic accounts for about one-half the total rail tonnage and about one-third of the gross freight revenues. The tonnage of coal and coke moved was five per cent lower in 1929 than in 1926.

The Motor Carrier Act of 1935 was passed to bring these carriers under the Interstate Commerce Commission and equalize their treatment with that of the railroads. The extent to which trucking is intra-state suggests difficulties in the way of Federal regulation, and the relatively small investment required to enter the business suggests that any type of regulation is likely to be extremely difficult to enforce. The success of the railroads in holding their position must depend upon greater efficiency in carrying mass shipments for the longer hauls.[16]

In this respect, developments in the art of railroading are of the greatest importance. The introduction of lightweight, streamlined equipment powered with the economical Diesel engine may mark a turning point in the handling of passenger traffic. Such locomotives may also prove to have marked ad-

[16] For an analysis of the problem from the railroad point of view, see *An Economic Survey of Motor Vehicle Transportation in the United States* (Bureau of Railway Economics, Special Series No. 60, 1933); also, Co-ordinator Eastman's report on the regulation of transportation agencies other than railroads, *Senate Document 152*, 73rd Congress, 2nd Session (1934).

vantages in the speeding up of freight traffic, although thus far their use has been limited for the most part to passenger and freight switching operations. Transportation costs in the form of wages might be lowered per unit of service if a given crew could move a train a much greater distance in a given space of time. In effect, the Diesel-powered locomotive burning a cheap grade of fuel oil in an internal combustion engine which, in turn, drives an electric motor gives most of the operating advantages which electrification has offered—namely, speed, economy, and ability to operate for long hours with no servicing.[17] The spur of competition has resulted in speedier freight movements with steam locomotives over the past two decades. Much of this increased efficiency has been absorbed by higher wage rates and the hampering working rules enforced by strong labor unions.

Conclusion. From the foregoing chapter, it is apparent that the balance sheet is chiefly of interest for a statement of the capital structure proportions and working capital position. The assets are chiefly of interest in terms of their earning power. Consequently, the income statement receives the bulk of attention in railroad analysis. The constant problem is to interpret this record of past performance in the light of external conditions which may develop new trends in the future. In judging the long-term situation, allowance should be made for the presumably temporary gains in traffic which result from World War II.

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[17] Where an electric or Diesel-powered locomotive can spend upwards of 90 per cent of 24 hours per day in service, steam locomotives spend only 30 to 40 per cent of the total possible locomotive-hours on the road.

The advantages of railroad electrification are stated by Arthur J. Manson in *Railroad Electrification and the Electric Locomotive* (New York: second ed., Simmons-Boardman Publishing Co., 1925). The introduction of the Diesel engine is likely to reduce interest in electrification.

CHAPTER XIII

Public Utilities

Like the railroads, the "public utilities" are regulated enterprises with monopoly characteristics. The term has come to exclude the railroads and to include the electric light and power, street railway, telephone, gas, and water businesses. The utilities differ from the railroads generally in their greater interest in domestic consumption (*i.e.*, in the home), which is more stable in depression, and the more local character of their operations and regulation. The development of long-distance telephone operations and long-distance transmission of electric power and natural gas has been modifying this localization in recent years. While the public importance of the services or goods sold has often been used to explain the need for governmental regulation of railroads and utilities, the more fundamental factors are probably the low capital turnover and the large duplication of capital equipment required to establish competing units. These two factors, when taken in conjunction, make monopoly natural, because it makes a large reduction in total costs possible. Under monopoly, which means the restraining influences of competition are absent, regulation becomes essential.

The amount invested is usually high in relation to the annual volume of sales, with the result that a relatively high fraction of the consumer's dollar must be left available for a return upon capital if a normal rate is to be realized. Furthermore, if competing units are introduced, considerable overlapping investment is necessary. Parallel trackage for steam railroads or street railways, two sets of transmission lines down every street for each of two electric or telephone companies, or duplicate systems of mains for gas or water represent a serious increase in costs where the interest upon capital constitutes as much as a third of the total cost of service. In no other important field save real estate does the return on capital bulk so large in final costs,

and in that field competition does not necessarily involve the creation of "overlapping investment." Were capital costs less significant, some waste from duplication might be more than offset by cost reduction in other directions resulting from competitive pressure and the spur of the more rapid introduction of improvements in equipment and methods of operation.

The rapid growth of the utilities has resulted in their passing the railroads in financial importance.[1] The relative investment importance of the various classes of utility securities is indicated in the following table, in which bonds are stated at par and stocks at their average market value.[2] Subsequent figures of the same character are lacking for recent years but other available material indicates that the general proportions and size of the picture have not altered greatly save in the case of the street railways, which have suffered a marked shrinkage because of reorganization and loss of earning power. Gas company stocks have also suffered somewhat because of reduced earning power. Because water works are so generally owned and operated by municipal authorities, particularly in the larger communities, they are not included here.

UTILITY SECURITIES OUTSTANDING—1928
(Millions of Dollars)

	Total	*Bonds (Par Value)*		*Stocks (Market Value)*	
Electric Light & Power	$15,481	$ 7,390	48%	$ 8,091	52%
Telephone	4,959	1,666	34	3,293	66
Street Railway	4,501	3,112	69	1,389	31
Gas	2,790	1,189	43	1,601	57
Totals	$27,731	$13,357	48%	$14,374	52%

Capital structure proportions. An idea of the current importance of the private electric industry and the general character of its balance sheet can be had from the Composite Balance Sheet of Class A and B companies tabulated by the Federal Power Commission for December 31, 1939.[3]

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[1] For significant current material, both financial and statistical, see *Moody's Manual of Investments*, "Public Utilities" volume.

[2] *Moody's Manual of Investments*, "Public Utilities," 1929, p. xviii.

[3] Federal Power Commission, *Statistics of Electric Utilities in the United States, 1939*, p. x.

COMPOSITE BALANCE SHEET
CLASS A AND B PRIVATE ELECTRIC UTILITIES
(All Departments)
December 31, 1939
(Thousands of Dollars)

Assets	*Amount*	*Per Cent*
Electric Plant and Adjustments	$10,147	59.1
Gas Plant and Adjustments	1,195	7.0
Other Utility Plant and Adjustment	423	2.5
Unclassified and Undistributed	2,350	13.7
Total Utility Plant	$14,115	82.2
Investment and Fund Accounts	1,421	8.3
Current and Accrued Assets	1,042	6.1
Deferred Debits	503	2.9
Capital Stock Discount and Expense	47	.3
Reacquired Securities	52	.3
Total Assets	$17,180	100.0
Liabilities		
Capital Stock	$6,483	37.7
Long-Term Debt	6,972	40.6
Current and Accrued Liabilities	655	3.8
Reserve for Depr. and Amor. of Utility Plant	1,762	10.3
Other Reserves	195	1.1
Deferred Credits	42	.2
Contributions in Aid of Construction	40	.2
Surplus	1	6.0
Total Liabilities	$17,180	100.0

From this balance sheet the capital structure proportions can be seen as follows:

ELECTRIC UTILITY CAPITAL STRUCTURE PROPORTIONS
1939
(Thousands of Dollars)

Long-Term Debt	$6,972	48.1%
Capital Stock	6,483	44.7
Surplus	1,031	7.1
	$14,486	100.0%

The debt exceeded the capital stock by a small margin but the total stockholders' investment slightly exceeded the debt. Combined capital structures for twelve large companies, serving metropolitan areas for the most part, show a slightly more conservative proportion of debt. These figures are also useful in showing something of the relative importance of preferred stock. The importance of the companies selected may be judged from

the totals of their capital structures in 1940, when they totaled four and a half billion dollars.

COMBINED CAPITAL STRUCTURE PROPORTIONS OF LEADING ELECTRIC UTILITIES

	1930	1935	1940
Bonds	40	44	44
Preferred Stock	13	14	13
Common Stock	36	33	35
Surplus	11	9	8
Totals	100	100	100

Gas companies would be expected to show capital structure characteristics similar to electric companies. Because of the extreme depression of the street railway utilities combined data lack both significance and interest. Because of its contrasting capital structure, the figures of the American Telephone and Telegraph Company are reproduced below.

The telephone industry consists chiefly of the operations of the American Telephone & Telegraph Company and its subsidiaries. It is estimated that over four-fifths of the telephones in the United States are owned by this (the Bell) system. The low proportion of funded debt of this organization may be seen from the following figures, which also indicate its huge size. It is the largest non-financial corporation in the country.

AMERICAN TELEPHONE & TELEGRAPH COMPANY
CAPITAL STRUCTURE (COMBINED SYSTEM)
(Millions of Dollars)

	1940		1926	
	$	%	$	%
Funded Debt:				
American Tel. & Tel.	570	15	385	16
Subsidiaries	561	14	537	22
Notes Sold to Pension Fund	104	3	....	
Preferred Stock of Subsidiaries	38	1	110	5
Common Stock:				
American Tel. & Tel.	1,869	48	1,064	45
Subsidiaries	90	2	90	4
Surplus:				
Premiums	270	7		
Reserves	63	2	196	8
Unappropriated	297	8		
	3,862	100	2,382	100

Working capital. The current assets and current liabilities occupy a secondary place in the utility balance sheet. In the

combined balance sheet of electric companies shown above, current assets were only 6 per cent of total assets. The presence of notes payable is usually regarded as a sign of imminent financing, although a lack of working capital may be due to either operating losses or construction to be financed upon completion. In either case, the ability of the company to sell securities should be considered. In general, the current ratio is likely to be much lower than in the industrial field. In ordinary years it will be between one and two. For the combined electric companies it was 1.6 in 1939.

Fixed assets. The fixed assets devoted to operations make up the bulk of their side of the balance sheet. Some companies, particularly the large metropolitan units, show other fixed non-operating investments; but these will generally be found to be closely related to operations. Most frequently, these investments are in companies which (*a*) act as a source of joint supply, such as a natural gas property or a large, low-cost generating company; (*b*) are an important source of business, such as the local traction company, in the case of a power company; or (*c*) are related properties that are in the course of being acquired as subsidiaries. Such holdings require separate analysis.

In the combined balance sheet it will be noted that the several property accounts read "and Adjustments." Under the uniform system of accounting for electric and gas utilities first prescribed by the Federal Power Commission to take effect January 1, 1937, the plant accounts are to show original cost, estimated if not known. Differences, such as might arise from write-ups must be segregated in adjustment accounts with the idea of their ultimate amortization.[4] The "Unclassified and Undistributed" accounts represent property accounts for which no such segregation had been made as of the date of the report. "Intangible plant" would include such items as organization expense, and franchises and consents.

Because the fixed operating assets, or plant, so frequently constitute 90 per cent or more of the total investment, they are usually thought of as being synonymous with that "investment" upon which the regulatory authority is supposed to allow a fair return. Three important factors may interfere with the realiza-

[4] Thus, the Central Illinois Light Company, a subsidiary of Commonwealth and Southern, is reported to be amortizing such adjustments at the rate of $300,000 per annum beginning January 1, 1940, in accordance with an understanding with the Illinois Commerce Commission.

tion of an adequate return upon the book value of the operating property:

1. *Lack of adequate market.* Even when a company operates under monopoly conditions, the absence of a large enough market may prevent the realization of a normal return under any conceivable scale of charges. Raising charges to customers above a certain point may simply reduce both gross and net revenues. Street railways have suffered from this situation since World War I as a result of the competition of substitute modes of carriage. Quite probably, an attempt to realize an increased return upon railroad investment by the indiscriminate raising of rates would see traffic losses act as a counterbalancing force. Should the Government develop power projects without regard to the commercial possibilities of the market, a subnormal return would appear likely, although the remarkable growth of electric power consumption should be kept in mind in studying potential markets.

2. *Price level changes.* To the extent that the regulatory authorities decide to recognize current reproduction value of the plant rather than the cost as reflected in the properly kept balance sheet, price level changes reduce the usefulness of the accounting record. If prices fell after construction, and reproduction costs were given primary weight as the basis for rate-making, the return upon book value of the investment (cost) would appear subnormal. Analysis and utility regulation would be made easier at this point by a stable price level. The tendency in recent years has been to place more and more emphasis in regulation on original, or historical, cost. This attitude is reflected in court decisions as well as in the practice of regulatory commissions. It is reflected in the requirement that accounts shall not show "write-ups" even when a property is sold by one utility corporation to another, without regard to possible changes in reproduction value.

When the company has been engaged in a rate case in which the value of the property has been considered and determined by the commission, valuation figures are available that can greatly aid the analyst in the interpretation of the financial statements and in the understanding of probable attitudes of the regulatory authority in that jurisdiction.

3. *Maintenance and depreciation.* After the property has been in use for some time, the question will arise as to whether maintenance has been more or less than adequate to maintain

its value, and whether sufficient allowance has been made for any depreciation. A regulatory commission might decide that the property had less value than that shown on the books, and might allow earnings only in relation to the depreciated value. Because so much of the utility property of many companies was constructed during the 1920's, when (*a*) prices were stable, (*b*) accounting methods for operating companies were improving in quality, and (*c*) property was sufficiently new so that maintenance and depreciation were not likely to have altered the significance of the cost figure greatly, balance sheet values came to receive more attention than was practical in the case of the steam railroads. Either price stability or greater emphasis upon cost as the valuation basis for computing fair return in regulation would continue this large interest in the accounting record of the fixed asset values.

Plant turnover. With the foregoing limitations of the book valuation of plant in mind, it is interesting to turn to two commonly used methods of studying plant valuation: first, that of comparison with gross revenues; and second, that of comparison with the capacity or output. The first relation is the familiar plant turnover. Because the fixed plant investment is so much larger than the annual sales, the ratio is generally reversed and expressed as the number of dollars invested in fixed property per dollar of gross revenues. In this way, plant turnover of 0.20 is stated as $5.00 of investment per dollar of gross revenues.

For the combined Class A and B electric utilities this ratio of gross fixed operating property to gross operating revenues was 6.2 in 1939. This figure stands for a combination of steam and hydro-electric plants. The ratios for a number of leading companies for the years 1930, 1935 and 1940 are shown below.

RATIOS OF GROSS FIXED OPERATING PROPERTY TO GROSS REVENUES OF SOME LEADING ELECTRIC & GAS UTILITIES

	1930	1935	1940
Boston Edison Company	5.2	5.3	4.7
Commonwealth Edison	3.8	3.8	4.4
Consolidated Edison of New York	4.9	5.4	4.9
Consolidated Gas, Elec. Lt. & Pr. of Baltimore	4.2	4.3	3.9
Detroit Edison	5.1	5.9	5.0
Duquesne Lighting	5.8	7.0	5.7
Pacific Gas & Electric	8.2	7.2	6.7
Peoples Gas Light & Coke (Chicago)	4.0	4.5	3.7
Philadelphia Electric	5.4	5.9	5.3
Southern California Edison	8.2	9.1	7.8
Union Electric of Missouri	6.2	7.6	6.7

During a period of growth, these ratios based upon property account at the end of the year rather than the average assets tend to be overstated. In some cases, the asset doubtless included installations not brought to the point of full production—which might give an incorrect impression of excessive asset costs. The recent tendency to purchase power from other corporations promises to produce a further complication in the use of this ratio. The Safe Harbor Water Power Corporation was organized by the Consolidated Gas, Electric Light & Power Company of Baltimore and the Pennsylvania Water & Power Company, in order to develop that large low-cost hydrogenerating plant. The Southern California Edison now purchases power from the Federal Government's Boulder Canyon Dam project. Such arrangements mean that the operating company has no asset in its balance sheet for the money invested in generating equipment save as it owns securities in this outside company. The result is an apparently lower ratio of property to revenues, which may be deceptive to casual readers since the operating company is generally indirectly responsible for the financing of a share of this outside project through contracts for the purchase of power.

The high property investment of the water power company as compared with the ordinary company generating through the use of steam power is illustrated by the Pacific Gas & Electric and Southern California Edison figures. These companies depend heavily upon hydro plants. Such properties frequently show from $8 to $10 of investment per dollar of revenues; but by eliminating the cost of fuel, they are able to devote a larger fraction of the income to paying interest and dividends. If such a company devoted itself solely to generation, selling its power wholesale for distribution by another company, its operating expenses would be nominal, and virtually the whole revenue could be used for capital return. The interrelation of plant turnover and the operating ratio will be considered below in the discussion of the income statement. Without charging the company that has a relatively high property investment with "overcapitalization" or "inefficient investment," it may be said that such a company will tend to have greater difficulty in earning a fair return, unless the property is of a different type, such as a hydro-electric property, and so not comparable.

Investment in relation to capacity. In the electric field, the Property account is sometimes studied in relation to its ability to produce power. One estimate has placed the average cost of

erecting a good-sized, modern steam electric plant at between $100 and $125 per kilowatt of capacity, and a fair average cost for developing water-power sites, exclusive of those few, like Niagara Falls, that are especially favored by nature, at about $200 per kilowatt of capacity, with some running as high as $300.[5] Morrow states that 16 steam plants built since 1927, with a capacity of from 15,000 to 200,000 kilowatts, cost from $82.50 to $145 per kilowatt, with an average of $114.[6] (A kilowatt equals approximately 1⅓ horse power. One horse power equals .746 kilowatts.) The cost of a steam power plant generally amounts to almost half of the total fixed investment, so that the total investment would be expected to run from two to two and one-half times that figure. Nash has suggested a range from $250 to $450, with the lower limit possible for a compact community with no underground distribution system, and the higher figures for fairly large cities with unusually extensive underground distribution, substations, and storage batteries for emergencies.[7]

Although some have been inclined to attribute cost differences to variations in efficiency of design and promotion, further allowances must be made for differences due to location and, even more, to price level fluctuations over long periods.[8] Hydro-electric installations cannot be said to have at any time a standard cost range, because the amount of power which can be developed is an accident of nature. Actually, some similarity is usually expected because possible water-power sites are known, and whenever the growth of the market is sufficient to make a promotion able to pay its way, development will take place. The chief concern of the analyst is that the cost shall not exceed that maximum beyond which the development will be unable to earn

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[5] Badger, Sherwin C., "White Coal Buncombe," *Barron's*, October 22, 1928, p. 3. Reprinted in Dorau, H. B., *Materials for the Study of Public Utility Economies*, p. 388.

[6] Morrow, L. W. W., "Steam Station Cost Survey," *Electrical World*, Nov. 23, 1935, pp. 51–58. A convenient summary is given by Childs, John F., and Woodbridge, Francis A., *A Practical Introduction to Public Utility Security Analysis* (New York: Barron's Publishing Co., 1940), pp. 93–97.

[7] Nash, L. R., *The Economics of Public Utilities* (New York: McGraw-Hill Book Co., 1931), p. 343. Chapter XIII is devoted to "Tests of Utility Development."

[8] In 1916, when the price level was lower, the average cost of a first-class steam plant was estimated at from $55 to $75 per kilowatt of capacity, and the first cost of an average hydro-electric installation at $150 per kilowatt with possible additional amounts for storage dams. (Stott, H. G., "The Cost of Generating Power," *Electric Journal*, Vol. 13, August, 1916, pp. 373–376.)

a reasonable return upon the amount invested in it. The continuing increase in efficiency of steam plant operation in recent years has somewhat dampened enthusiasm for water power, save where it is very advantageously situated.

Some of the special disadvantages which the hydro-electric as compared with steam-power projects may suffer are as follows:

1. *A large investment per horse power.* The consequently heavier fixed charges make the company less adjustable in a financial way to any business reverses.

2. *Frequent need for an initial overdevelopment.* The project may require the building of dams or other storage facilities in excess of immediate requirements, because the dam must, as a rule, be built once for all time. Consequently, the fixed charges during the early years may be difficult to meet.

3. *Development at the point of water flow and transmission difficulties.* The development may be at a distance from the market, and consequently may entail expensive transmission or even render the project impractical. It is stated that the Niagara water-power development was a business failure when first undertaken before it was able to reach an advantageous market in the city of Buffalo.

4. *Ice.* This may in some locations make the development impossible.

5. *Variations of flow.* This hazard runs all the way from the risk of destructive floods to a lack of sufficient water to meet requirements. Without power, the huge investment continues to create carrying costs with no compensating revenue.

Because the chief cost of a water-power development is the return to capital, any economy on that item is important. For that reason, if it could be assumed that a governmental unit would show the same efficiency in design and construction, it might effect a substantial saving through the lower cost of funds obtained through the sale of government rather than corporate securities.[9]

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[9] It should be noted that this statement does not settle the matter of relative operating efficiency after development. Furthermore, the nominal return offered on the corporate securities is not the real return to the investor, for it is often reduced by losses, as in the case of railroad and traction investments. If a governmental utility project failed, the Government and not the investor would be obliged to bear the loss.

Income Account

Operating ratio. The foregoing discussion gives the reasons for holding a flexible attitude in interpreting the results in the income statement as reflected in the operating ratio. A low ratio of operating expenses to gross revenues may be due, in the case of an electric company, to the ownership of a hydro-electric generating plant which requires a low ratio in order to leave an adequate return upon the large investment. A high ratio may mean, instead of inefficiency, that a successful management has been able to create an unusually large volume of business and so can earn a good return with a smaller margin of net income. To understand the effect of a well-developed load of business, the relation of the operating ratio and the ratio of property to revenues must be kept in mind. If a 7 per cent rate of return upon the property is the objective, then a company with a $6.00 investment for each dollar of annual revenues will need an operating ratio of 58 per cent to earn the $.42 constituting the desired return; if the investment is but $5.00, an operating ratio of 65 per cent will leave $.35, or enough to equal 7 per cent. Clearly, a utility able to increase its volume of business without increasing investment, merely by utilizing capacity more fully,

COMPOSITE INCOME STATEMENT

CLASS A AND B PRIVATE ELECTRIC UTILITIES FOR THE YEAR 1939
(Millions of Dollars)

Operating Revenues	2,647	100.0
Operating Expenses	1,192	45.0
Depreciation and Amortization	280	10.6
Taxes	389	14.7
Total Operating Revenue Deductions	1,861	70.3
Net Operating Revenues	786	29.7
Income from Utility Plant Leased to Others	7	.3
Total Utility Operating Income	793	30.0
Other Income	70	2.6
Gross Income	863	32.6
Interest on Long-Term Debt	277	10.5
Other Income Deductions—Net	51	1.9
Total Income Deductions	329	12.4
Net Income	535	20.2
Dividend Appropriations from Surplus:		
Preferred Dividends	124	
Common Dividends	320	
Total	444	

will be able to spread its capital costs over the larger gross revenues and so survive on a higher operating ratio.

These relationships between the income account and the balance sheet can be studied by a comparison of the Composite Income Statement of the Class A and B electric companies with the balance sheet figures given above.[10]

Load factor. The more complete utilization of capacity is known as increasing the load factor, which is the ratio of the average consumption to the maximum, or peak, demand. For an electric company this peak is the highest load placed by the customers' joint needs for a period of fifteen minutes, or some short period, during a given year. Because electricity is produced as used, the capacity of the system must be sufficient to handle this maximum demand. For gas, because of its storage in holders so that variations from hour to hour can be met by drawing on this reserve, the usual test of utilization would be the ratio of average consumption to the maximum demand for any one day in the year, which is usually known as the "production plant load factor." Similarly, the gas mains of a given size will carry only a certain load, or volume, of gas at the necessary pressure, and a distribution system load factor is computed as the ratio of average to maximum hourly send-out over an annual period. A traction or telephone company has the same load factor problem.

A comparison may also be made of the average load to the generating capacity of the system, commonly called the "plant factor." Such a comparison brings out the degree of plant utilization but mixes two matters, namely, the extent to which demand has been smoothed out (the load factor) and the lack of full utilization due to an excess of capacity over the peak demand for the year.

In a period when plant expansion has outstripped growth in consumption, or consumption has fallen off greatly, the disparity between the plant and load factors will be unusually great because of the large spread between even the peak demand and the capacity of the plant. In studying hydro-electric plants, it is also necessary to remember that the ability to reach rated

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[10] Federal Power Commission, *Statistics of Electric Utilities in the United States, 1939.* Class A includes companies with $750,000 or more annual operating revenues or $4,000,000 or more (original cost) of electric plant; Class B, companies with more than $250,000 but less than $750,000 operating revenues and plant less than $4,000,000.

capacity is dependent upon a water flow adequate to motivate all of the generators to their maximum, so that in some years it may be impossible to achieve the installed, or rated, capacity.

Diversity factor. A favorably high load factor is usually achieved by building up demand in the off-peak hours or seasons by merchandising efforts. Customers never make their individual peak demands upon the plant at the same time, so that the total of their individual maximum demands can exceed plant capacity considerably. The possible peak demand of the individual customer is usually measured by his "connected load," that is, the demand he would make if he used at one time every light, motor, or other electric device he had connected with the power circuit. A measure of the spreading out of the customers' peak demands is found in the diversity factor, which is the ratio of the sum of individual customers' maximum demands to the actual peak demand on the system during the given year.

An illustration, which represents a pioneering statistical investigation of its sort, will be valuable at this point in giving a picture of how the diversity factor operates. In describing the situation, Mr. Samuel Insull stated: [11]

> The maximum load on our system came on the sixth day of January, and the demand on us for energy . . . was so diversified that, notwithstanding it would have taken 26,640 kw. . . . to take care of the maximum demand of each one of these customers separately, on the day when the greatest demand came on us from all sources, it took only 9,770 kw. for these same customers.

Substituting these figures in our formula for diversity factor,

$$\text{Diversity Factor} = \frac{\text{Sum of Individual Customers' Maximum Demands}}{\text{Actual Peak Demand of System}},$$

we have:

$$\text{Diversity Factor} = \frac{26{,}640 \text{ kw.}}{9{,}770 \text{ kw.}} = 2.7.$$

Some of the factors producing this variation in the time at which the different customers make their maximum demands may be visualized best by considering the data from which the above diversity factor was obtained. The company studying the question installed with a large number of their important customers special recording meters (Wright Demand Meters), which made a record of the load that the customer placed on

[11] Samuel Insull, "Centralization of Power Supply," *Public Utility Economics* (lectures before West Side Y.M.C.A., New York), p. 99.

the power company throughout the day. By taking the maximum load of each customer for the year, it was possible to obtain a sum of the maxima, which could be compared with the peak demand in the above formula.

Analyzing the factors which diversify the demand and so prevent a coincidence of customers' maximum demands, which would unduly push up the peak demand, we find:

1. Some consumers, because of the very character of their business, find the peak day "unseasonable" and have either no need or else very little need for power at that time. For example, the brick yards and quarries do not run in the winter time, as the frost interferes with their business. Again, the demand of the ice manufacturers is very much curtailed during the winter.

2. Some consumers will, by virtue of the use to which they put the power, cut their demand in one direction as they increase it in another or by the nature of their operation will make their demands at different times. Thus, a workman employed by a manufacturer—assuming that the workshop is meant for light manufacturing purposes and located in a high building—cannot run a tool in the workshop, go down in the elevator which takes him to the street, travel on a street car, and use the electric light in his home all at the same time.

3. Special arrangements may be made with some of the heavy industrial users to have them shut off their demand at the period of maximum load. In this instance, such arrangements were made with some particularly heavy users like the cement works.[12]

The illustration is suggestive of the manner in which an increase in the diversity factor may be utilized to improve the load factor and increase the economy of operation. The demands of the individual consumers are spread more evenly in the first and second instances by taking a diversity of classes of consumers, and in the third instance, by deliberate arrangement with certain of the largest industrial customers.

The problem is one of efficient utilization of a large capital investment, and is ordinarily thought of as being unique with the public utilities, where it is unusually important; but it exists wherever a considerable proportion of fixed costs is found.

Load factor and cost to the public. Low income for the power company per unit of power sold—and so, low cost—is associated

[12] *Ibid.*, p. 98.

with a high load factor and high output per capita. The difference between Eastern cities, such as New York, Boston, and Philadelphia, and places supplied by hydro-electric power, like San Francisco and Niagara, is considerable. The difference cannot be assigned to innate differences in the cost of water power and of steam power; for Chicago, with steam production, is remarkably close to the hydro-electric standard as to lowness of income, high output per capita, and first-class load factor.

The Western hydro-electrics were compelled to make, in most cases, very large installations at the outset. The only solution to their problem of securing an adequate return under these circumstances, in view of the relatively sparse population, was to offer low rates and develop a large industrial consumption with a load factor sufficiently high to offset the low rates. The position of Chicago, however, is less the result of natural conditions than it is of efficient and imaginative management.[13]

Differential rates. An understanding of load factor and the large importance of fixed costs in utility operation leads to an appreciation of the advantages of securing additional business at off-peak hours, even at reduced rates, in order to spread the fixed overhead over a greater volume of units sold and so produce lower rates for all customers. But offering the service or product of a utility at different prices has the appearance of discrimination, and, therefore, of unfairness. The actual basis of differential rates should be an analysis of costs; an illustration will aid the reader of general financial statements to understand the peculiarities of various utilities as well as certain underlying principles of one of the most controversial aspects of rate-making.

In the following illustrative analysis, the figures for six coal gas companies situated in various parts of the United States were combined.[14] Table I shows the costs added to interest and dividends to secure the total cost of obtaining the gas service for the public. This would be the income of the companies as they

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[13] *Ibid.*, p. 109.

In 1940, the average revenues per kilowatt-hour sold for Commonwealth Edison, Consolidated Edison of New York, Pacific Gas & Electric, and Southern California Edison were 1.92, 3.06, 1.68, and 1.56 cents, respectively.

[14] This analysis was prepared by the Committee on Differential Rates ("Proceedings of the National Commercial Gas Association," 1914, pp. 494–522). The debated item of depreciation was omitted from the costs. This discussion is intended to develop the economics of rate structure rather than to serve as a guide to practice. For current practices and problems, see Nash, L. R., *Public Utility Rate Structures* (New York: McGraw-Hill Book Co., 1933).

existed. Table 2 furnishes other data necessary to the analysis. The capitalization is assumed for the purpose in hand. The load factor was 25.65 per cent, indicating that the average demand is but one-fourth of the maximum hour's demand. The analysis of the costs is shown in Tables 3 and 4. The latter table shows the costs reduced to the most appropriate unit basis. The separation of the costs is as follows:

A. General costs. Overhead costs not affected by the immediate number of customers, the size of the plant, or the output of gas.

B. Customers' costs. All expenses and charges from the inlet of the customer's gas meter to the receipt of money in the cashier's till. Thus, the expense of reading meters is a customers' cost and varies proportionately with the number of customers.

TABLE 1

	Total Cost	*Cost per M Cu. Ft. Sold*
Gross Cost of Gas-Making Supplies	$ 591,584	36.7¢
Credit from Residuals	369,095	22.9
Net Cost of Gas-Making Supplies	$ 222,489	13.8¢
Retort House Labor	157,859	9.8
Maintenance	40,276	2.5
Other Production Expenses	75,248	4.7
Total Production Expense	$ 495,872	30.8¢
Total Distribution Expense	58,666	3.6
Total Consumer Expense	201,845	12.5
General Miscellaneous Expense	221,915	13.8
Taxes and Insurance	108,802	6.8
Total Operating Expense	$1,087,100	67.5¢
Interest and Dividends	523,711	32.5
Total Cost of Gas Service	$1,610,811	$1.00

TABLE 2

	Par Value	*Percentage Rate of Return*	*Amount of Return*
Bonded Debt	$3,740,793	6	$224,448
Stock Outstanding	3,740,793	8	299,263
Total Capitalization	$7,481,586	7	$523,711

Gas Sales	1,610,811,000 cu. ft.
Number of Customers	53,760
Maximum Hour's Demand	717,400 cu. ft.
Demand Load Factor	25.65%
Sales per Customer per Annum	30,000 cu. ft.
Sales per Capita per Annum	4,000 cu. ft.
Inhabitants per Customer	7.48
Number of Inhabitants	402,000

C. Demand costs. All expenses and charges incidental to having a plant of adequate capacity to meet the maximum demand ready with heads up and gas at all the meters, but not actually making any deliveries through the customers' meters. For example, it is necessary to have equipment enough to turn out the maximum demand. So maintenance and interest charges on such assets will be a demand cost. When demand does not reach the maximum, the costs will continue.

D. Output costs. All expenses incidental to the additional production of gas for actual passage through the customers' meters over and above all demand costs.

A more definite idea of the nature of this division may be had by examining the costs listed in Tables 3 and 4. The manner of dividing the costs among the customers is shown in Table 4. The general costs, while necessary, cannot be definitely allocated. They are divided among the customers equally for the sake of simplicity. In practice, they should be charged in any way that will least impede the growth of service and the reduction of its price. The treatment given in Table 4 puts them in the same class as the second column of costs, and makes them a part of a charge to be made on each customer regardless of his consumption.

Relating rates and costs. A superficial examination of Table 1 might lead one to state that any reduction of the rate below $1 per thousand would cut into the surplus of 32.5 cents of return to the investors. Further, if the rate went below 67.5 cents, it would mean the sale of gas below operating cost. It is clear, however, that if an additional volume of gas could be sold without increasing the number of customers or the size of the plant, any receipts over 30.8 cents would add to the profits (see Table 4). Imagine the possibility of a doubled output under these conditions. This is possible, at least theoretically, since the load factor indicates that the plant is producing only about one-fourth the amount that it does while under the peak load. This illustrates why the company would find it profitable to sell additional gas at a lower rate than $1 or even $.675 per thousand.

A study of Table 4 yields the following conclusions as to possible rates:

1. *Output costs.* This amount represents the minimum limit for the selling price, and gas sold at this figure, 25 cents, would not yield anything to cover the other necessary costs. This

TABLE 3

AN ANALYSIS OF GAS-MANUFACTURING COSTS

	A *General*	*B* *Customer*	*C* *Demand*	*D* *Output*	*E* *Total*
Gross Cost of Gas-Making Supplies	.....	.....	$ 22,291	$569,293	$ 591,584
Credit from Residuals	.....	.....	.....	369,095	369,095
Net Cost of Gas-Making Supplies	.....	.....	$ 22,291	$200,198	$ 222,489
Retort House Labor	.....	.....	9,847	148,012	157,859
Maintenance	.....	.....	17,035	23,241	40,276
Other Production Expenses	.....	.....	64,934	10,314	75,248
Total Production Expense	.....	.....	$ 114,107	$381,765	$ 495,872
Total Distribution Expense	.....	.....	36,931	21,735	58,666
Total Customers Expense	.....	$ 201,845	.....	.....	201,845
General and Miscellaneous Expense	$ 221,915	.....	.....	.....	221,915
Taxes and Insurance	108,802	.....	.....	.....	108,802
Total Operating Expense	$ 330,717	$ 201,845	$ 151,038	$403,500	$1,087,100
Interest and Dividends	160,195	190,658	172,858	.....	523,711
Total Costs	$ 490,912	$ 392,503	$ 323,896	$403,500	$1,610,811
Capital Invested	$2,288,485	$2,723,685	$2,469,416	.....	$7,481,586

TABLE 4

AN ANALYSIS OF GAS-MANUFACTURING COSTS—UNIT BASIS

	A *General per Customer in $*	*B* *Customer per Customer in $*	*C* *Demand per M Maximum Hourly Demand*	*D* *Output per M Cu. Ft. Sold in Cents*	*E* *Total Cost per M Cu. Ft. Sold in Cents*
Gross Cost of Gas-Making Supplies	.....	.....	$ 31.00	35.30¢	36.7¢
Credit from Residuals	.....	.....	.....	22.90	22.9
Net Cost of Gas-Making Supplies	.....	.....	$ 31.00	12.40¢	13.8¢
Retort House Labor	.....	.....	13.70	9.20	9.8
Maintenance	.....	.....	23.80	1.44	2.5
Other Production Expense	.....	.....	90.50	0.64	4.7
Total Production Expense	.....	.....	$ 159.00	23.68¢	30.8¢
Total Distribution Expense	.....	.....	51.50	1.32	3.7
Total Customers Expense	.....	$ 3.76	.....	.....	12.5
General and Miscellaneous Expense	$ 4.13	.....	.....	.....	13.7
Taxes and Insurance	2.02	.....	.....	.....	6.8
Total Operating Expense	$ 6.15	$ 3.76	$ 210.50	25.00¢	67.5¢
Interest and Dividends	2.98	3.55	240.95	.....	32.5
Total Costs	$ 9.13	$ 7.31	$ 451.45	25.00¢	$1.00
Capital Invested	$42.41	$50.66	$3,442.17		$4.64

amount, then, must be included in any rate and should be charged per thousand feet of gas consumed.

2. *Demand costs.* These represent expenses necessary in order to be ready to supply the customers with gas, a fact which suggests dividing the demand costs among the customers on the basis of their potential demands. The addition of each customer has increased the connected load of the plant. The amount of the load depends on the size and number of burners installed.

As a practical matter, the maximum demand on any plant will never reach the amount that might be expected from the total connected loads, since there are always idle burners. The maximum demand of individual customers will come at different times. Thus, if all our customers chose to use their maximum demand at a single time, so utilizing the full connected load, it might be necessary to charge $4 per 100 cubic feet of maximum demand. If, however, the customers made their demands at different times, thus spreading the load more evenly, so that there was a diversity factor of 2, the rate per 100 cubic feet maximum demand based on the individual customer's maximum demand would be but $2. A diversity factor of three would reduce the charge to $1.33.

$$\text{Diversity Factor} = \frac{\text{Sum of Individual Customers' Maximum Demands}}{\text{Actual Maximum Demand}}.$$

The diversity factor is to be stressed, since it indicates how, when two customers purchase equal quantities of gas, one may be more profitable to the utility than the other. If one customer wishes service at the time of peak demand and the other desires gas at an hour when demand is slack, the latter is the more desirable. The first customer requires an increase in the capacity of the plant and a consequent increase in "demand costs"; the latter requires neither, and his business will increase the diversity factor. Herein lies the expediency of lower rates for certain customers, if lower rates are necessary to secure their business.

The load factor is also significant. The large consumer is frequently a steady consumer; that is, he consumes at a steady rate for a considerable period. The small consumer, on the other hand, frequently takes his gas in a lump within a comparatively few hours, which means that, in proportion to his needs, the smaller consumer requires a larger amount of plant investment per unit of consumption. Any rate based on the thousand cubic feet consumed would justly be higher for the latter in-

dividual. In the aggregate, the large consumer will pay more; but on a per-thousand-cubic-feet-consumed basis he will pay less, if rates are properly differentiated.

3. *Customers' costs.* These will presumably be distributed among all customers alike. The company might make a flat "service charge," regardless of consumption, to cover these costs, although as a matter of expediency the smaller customer might be charged less.

4. *General costs.* These costs are frequently lumped with the customers' costs. They must be met, and preferably will be spread among the customers, as previously suggested, so as to interfere least with the growth of the service.

The foregoing discussion shows the error of thinking of costs solely in terms of "per thousand feet of gas consumed." Even with a uniform type of product, there are differences in the per unit cost of production. Two variables which make for unlike costs are volume and the time of demand. These factors indicate, in this instance, the justice of differential rates. Such rates mean not only profitable expansion to the business, but greater service to the public and a possible reduction of rates.

The analysis suggests:

1. Business from present customers at those times when the plant is not fully utilized will be profitable on any basis above output cost.
2. Business from new customers that does not increase the maximum demand may be taken profitably at any figure that will more than cover output costs and customers' costs.
3. Business from new customers may profitably be taken at a lower rate than the present one, if that business results in a higher load factor and does not require a more than proportionate increase of investment in plant and distribution system.

Investors' interest in rates. This bare statement of the principles obviously requires much care in application. An avenue for business expansion which can be beneficial to both the company and the public is suggested. Because of the political pressure possible from a large body of small residential users, a management concerned with public relations will be inclined to resolve doubts about the proper allocation of costs in favor of the domestic user. However, the large industrial customer, who is most likely to be co-operative in purchasing gas or electric

power at off-peak hours, is able to use substitute forms of energy or develop his own power if he is not won over by sufficiently low rates.

The possibility that a utility with above-average rates may receive unfavorable treatment by the regulatory authority explains the investor's interest in the subject, and he should seek the explanation, such as high plant costs or high operating expenses. In a competitive line of business, unduly high costs would be reflected in smaller profits; but in a monopoly, the situation may not appear in the income statement until the blow of rate reductions has been struck by the Commission. The principle of regulating rates to permit a fair return is not intended to require the public to pay a return upon imprudent or excessive investment nor for unnecessarily high operating costs.

In the study of rates, the average charged per kilowatt hour is insufficient evidence because of the varying proportions between wholesale and retail, and between industrial and domestic, business. Particular attention is given to rates charged the domestic customer. In the case of electricity or gas, the cost of the usual amounts consumed per month by the average residential user would be taken. Location and size of community will make for differences in unit costs. Coal will vary in cost in different localities. In small communities, it may be difficult or impossible to get the benefits of a high load factor and the low production cost of a large plant.

The inefficiency of the isolated electric plant led during the 1920's to the purchase and joining together of the services of many scattered communities into large central stations through long-distance transmission systems. Some such promotions paid high prices for properties acquired and depended upon the continuance of relatively high rate levels for their financial success. Should the Diesel engine using cheap fuel oil prove to be an efficient low-cost power producer for relatively small local loads, the rates of the more heavily capitalized systems would suffer by comparison.

This type of study requires an analysis of the operating section of the utility's Income account. The account should segregate gas, electric, or other operations for a company such as Consolidated Edison of New York, which combines a number of services.

Gross revenues. Only when the gross operating revenues, or sales, are broken down to show the branches of utility service and the type of customer from which the income is derived can a

really satisfactory study be achieved. With such detail available, changes in the revenues from year to year will be checked to see whether they result from (1) changes in size or capacity of the plant, (2) changes in the amount of business with the size of plant unchanged, or (3) a modification of the rate structure. A comparison of the property investment with the physical volume of business, that is, in kilowatt hours of electricity or cubic feet (or therms) of gas sold, permits study of the first two possibilities. Rate changes are a matter of public record, and the company very frequently reports the influence which they have had upon revenues for the first year of their effect so as to indicate their percentage importance.

During a period of price change, rates are generally adjusted slowly to the changed level of costs. When prices rise rapidly, this tardiness is likely to reduce net income, especially if any substantial part of costs are in the form of commodities, like coal, which fluctuate more rapidly than wages.

The following table, compiled from the figures of 142 different gas companies in forty states, each one sending out from 20,000,000 to 10,000,000,000 cubic feet per annum, shows the unequal advance of manufacturing costs and average revenue per thousand feet of gas sold during a period of rapid rise in prices.[15]

Year	*Manufacturing Cost (Per Cent of 1915)*	*Average Revenue per M (Per Cent of 1915)*
1916	1.453 increase	1.537 decrease
1917	24.018 "	2.358 "
1918	68.249 "	2.570 increase
1919	77.404 "	11.419 "
1920	115.087 "	17.781 "

The goodwill of the public is especially valuable in securing a fair adjustment of rates during such a period. The street railways have been seriously handicapped in obtaining any hearing on increases, no matter how reasonable, because of public ill will and suspicion—the latter justified in some instances by the unsavory activities of traction promotors and financiers. Growing frankness in public relations and the increasing ownership of securities by customers are regarded as favoring customer-goodwill.

Stability of revenues, especially during a period of business recession, is valuable in giving utility securities investment

[15] Parker, George S., *Gas Age-Record*, Vol. 48, p. 195, August 20, 1921.

standing. A large proportion of the more stable domestic or residential business, as compared with the more fluctuating industrial demand, is consequently looked upon as desirable. This difference in stability explains the importance attached to reports which classify the sources of gross revenues. Gas companies should show industrial and residential revenues; electric companies, their residential, industrial, commercial, street railway, and municipal revenues; telephone companies, their local and toll revenues. To the extent that the proportion of industrial business, particularly that of the heavy industries, is expanded, stability diminishes. For this reason, the gas companies look with particular satisfaction upon the increased use of their product for residential heating; and the electric companies, upon the increased use of domestic appliances, electric refrigeration, and air conditioning.

Operating expenses. The operating expenses may be studied both in relation to gross revenues on a percentage basis and on a per unit of service basis, as per kilowatt hour or per thousand cubic feet of gas. A suggested unit for the telephone industry has been the telephone station, or subscriber; but with growth in number and in distance of calls, it is apparent that the individual subscriber has been receiving an increased amount of service with the passing of years. Another possible basis of cost and revenue analysis is the single telephone call, but even this unit changes its character with the lengthening of the distance of the average call. Even when a single city is studied, the distance factor may be significant as the city's area expands. This changing character of the "unit of service" may explain why studies of telephone costs have shown that they increased with the extension of service, giving the telephone business the reputation of being an "increasing cost" industry.

The significance of the load factor, plant factor, diversity factor, and operating ratio in their relation to the study of operations has already been discussed. In addition to the influence of water versus steam power, two other influences may alter the usual meaning of the operating ratio of a gas or electric company: the proportions of wholesale and retail business and the presence of purchased power or gas. Whenever power or gas is sold wholesale, various operating expenses connected with distribution are reduced or eliminated, and the operating ratio declines, while the relative importance of the return upon capital funds increases. On the other hand, a company which purchases any considerable

portion of its power or gas includes that cost among its operating expenses, and since this cost includes the capital expenses of the generating or manufacturing company, the operating ratio of the purchasing and distributing company rises. The latter company has shifted the burden of financing so much plant to another company.

Because water flow may vary from year to year, companies using hydro-electric plants usually require stand-by steam generating plants to care for the deficiency in power. The effect of subnormal flowage is to boost expenses and the operating ratio and reduce earnings. In order to minimize the effects of such fluctuation upon earnings, some companies set up a reserve, or suspense, account which is built up in years when flow is above normal and reduced in years of subnormal flow.

Consolidated Gas, Electric Light & Power Company of Baltimore established an account "Hydro Equalization" in 1931 for the purpose of avoiding variations in operating expenses from period to period resulting from variations in the flow of the Susquehanna River above or below an average computed from records of past periods. The net result of debits and credits from 1931 to the end of 1940 was a net debit, *i.e.*, a net deferment of operating expenses, of $1,455,810. In 1935 a surplus appropriation of $500,000 was made to reduce the accumulated balance so that at the end of 1940 the net debit balance was $955,810, or slightly under 8 per cent of the Profit and Loss surplus.

Depreciation expense. As in the case of the railroads, the policy with respect to maintenance and depreciation is of especial interest in the study of operating expenses, because of their relative importance, because they are more subject to variation at the will of the management than are ordinary expenses, and because their manipulation can result in a misreading of income and balance sheet values. Until recently, the term *retirement expense* was commonly used to take the place of *depreciation* in utility accounts. The method provided that charges made against income or surplus or both should provide for current retirements and build a reserve of indefinite amount against future retirement losses. The reserve was not intended to measure actual depreciation due to wear and tear, obsolescence, or inadequacy, and so differed from the conventional straight-line depreciation common in most other fields. At the beginning of 1937 depreciation accounting was adopted by the Federal Power Commission and then recommended by the National Asso-

ciation of Utility Commissioners. It became effective in many states on January 1, 1938.

Some have argued for retirement allowances to be based upon the volume of electricity sold.[16] Such a plan would have much to commend it from a financial point of view. It would adjust the charge to some extent to the ability of the company to bear the expense.[17] Others have excused the possible inadequacies of arbitrary retirement allowances on the grounds that retirements are chiefly due to obsolescence in this field and might be charged off gradually after the retirement is made.[18]

Since depreciation is accepted in the utility field the debate as to its merits need not be recounted here. The chief problem of the analyst is to decide upon its adequacy. The chief need of the student is to understand its effect.

One fear sometimes expressed, that reserves are in themselves dangerous because they "reduce the book value of the property and consequently the amount of investment upon which the company will be permitted to earn a return," deserves passing attention because it is a result of a common misunderstanding of the effect of allowances upon the statements and the business.

The following figures illustrate the effects of setting up a reserve for depreciation. In the two illustrative balance sheets,

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[16] This position was well stated by H. M. Edwards, of the New York Edison Co. His conclusions may be summarized as follows: (1) A percentage of book value of the property does not allow for variations in output from year to year. (2) A percentage of gross revenues does not bear equally on all the product, because of different rates; for example, where one kilowatt hour is sold for 10 cents, the amount would be more than if sold to another consumer who has a 5-cent rate or less. (3) An appropriation from surplus earnings is arbitrary and fails to regard depreciation as an operating expense, like fuel, etc. (4) When one reserve on the whole property instead of on parts is created, the reserve is more flexible. It is impossible to know which units will be superseded. (5) Allowance is based on units of electricity sold rather than on units produced merely because of local conditions. Either method is satisfactory. Edwards, H. M., *National Electric Light Association Proceedings, 34th Convention,* Vol. 2, May 29, 1911, pp. 179–186.

[17] Nash makes an interesting suggestion in line with this conception of depreciation, namely, that the retirement reserve be used as a "barometer fund," with an increase of rates following whenever the reserve falls below a certain per cent of property, and vice versa. Such a plan would tend to encourage retirements and stabilize net earnings. Nash, L. R., *The Economics of Public Utilities* (1931), p. 89.

[18] For a fuller statement, see Jones, Eliot, and Bigham, T. C., *Principles of Public Utilities* (New York: Macmillan, 1931), pp. 478–494. A full statement of a more orthodox accounting position is given by the Public Service Commission of Wisconsin in *Depreciation* (New York: State Law Reporting Co., 1933), a review of legal and accounting problems.

the current liabilities are eliminated by subtraction from the current assets, and the difference is stated as the asset, "Working Capital." It is assumed that the term "investment of the company" includes working capital as well as fixed properties.

SOUTHERN ELECTRIC LIGHT & POWER COMPANY

December 31, 1940

Working Capital	$ 50,000	Bonds	$300,000
Fixed Property	500,000	Stocks	250,000
	$550,000		$550,000

If the Southern Electric Light & Power Company does not set aside any reserve for depreciation, the balance sheet will, at the end of a period of years, show little change, assuming, for the sake of simplicity, that no additions are made and that all earnings are paid out in the form of interest and dividends.

If, on the other hand, it is the policy of the regulatory commission to permit the inclusion of an allowance for depreciation among the operating expenses, and the company follows this policy, a higher rate will have to be charged the consumer to obtain the same return on investment as that earned in the former case, and an accumulated "Reserve for Depreciation" will appear in the balance sheet. At the end of five years, during which an allowance equal to 2 per cent of the fixed property has been made each year, the initial balance sheet shown above will be changed to read:

SOUTHERN ELECTRIC LIGHT & POWER COMPANY

December 31, 1945

Working Capital	$ 50,000	Bonds	$300,000
Fixed Property	500,000	Stocks	250,000
Added Property	50,000	Reserve for Depreciation	50,000
	$600,000		$600,000

A current misconception is that reserves of the sort described injure the stockholders by reducing the book value of the investment upon which a return is allowed. The error lies in the failure to observe that the company is collecting an additional amount from the consumers to cover the allowance for depreciation included among the operating expenses. (The validity of this reasoning depends upon the assumption that customers pay rates sufficient to cover this allowance as well as other expenses and a fair return to investors each year.) Since in this

case it was assumed that no actual retirements were made in the five-year period, the full accumulated reserve appears on the liability side and the unexpended sums collected appear as "Added Property." The reserve for depreciation is a valuation reserve, and the book value of the fixed property may be regarded as having been written down to $450,000; but $50,000 of additional property has been contributed to take its place, so that as much property exists as formerly to earn a return. The addition may be:

1. Expended to increase the operating properties, thereby keeping at the original amount the property investment upon which a "fair return" is to be earned;
2. Invested in independent properties or securities which will yield an independent return; or,
3. The sum may be used to reduce the bonded indebtedness or other securities.

In any one of the three situations outlined, the investors, whether bondholders or stockholders, are not injured. If the amount to be reserved has not been overestimated, the reserve in time will be utilized; but, should an excessive reserve be created, additions to it should cease, and the rates charged to consumers should be reduced.

The important difference between this policy of setting up adequate reserves and that of creating no reserve becomes clear if we suppose that shortly after December 31, 1945, it becomes necessary to retire certain units of equipment to make way for new. It will be assumed that the cost of the old equipment was $40,000. If the reserve has been set up to cover this loss, the management may reduce the asset of fixed property on its books to $460,000 to show this loss, and may offset it by a reduction of the reserve. The balance sheet will then appear:

SOUTHERN ELECTRIC LIGHT & POWER COMPANY

Working Capital	$ 50,000	Bonds	$300,000
Fixed Property	460,000	Stocks	250,000
Added Property	50,000	Reserve for Depreciation	10,000
	$560,000		$560,000

With the financial position shown in the preceding statement, the company should be able to provide itself with the newer equipment either by disposing of the "added property" or, if this addition represents permanent improvements to the plant, by

selling new securities. In either case, every dollar of the outstanding securities of the company will be based on a full dollar's worth of property.

Result of lacking reserves. If it had not provided a reserve, the balance sheet of the company would have appeared as follows after the retirement but before the entries were made to show the new property:

SOUTHERN ELECTRIC LIGHT & POWER COMPANY

Working Capital	$ 50,000	Bonds	$300,000
Fixed Property	460,000	Stocks	250,000
Property Abandoned	40,000		
	$550,000		$550,000

The disadvantages of this latter situation are apparent: (1) The securities must for a time be supported by a fictitious asset, "property abandoned," in reality a deficit, a condition particularly undesirable if it should be necessary to finance the purchase of the new equipment with a security issue. (2) The public must be asked to continue interest or dividends upon the securities issued to obtain this property which is no longer in use (unless the investor is to stand the loss) and to pay a sum to provide for the writing off of this lost property. (3) The management of a company in the situation outlined might hesitate to make a retirement which would appear in the balance sheet in this manner, regardless of the wisdom of making the desired changes from the standpoint of efficient service.

Where a depreciation reserve is being created, the consumers are asked to contribute to a fund which will permit the replacement of the property. The consumers enjoy the benefit of this property and so should provide for its retirement without loss to the investors. If we still assume the policy of protecting the investor, as is ordinarily expected to be the case where regulation limits the profits, then the later consumers must pay in a sum not only sufficient to replace the property no longer in use, but also sufficient to show a return on that property until it has been written off. This policy is one which finds favor in some quarters.[19] The assumption is that the company may expect a rate

[19] In Kansas City Southern R.R. *v.* United States (231 U.S. 423), the Supreme Court sustained a rule of the Interstate Commerce Commission providing for the amortization by way of a charge to future operating expenses of the cost of portions of a railway division withdrawn from service because of the construction

of return sufficient gradually to remove or amortize this amount over a period of years.

The arguments for this course of action are two: (1) that any reserve for retirements must, by its very nature, be based on guesswork, and hence unscientific and possibly unfair to the consumers of the company's service; (2) that any retirements of this nature, that is, those caused by advances in the arts, will provide economies which will make it possible gradually to write off the retired property without increased charges to the consumers.

The analyst must be governed by conditions as he finds them, but he will feel better satisfied when reserves are provided. Alexander Dow, president of Detroit Edison, once said: "When I find myself managing other people's large investments, I prefer not to take the chance of being able to earn the price of a dead horse out of future economies.[20] A company without such reserves should show a correspondingly larger surplus to merit as high a financial rating. Where provision has not been made for retirements and the company is not overprosperous, it is not likely that it will show a progressive attitude in making such changes as are desirable to keep pace with the progress of invention.[21]

Maintenance and depreciation practice. In view of the differences of opinion among operators as to the meaning of depreciation, it is not surprising to find considerable variation in both maintenance and retirement expense. Lyndon suggested that

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of a new line with lower grades and increased capacity, holding that the cost of the property thus withdrawn from service should not remain in the investment (asset) accounts, and that "abandonments occasioned by changes of this character are, therefore, chargeable to future earnings." A uniform classification of accounts has been recommended for both electric and gas utilities by the National Association of Railroad and Utilities Commissioners; both classifications provide an asset account for "property abandoned" to include the amount of any property destroyed or abandoned because of replacement, obsolescence, or an extraordinary casualty, or for any other reason, when such loss has not been provided for in advance through a reserve.

[20] Ripley, W. Z., *Main Street and Wall Street* (Boston: Little, Brown and Co., 1927), p. 335.

[21] Without its generous reserve policy, the American Telephone & Telegraph Company and its subsidiaries would probably have been handicapped in meeting the obsolescence of their property. The cost of changing from ground circuit to metallic circuit in the early days and the expense of such things as putting wires underground, of adopting lead cable, and of instituting the automatic switchboard and the dial telephone have meant enormous outlays. Other remarkable and costly advances in technology as applied to the various utilities have been common.

annual depreciation allowances based on complete plant, exclusive of land values, should run as follows,[22]

	%
Gas Plants	2
Electric Light and Power	3–3½
Electric Railway	3–4
Telephone	4–4½

These figures may be compared with the following percentages, which represent samples of practice drawn from various sources: [23]

RATIOS OF ANNUAL DEPRECIATION ALLOWANCES TO GROSS FIXED ASSETS
(Percentages)

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
Electric	1.07	1.00	.99	1.23	1.34	1.44	1.54	1.72	1.78	1.91
Gas	.85	.82	.84	.82	.86	.90	1.07	1.33	1.25	1.47
Water	...	.73	.76	.76	.80	.82	.80	.80	.80	.80

For water-power developments, because so much of the property may be in the form of dams, which are regarded as depreciating either not at all or else only very slowly indeed, a much lower rate is possible. On the other hand, a company with an investment in natural gas or oil properties would be expected to show a higher rate to allow for depletion. A very low depreciation rate would be reasonable if a very large retirement reserve has already been accumulated, or if a high maintenance ratio has been a counterbalancing factor.

Both depreciation expense and maintenance are frequently studied in relation to gross revenues. The ratios of depreciation

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[22] Lyndon, Lamar, *Rate-Making for Public Utilities* (New York: McGraw-Hill Book Co., 1923), p. 55.

[23] Electric and gas data (medians) compiled from *Financial Statistics for Electric and Gas Subsidiaries of Registered Public-Utility Holding Companies: 1930–1939* published by the Public Utilities Division of the Securities and Exchange Commission. For further discussion see Guthmann, Harry G., "Public Utility Depreciation Practice," *Harvard Business Review* (Vol. XX), Winter, 1942, pp. 213–222. Water data (medians) represent practice of ten major private companies. For an early study see Sickler, Barclay J., "Expenses and Capital Ratios of Wisconsin Electric, Gas, Telephone, and Water Utilities: 1927–1931," *Journal of Land and Public Utility Economics* (Vol. IX), February, 1933, pp. 57–62.

In studying the practice of individual companies, allowance should be made for differences in character, such as have been mentioned earlier, namely the presence of water power, purchases of power from other companies, and the like.

or retirement expense to gross revenues of the companies previously mentioned were as follows:

	(Percentages)									
Electric	6.1	6.1	7.0	8.3	8.4	9.0	9.2	9.8	10.2	10.5
Gas	4.5	4.5	5.0	5.0	5.1	7.4	7.7	7.8	7.5	7.6
Water	..	6.5	6.7	6.9	7.7	7.7	7.3	7.5	7.7	7.8

The relation of this table and the one preceding can be traced through the property turnover ratio. Thus, if there is a property investment of $5 for every dollar of revenues, a depreciation rate of 2 per cent on total property will amount to 10 per cent of revenues. Multiplying the common depreciation rate on total property by the usual relation of property to revenues, we find the following relationships:

	Depreciation Rate	×	*Property: Revenues*	=	*Depreciation: Revenues*
Gas	1.5%	×	5	=	7.5%
Electric (steam)	2. %	×	5	=	10%
Telephone	4. %	×	3½	=	14%
Water	1. %	×	10	=	10%

The sum of maintenance and depreciation for some of the more conservative steam electric companies runs between 16 and 18 per cent, although that of many well-known companies runs between 14 and 16 per cent. Because of the less depreciable character of the average hydro-electric property, a lower percentage might seem likely. Actually, the percentage of gross revenues consumed for maintenance and depreciation is often not greatly different from the same relation for a steam electric property. When it is remembered that the property investment of a hydro-electric plant may run twice as high in relation to revenues as that of a steam plant, it is apparent that the same percentage in relation to revenues may be but half as great for the former measured in relation to the Property account.

The combined maintenance and depreciation should probably run about one-fourth less as a percentage of gross revenues for gas companies other than those dealing in natural gas—that is, from 12 to 14 per cent.

The corresponding figure for the American Telephone and Telegraph system has been close to 30 per cent in recent normal years, about one-half being for maintenance. As a result of the loss of business in the depression years after 1929, this percentage rose to 38 per cent of revenues in 1933, although the absolute

dollar amounts for both maintenance and depreciation were reduced, the former somewhat more than the latter.

The ratios given here should be regarded as suggestive rather than ideal; but, like other averaged data, they provide a starting point for the work of analysis. Where no reasonable explanation for variations from the best practice in maintenance and depreciation standards is found, the reported earnings may be adjusted to allow for the difference. The assumption is that a company unable to maintain its property adequately is likely to be handicapped to that extent at some future time: while excessive maintenance is almost certain to be reduced at some time, and while rates may also be reduced when that occurs, the company is likely to be favorably situated with respect to a well-kept property with obsolescence at a minimum. The investor remembers that rate reductions for utility services are easier to achieve than rate advances.

External factors. The five external factors likely to be checked in connection with a utility-statement analysis should be mentioned before a summary is given of the points to be covered in such a study. These are:

1. *Franchises.* These are the grants to the utility of the right to use public property for its purposes. The electric and telephone companies string their transmission lines down the public streets, or, like the gas and water companies with their mains, bury them under the street. The electric railways lay their tracks on the public right-of-way. The two chief risks to the investor in a franchise are a limited life and a limited rate. Both features were regarded as essential for the protection of the community and the consumer in the earlier days before regulation had become well developed. The periodic expiration of the franchise gave an opportunity to the grantor to drive a new bargain. Sometimes the occasion has been used to make unfair demands, and the utility with its investment permanently sunk in fixed property has been in a disadvantageous bargaining position. For this reason, the investor prefers a perpetual franchise, or one which is "indeterminate," that is, good so long as the utility continues to fulfill its service obligations. Under such a franchise, a municipality may retain a right to purchase the property on some agreed basis.

Similarly, the fixed fare was designed to protect the public against excessive rates. This amount was sometimes extremely

generous to the utility and sometimes, after costs had gone up as a result of a rising price level, very inadequate. The substitute for this unsatisfactory arrangement has been commission regulation of rates designed to keep them in alignment with costs and a fair return to capital.

2. *Regulation.* The character of the regulation accorded utilities in a given jurisdiction is also of interest. Competent supervision may be helpful by preventing unwise financing, by insuring sound accounting practice and full reports, and by preventing competition. Regulation can, however, be oppressive in the matter of rate-making and in failing to allow adjustments to changing conditions. The two points likely to receive close attention are the commission's attitude as to what constitutes a fair rate of return and its stand as to what is a proper basis of valuation, the latter especially if the price level moves substantially away from the position it held during most of the decade of the 1920's.

3. *Price-level movements.* The possible importance of changes in the level of prices lies in their effect upon operating costs and upon possible changes in the valuation of the property investment.

4. *Legislation, including taxation.* Because of public interest in the utilities, legislation is not infrequent and may affect investment values. Taxation has been heavy. For electric companies, taxes not infrequently run between 15 and 20 per cent of the gross revenues.

5. *Government competition.* With Federal Government hydro-electric projects at Muscle Shoals, Boulder Dam, Coulee Dam, and a number of other less important places, a source of potential competition which was formerly unimportant is introduced. This power can be sold for distribution through existing private companies, but the Government may seek to compel a company buying power from the Government to make rates which would be inadequate to cover costs and a reasonable return to existing capital, with the threat of aiding in the erection of municipal plants. Companies with low rates, like the Southern California Edison, and doing business in a growing territory which will absorb the new power supply, are most likely to adjust themselves satisfactorily to the new situation.

Summary of statement analysis. In the study of utility statements, the following are likely to represent the points of interest:

1. *Capital structure proportions,* which should (*a*) include surplus, and (*b*) give consideration to the probable valuation of the supporting operating property and to the character of any other assets, such as investments.

2. *Working capital position.*

3. *Coverage of charges,* fixed and contingent. These figures should be read in the light of possible adjustments for excessive or inadequate maintenance and depreciation. Furthermore, the possibility that no cash expenditures may be required for the depreciation allowance, at least for a few years, should be kept in mind in judging the likelihood of default where fixed charges are barely earned or not fully earned after the deduction of that expense.

4. *Rate of earnings.* Percentage earned on total investment, represented by bonds and net worth, and the return on the common stockholders' equity will both receive attention. If more than a minor amount of nonoperating investments are present, the earnings on these and upon the utility assets proper will be studied separately. Reported earnings may require some adjustment after the adequacy of the maintenance and depreciation has been checked.

5. *Stability of earnings.* The territory served and the type of customer will help to explain stability. A large proportion of domestic business is regarded as favorable, although diversification is necessary if a high load factor and economical operation are to be achieved. Because of their unfavorable position, traction and ice properties are looked upon as unsatisfactory as compared with other types of utility business in recent years. Since 1930 manufactured gas companies have fared less satisfactorily than electric and telephone utilities.

6. *Rates.* Because a company with low rates is in a stronger position to resist demands for reductions, the rates charged, especially those for the average domestic customer, are a matter of interest. Factors which help to explain rate levels, such as unit operating costs, property turnover, and load and diversity factors, will be studied here.

7. *Growth possibilities.* Opportunities for profitable expansion make a company's common stock more attractive because earnings can be retained advantageously, or rights to subscribe to new stock which will be attractive may be given. Such stock offers the holders the advantage of building up an investment at what amounts to a high rate of compound interest—seven per

cent or better. Profitable growth may result from either increasing population or a rising per capita consumption. Customary studies of the territory served and patronage development, in the form of per capita and per customer consumption and the number of customers in relation to population, are designed to uncover potentialities, although the actual previous trend of business is often one of the simplest and best measures of a given company's opportunities and ability to exploit a given market.

In outlining a particular study, the analyst will adapt the foregoing to the need for information in the particular case, the limitations in the way of available data, and the amount of effort which can be economically expended.

CHAPTER XIV

Mercantile and Manufacturing Corporations

Scope of the chapter. Much of what was said in the discussion of statements in general in Part I, particularly Chapters IV to X, inclusive, is applicable chiefly to the mercantile and manufacturing types. The tendency to speak of the characteristics of this group when speaking generally is due to the wide discussion of statement analysis in banking and mercantile circles, where the mercantile and manufacturing concerns are of greatest interest and so have had the most written about them. Accounting literature very generally stresses these types of business, giving distinctly less attention to the public service and financial types of corporation.

This chapter, then, should be regarded as supplementing the previous general discussion with illustrative material to emphasize some of the special characteristics of "industrial" financial statements and the problems connected with them.

Mercantile and manufacturing characteristics. The characteristics which chiefly distinguish these two groups of businesses from the public service corporations are:

1. *Direct competition.* Much of the competition of steam railroads and generally all of that of the utilities is of the indirect sort, that is, the competition of substitutes. The result of direct competition is to make a business more likely to fail and go the way of liquidation. Profit variations are wider where there is direct competition. The need for considering the factors external to the business in this field which are likely to make for survival requires more attention.

2. *Regulation.* The close regulation accorded the public service companies has ordinarily been absent from competitive business. Such regulation as does occur may arise (*a*) from the special nature of the business, as in the case of the milk business, which involves public health; (*b*) from some regulated activity, like selling securities to the public; or (*c*) from emergency conditions, such as prevail during a war period.

3. *Character of assets.* Whereas the assets of the public service corporation are largely fixed, those of manufacturing tend to average about half current and half fixed, and those of merchandising will be predominantly current if the store locations are leased, and made up of more nearly like amounts of fixed and current assets where locations are owned.

4. *Capital turnover and operating ratio.* Wide variations exist among different types, but manufacturing concerns as a group show lower investment in relation to annual sales than do public service corporations, and merchandising establishments a lower proportionate investment than do either. Higher operating ratios consequently still permit a fair return. Successful manufacturers are likely to show an operating ratio of between 85 and 90 per cent and over, and merchants 90 per cent and over. Exceptions may be readily found, however. Meat packing, which would be classed in the manufacturing group, has a very high capital turnover, and with an operating ratio as high as 95 per cent, will show a very satisfactory return.

An untried promotion. The relatively secondary value of statements in disclosing investment profit possibilities is clearest in the case of the untried promotion just brought to the point of operation. The balance sheet of the Jennings Machine Company illustrates this type of situation. This company owned a newly patented device which had been thoroughly studied and was backed by a group of men of moderate means who wished to see the project capitalized at a modest figure. The patents were acquired for common stock. By selling among persons in the vicinity of their plant, they were able to dispose of their stock on an unusually favorable basis. Aside from the common shares issued to the promoter-capitalist and the inventor, all the stock was sold on a cash basis. Instead of a bonus of common stock with the purchase of a preferred share, the investor was given "the privilege of purchasing a limited amount of common with his preferred." That the business is barely out of the promotion stage is evident from the balance sheet opposite.

To those familiar with the statements of manufacturing enterprises in the promotion stage that are planning to develop an unknown device, this balance sheet is not unusually poor. There is working capital present, and the mortgage is adequately protected. The position of the preferred stock is unsatisfactory in that it is supported to a great extent by intangibles and items which cannot be realized on. The concern is dependent upon

JENNINGS MACHINE COMPANY
December 31, 1941

Assets

Current Assets:		
Cash	$ 18,500.57	
Accounts Receivable	1,601.04	
Materials Inventory	2,549.23	
Total	$ 22,650.84	
Land and Buildings	12,782.40	
Machinery and Equipment	57,596.90	
Deferred Expense	708.84	
Patent Rights	65,149.00	
Development Expense	96,750.57	
Profit and Loss Deficit	24,758.27	
Total		$280,396.82

Liabilities and Capital

Current Liabilities:		
Accounts Payable	$ 3,767.42	
Accrued Expenses	2,000.40	
Total	$ 5,767.82	
Mortgage Payable	12,500.00	
Preferred Stock	200,570.00	
Common Stock (21,606 shares, no par value)	61,559.00	
Total		$280,396.82

the success of its device. If the device is practical and sufficiently protected by the patents, it is possible for the corporation to succeed. An analysis of this aspect is of first importance, and the balance sheet secondary, though helpful.

The last three assets are intangible, and a balance sheet based on tangibles would show:

Current Assets	$22,651	Current Debt	$ 5,768
Plant & Equipment	70,379	Mortgage Payable	12,500
Deferred Expense	709	Net Worth	75,471
	$93,739		$93,739

The profit and loss deficit is a warning signal pointing to the likelihood of the modest working capital being shortly exhausted unless new financial life is injected into the business by the arrival of hoped-for profits.

New corporation in distress. A case similar in type but representing a manufacturer in production is that of a company which may be called the Goldcord Tire Company. This company built a plant and started operations in 1919—a most unfortunate time, coming as it did in a year of high costs and just before the crash of 1920. The comparative balance sheet (given in round figures for the sake of simplicity in reading) indicates the serious trouble met with by this company.

GOLDCORD TIRE COMPANY

COMPARATIVE BALANCE SHEET
As of December 31

Assets and Deficit	1920	1921
Current Assets:		
Cash	$ 2,000	$ 2,000
Liberty Bonds	130,000	105,000
Stock Subscriptions	37,000	16,000
Customers' Receivables	159,000	170,000
Total Cash Assets	$ 328,000	$ 293,000
Finished Goods	126,000	123,000
Goods-in-Process	45,000	36,000
Raw Materials	210,000	99,000
Advances on Material Contracts	125,000	26,000
Total Current Assets	$ 834,000	$ 577,000
Land and Building	391,000	392,000
Machinery and Equipment	277,000	300,000
Prepaid Expenses	57,000	38,000
Intangible Items	1,780,000	1,857,000
Profit and Loss Deficit	123,000	266,000
Total	$3,462,000	$3,430,000
Liabilities and Capital Stock		
Current Debt:		
Notes Payable	$ 368,000	$ 334,000
Accounts Payable	94,000	96,000
Total Current Debt	$ 462,000	$ 430,000
Preferred Stock	1,500,000	1,500,000
Common Stock	1,500,000	1,500,000
Total	$3,462,000	$3,430,000

The statement of the Goldcord Tire Company revealed a lack of working capital and a need for an addition to replenish it. The statement of income, profit, and loss for the period did not lend assurance of any immediate improvement.

GOLDCORD TIRE COMPANY

CONDENSED STATEMENT OF INCOME, PROFIT, AND LOSS
For the Year Ended December 31, 1921

			Per Cent
Sales (net)		$608,000	100.0
Cost of Goods Sold		556,000	91.4
Gross Profit		$ 52,000	8.6
Operating Expenses:			
Selling	$120,000		
Administrative	52,000	172,000	28.3
Net Loss on Trading		$120,000	19.7
Other Income		11,000	1.8
Total		$109,000	17.9
Interest Expense		34,000	5.6
Net Loss for the Year		$143,000	23.5

The fact that the goods were fabricated, while prices were falling, from material that had been to a great extent contracted for some time in advance would explain much of the high cost of goods sold and the low profit margin. More discouraging from the long-run point of view is the small volume of business in comparison with the amount invested. The inventory turnover is also very low. Considering the unfavorable times and the lack of a satisfactory record, the company was relatively fortunate in acquiring the necessary funds through an issue of 8 per cent bonds to fund current debt. Later, the condition of the company failing to improve, a reorganization was forced by bondholders and other creditors, operations finally discontinued, and the business liquidated.

The established business. In contrast with such unproved enterprises is the established concern with a record that shows little change in the character of its properties or operations from year to year. Here statements shed a maximum of light on the possibilities, although sometimes adjustments may be necessary for changes in the capital structure. Thus, the following condensed figures for the United States Steel Corporation show no major changes in the properties owned since the deflation period following World War I. Actually, some expansion of capacity did take place between 1922 and 1929, and some properties were acquired for common stock after 1929, increasing the amount outstanding by about six per cent. The earnings, while fluctuating violently, showed no marked trend during that period. The major changes were in the capital structure, the largest resulting from a 40 per cent common stock dividend in 1927 and an offering of new stock in 1929 by privileged subscriptions whereby stockholders were allowed to purchase one share at $140 for each seven shares held. The proceeds of this stock sale, together with other funds, were used to retire bonds. During the period under review other bonds were retired by sinking funds.

The effect of the bond redemption was to eliminate a fixed charge which in the ensuing depression would have increased the deficits had the bonds been continued in the capital structure. The interest charges on the bonds retired by this operation amounted to over $16,000,000, or almost $2.00 per share on the total common. The elimination of bonds sometimes has the effect of reducing per share profits for the common stockholders by increasing the number of shares outstanding which will participate in the earnings of prosperous years. In this case, how-

UNITED STATES STEEL CORPORATION

CONDENSED CONSOLIDATED BALANCE SHEETS
As of December 31
(Millions of Dollars)

Assets	1933	1929	1922
Fixed Property	$2,431	$2,175	$2,061
Less Depreciation and Depletion	815	670	429
Net Fixed Property	$1,616	$1,505	$1,632
Current Assets	405	562	512
Other Assets	82	219	197
Total	$2,103	$2,286	$2,341
Liabilities			
Current Liabilities	$ 52	$ 121	$ 99
Funded Debt	110	134	571
Reserves and Miscellaneous	72	112	163
Preferred Stock	360	360	360
Common Stock	870	813	508
Surplus	639	746	640
Total	$2,103	$2,286	$2,341

NET INCOME BEFORE INTEREST AND EARNINGS PER SHARE OF COMMON STOCK, AS REPORTED AND ADJUSTED

	Net Before Interest (Thousands)	*Common Earnings Per Share*	
		Reported	*Adjusted*
1933	$ *30,337d*	$ *7.09d*	$ *7.09d*
1932	*65,862d*	*11.17d*	*11.06d*
1931	18,508	*1.48d*	*1.35d*
1930	110,062	9.12	9.16
1929	212,536	21.19	20.93
1928	151,536	12.50	13.92
1927	125,426	8.81	10.92
1926	154,475	17.99	14.26
1925	128,335	12.86	11.25
1924	122,582	11.77	10.59
1923	146,444	16.42	13.34

d = Deficit.

ever, the funded debt was reduced in 1929 by $346,000,000, while only 1,016,000 shares of stock were issued. They were sold at a premium, the price being $140, instead of at the par of $100. The bulk of the funds over and above the $142,000,000 from the sale of stock came from surplus earnings, which were $109,000,000 after dividends in 1929. Further surplus credits arose from tax refunds of $16,000,000 and the elimination of inventory reserves amounting to $47,000,000. Much of this growth in surplus was not reflected in the balance sheet surplus because it was

offset by write-offs in the Property account of $113,000,000. Because of this unusual situation, the issue of about 1,000,000 shares of common stock was all that was required to pay off a huge funded debt. The interest charges alone on this retired debt were equal to more than $16 per share on the new stock sold, and substantial sinking fund charges were also eliminated. These latter charges had been treated in a very unusual manner as the equivalent of depreciation and depletion allowances, being deducted before the net profit for stockholders, the resulting reserve being shown as a valuation reserve for the Fixed Property account.

Where such an important change in capital structure takes place, the record must be re-analyzed in terms of the new capital structure. Sometimes the substitution of a large common stock issue for a low-cost bond issue may lower or "dilute" per share earnings. In this case the reverse occurred. In the last column appear the past earnings as they would have been if adjusted to the changed capital structure. The figures are obtained by taking the earnings for each year before interest and dividends and subtracting the sum of the 1933 interest charges amounting to $5,164,000 and the preferred dividend claim amounting to $25,219,000. The balance is then divided by 8,703,000, the number of common shares outstanding at the end of the last year. The resulting adjusted earnings are more valuable in judging the record in terms of the changed capital structure than are the figures as reported. However, changing economic conditions can alter the significance of the past as in this case. The company showed six deficits for the common in the 1930's, and failed to equal even the 1930 per share earnings until 1941. Moreover, when Federal taxes upon income change as radically as they have in recent years, allowance must be made for such altered rates in interpreting the record of earnings.

The American Agricultural Chemical Company offers another example of an established business in which even greater capital structure changes occurred. They were accompanied by unusual write-downs of the fixed assets, so that the annual allowances for depreciation and depletion shrank greatly. In 1921 a heavy funded debt, amounting to $36,616,000, was present. By reducing working capital, by using all available earnings over interest, and by using the sums provided by depreciation and depletion allowances for debt reduction rather than replacements, this debt was completely retired in the following ten years. The proper-

ties remained substantially unchanged save for a small railroad, the Charlotte Harbor and Northern Railway, which was sold in 1928 to the Seaboard Air Line Railway for about $5,000,000.

Besides the bonds, the capitalization consisted of $28,455,000 of six per cent cumulative preferred and $33,322,000 common stock. The former issue had an unbroken dividend record from 1899 down to April 15, 1921, after which no dividends were paid. As a result of the large accumulation of back dividends on the preferred and the irregularity of earnings, a recapitalization plan was proposed and made operative January 2, 1931. Under this plan, the preferred was exchanged share for share for the common stock of a new corporation organized in Delaware under the same name. The common stockholders received one share of this new stock for each ten shares of their issue. In the new organization, the former preferred held over 89 per cent, and the former common over ten per cent, of the new stock.

If the hopes for the new stock had been measured in terms of the old preferred, for which it roughly stood, the per-share earn-

Years Ending June 30	*Available for Interest* (Thousands)*	*Per Share Old Preferred*	*Per Share of New Common Adjusted for Capital Structure Only*	*Per Share of New Common Adjusted for Capital Structure and Depreciation*
1922	$1,452	*$3.95d*	$ 6.23	$ 9.85
1923	3,031	1.76	13.00	16.91
1924	2,553	.40	10.95	14.96
1925	4,387	7.19	18.81	21.00
1926	3,075	3.59	13.19	15.28
1927	*352d*	*6.76d*	*1.51d*	.48
1928	3,520	7.86	15.09	17.33
1929	1,504	2.47	6.45	8.78
1930	2,229	5.30	9.56	11.61
1931	*216d*	.....	*.89d*	*.56d*
1932	*1,189d*	.....	*5.10d*	*5.06d*
1933	*508d*	.....	*2.18d*	*2.18d*
1934	977	.....	4.19	4.19

* No interest after 1932.
d = Deficit.

ings for that stock would have appeared as shown in the accompanying table. But this comparison ignores the sums formerly spent for interest, which under the new capital structure would be available for dividends, since the last bonds were retired in 1931. Consequently, earnings adjusted to the new capital structure should not be the earnings available for the former preferred

stock, but the net income before interest and dividends. The divisor for these net income figures, consisting of the number of common shares outstanding, was reduced in the spring of 1934 from 315,661 to 233,206 shares by the repurchase of stock by the company at $35 per share. As this amount was less than the net current assets per share, the asset position of the remaining stock was improved. The productive assets being undiminished, the earning power per share was correspondingly increased. The removal of "weakly held" stock from the floating speculative supply presumably improved the technical market position.

A further adjustment of earnings is also desirable. In the fiscal year ending June 30, 1923, the book value of the fixed operating assets, consisting of plant and equipment and phosphate rock mines, was reduced from $48,764,000 to $41,005,000; in 1930, another write-down from $30,791,000 to $7,899,000 was made. After the first write-off, the annual allowance for depreciation and depletion fell from about $1,500,000 to $1,100,000; following the second, to $685,000 in 1931, after which the figure declined yearly until it was only $532,000 in 1934. Since this annual charge depends upon the book value, subsequent earnings reports should show this expense at the reduced figure, and if past earnings are to be made comparable to this situation, they must be increased to appear as they would have been reported had the latest depreciation and depletion practice been in effect then. To make this adjustment, an annual allowance of $600,000 was assumed, and for the years prior to 1932 any excess over that figure was added to the reported earnings.

The earnings adjusted for changes both in capital structure and in depreciation policy are shown in the last column. In order to show the relative importance of the latter adjustment, the per-share earnings for the finally outstanding common are given in the next to the last column as they would have appeared if adjusted only for changed capital structure. The significance of these adjustments can be appreciated from the fact that the average earned per share for the old preferred stock for the years 1922–1930 was $1.98; for the new common during the same years, it would appear as $10.20, making allowance for the changed capital structure, and as $12.91 if a further adjustment were made for depreciation and depletion reduction.

This adjustment of earnings increased the showing most in the earlier years, with the result that the new figures show a

marked downward trend. The fact that income in the period under review depended largely upon the purchasing power of the farmers raising cotton, the price of which suffered during this period, explains the movement. A graphic comparison of cotton prices in the fall months when the crop is being sold and the earnings for the fiscal years ending the following June 30th shows a high correlation. Should the recent tendency of the proportion of chemical products other than fertilizer continue to increase, this marked relation might diminish.

Growing concerns. Concerns which are in the growth period present more difficulties than do the established business, because of changing proportions. It is often hard to judge what the man will be from a study of the growing boy, but tendencies are frequently revealing. Expansion may come from merger with other existing concerns or from within. In the former case, the combined earnings of the predecessor units are studied in relation to the capital securities of the consolidation. Generally, economies are promised by the promoters, but they may prove illusory. A period of adjustment is often necessary to bring the parts into harmonious working order.

When the growth is internal and financed from earnings, stock dividends and split-ups are likely to follow. A simple adjustment of common stock per-share figures for earnings, dividends, book value, and market prices is then customary in order to make them more easily comparable. Thus, in the case of a 100 per cent stock dividend, where two shares take the place of one, all figures prior to the date of the "melon" are divided by 2 so that those prior figures may be interpreted readily in terms of the later number of shares. Such adjustment is not usually made when stock dividends of 10 per cent or less are made in a single year, their effect upon net worth being regarded, for analytical purposes, as similar to that of cash dividends.

In discussing the influence of changing capital structure upon analysis, mention should be made of potential changes which may follow from the existence of convertible bonds or options to purchase common stock of a company. Such privileges are usually exercised by their holders when, and if, the common stock develops increased profits and dividends; and so they may act as a potential source of "dilution," threatening to spread the golden flood over an increased number of shares if it does arrive. If the exercise of these privileges will make any substantial alteration in the capital structure, a study of the possible change is a

necessary part of the analysis of the common stock's possibilities.[1]

But the problem of studying an expanding business goes deeper than making adjustments to render year-to-year figures comparable. The question is one of judging what fruit the growth is likely to bear. Study of the increasing assets and their earnings productivity is helpful, especially when new types of assets such as real estate or outside investments are appearing. Trends in those relationships which bear upon earning power and efficiency should be most helpful when the corporate health is being estimated preparatory to an analysis of the position of specific securities.[2] In a study of the common stock, the ideas suggested in the United States Steel Corporation and American Agricultural Chemical Company illustrations may be helpful. One reason for such study being more useful for industrial than for public service corporations is that growth possibilities in the former field are usually correlated with profit possibilities, and much asset expansion can be, and is, financed from retained earnings—a situation which is less possible in the latter field, where earnings are limited. Industrials also characteristically change their capital structures by using some part of their earnings to reduce any bonds and preferred stocks.

Just as large earnings often make possible the expansion of a business which meets a new economic need, the ensuing growth financed by those earnings is likely to reduce the high rate to an ordinary rate of return as the field of operation is extended to include less and less attractive business. An example of diminishing returns, which also serves as an illustrative study of major financial tendencies suitable as background for security analysis, is found in the chain store figures on page 373 for the years 1920–1929. (Note how extreme cylical fluctuations in business after 1929 made difficult the study and interpretation of data for the ensuing decade.)

The percentages of earnings to net tangible investment showed a persistent downward trend after the initial recovery from the crash of 1920, although the rate of return remained at a generous figure at the end of the period. With a high return being earned,

[1] For a discussion of the method of measuring the dilution for this type of situation, see Guthmann, H. G., "Measuring the Dilution Effect of Convertible Securities," *The Journal of Business of the University of Chicago*, Vol. XI, pp. 44–50 (January, 1938).

[2] A series of unusually interesting industry studies forms the material of Fraser and Doriot's *Analyzing Our Industries* (New York: McGraw-Hill Book Co., 1932).

expansion was a natural consequence, and the substantial amounts actually retained are shown in the table. The proportion retained diminished as the "marginal" investment possibilities appeared less fertile. In the case of the variety chain stores, the reason for the declining return did not appear in either the net earnings margin or the merchandise turnover, both of which were without any marked trend. The falling capital turnover, resulting from a growing fixed asset investment unaccompanied by any increase in the net earnings margin, proved to be the unfavorable element. In the case of the grocery chain stores, the major factor decreasing the earnings productivity of the investment was the declining margin of net earnings, although investment turnover fell some in the last two years.[8]

Studying financial ill health. Since corporation statements representing infancy, growing youth, and established middle age have been examined, a consideration of failing health or old age would seem to follow naturally at this point. The human analogy should not be pursued too closely, however. Business death is not inevitable. The longer a business survives, the more it is regarded as likely to continue. The essentials are (*a*) to avoid financial obligations which may precipitate technical insolvency, (*b*) to continue to meet an "economic" need, and (*c*) to replenish personnel. Sometimes only the first test is made when the label of "unsuccessful" is applied to companies. Inability to meet maturing obligations to creditors is a serious matter, and much of the value of statements is the aid they give in detecting signs of its approach. But many concerns are unsuccessful in the broad sense of the word because they are able to make only trifling profits or may even lose money for a considerable period without becoming insolvent. The two distinct problems should be kept in mind in analysis work.

With respect to the matter of solvency, little need be added to what has already been said in earlier chapters save that sometimes too great concern is shown over the use of bank credit. While short-term bank loans do constitute a hazard if untoward conditions arise, their advantages as a source of relatively cheap

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[8] These tendencies are more apparent in the charts showing the data for the individual companies. Guthmann, Harry G., and Miller, Kenneth E., "Some Financial Tendencies Among Leading Variety and Grocery Chains During the Past Decade," *Harvard Business Review*, January, 1931, pp. 248–254.

For recent data relative to various industries, see: (1) *Moody's Manual of Investments*, "Industrials," section on "Financial and Operating Ratios."

FINANCIAL TENDENCIES AMONG LEADING VARIETY AND GROCERY CHAINS: 1920-1929

A. Averages for Four Variety Chains

	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
Earned on Net Tangible Investment—%†	17.8	19.4	26.5	26.2	22.0	22.6	19.2	20.2	19.1	16.8
Per Cent of Net Earnings Retained		66.4	77.2	80.2	76.5	76.7	62.6	61.1	59.9	47.8
Per Cent of Net Earnings to Sales	5.0	6.1	9.5	10.1	9.1	10.2	9.8	10.1	10.2	9.0
Sales to Inventory*	7.0	8.4	7.2	7.2	7.5	7.7	7.2	8.0	8.1	7.5
Net Tangible Investment Turnover†	3.6	3.1	2.8	2.6	2.4	2.2	1.9	2.0	1.9	1.8
Per Cent of Fixed to Total Assets	41.0	38.4	39.2	45.8	51.5	54.5	56.5	61.1	62.5	67.6

B. Averages for Four Grocery Chains

Earned on Net Tangible Investment—%†	11.4	18.3	25.0	23.7	24.9	20.4	21.3	20.4	17.5	17.4
Per Cent of Net Earnings Retained		68.7	74.5	73.5	73.0	59.2	54.1	58.4	55.6	55.9
Per Cent of Net Earnings to Sales*	1.1	3.1	3.7	3.1	3.5	3.0	2.7	2.8	2.8	2.6
Sales to Inventory	...	...	8.5	9.3	9.4	9.6	10.6	11.2	10.4	12.2
Net Tangible Investment Turnover†	8.2	6.0	6.0	6.4	6.2	6.0	6.5	6.5	6.0	6.0
Per Cent of Fixed to Total Assets	33.0	30.3	33.3	33.8	32.6	32.7	32.8	33.3	37.4	40.8

* Three companies used because of unusual movement of fourth.
† Net tangible investment is the sum of bonds and net worth less intangibles.

funds should be remembered. A large corporation that can sell stock readily may prefer to avoid even moderate hazard. Concerns of small or moderate size are often unable to obtain funds advantageously elsewhere.

Some unsuccessful companies possessed of sufficient liquid resources have been able to avoid insolvency and receivership. The American Woolen Company during the prosperous years of 1924–1929, inclusive, was able to show only deficits in most years. Yet because a substantial part of the deficits came after the deduction of the annual depreciation allowance of about $2,000,000, and because the original working capital was strong, no insolvency followed even when the depression set in. The record of net profits (after depreciation) and working capital during the following difficult decade as shown in the accompanying table is of interest. The falling price level between 1929 and 1932 made it possible to continue operations with fewer dollars of working capital without creating any financial problem. In fact, some dividend was paid on the preferred stock in every year following a year showing a profit. The influence of fluctuating woolen prices upon earnings is readily apparent.

AMERICAN WOOLEN COMPANY

EARNINGS AND WORKING CAPITAL: 1930–1940
(Thousands of Dollars)

Year	*Net Profits*	*Working Capital*	Year	*Net Profits*	*Working Capital*
1930	*4,898d*	52,392	1936	1,930	37,202
1931	*2,837d*	40,769	1937	*1,855d*	33,764
1932	*7,184d*	32,231	1938	*4,912d*	30,222
1933	7,219	39,841	1939	2,312	32,749
1934	*5,458d*	35,052	1940	3,154	34,635
1935	2,741	37,938			

In studying the record of failed or insolvent corporations, a reader might easily attribute the trouble to operating weaknesses without sufficient emphasis on the working capital position. If one confined attention solely to the earnings statements, the receivership of the Studebaker Corporation, which occurred on March 18, 1933, he might attribute the difficulty to the "failure tendencies revealed by an analysis of the earnings." Similar "failure tendencies" might have been discovered in other companies equally well, as is shown by comparing its earnings and net worth with those of Packard Motor Car Company. Actually the sales of the latter company fell more than those of the former,

doubtless owing to a higher average price per car, and its profits reached the deficit stage a year earlier. However, the loss of

	Tangible Net Worth		*Net Profits*	
Year	*Studebaker*	*Packard*	*Studebaker*	*Packard*
1928*	$ 99,177	$60,472	$13,947	$21,885
1929*	100,613	65,584	11,346	25,183
1930	91,430	64,877	1,000	9,034
1931	84,479	55,223	448	*2,909d*
1932	76,633	48,398	*8,355d*	*6,824d*

* Years ended August 31 for Packard.
d = Deficit.

working capital by Packard was not sufficient to bring about technical insolvency, that is, inability to meet maturing obligations.

The Studebaker receivership grew out of legal entanglements arising in connection with a proposed merger with White Motor Company, although the severe contraction in working capital due to the depression played a part. Although the Studebaker Corporation had acquired 95 per cent of the outstanding stock of the White Motor Company, a small dissenting minority blocked the actual merger of assets. This prevented the former company from applying the large liquid resources of the latter company to meet its own pressing obligations, while further borrowing from the banks was restricted by the rigid provisions under which approximately $15,000,000 of the 6 per cent notes were issued. These notes had been issued, and used, together with cash and stock, to acquire the White Motor stock.

The situation was a difficult legal one bringing on insolvency, which probably would not have occurred otherwise, in spite of poor earnings. Working capital was reasonably good in 1929. The current ratio was even higher than for Packard, although the position of the latter was actually somewhat stronger because of a higher proportion of cash and marketable securities.

Importance of current external conditions. When one is inclined to give too little attention to surrounding circumstances, such cases as the following should be brought to mind. The statement of the *X* Company was quite satisfactory. The earnings were good, a little over 11 per cent on the common stock and over seven per cent on total net worth. They were representative of previous performance.

It is only when it is learned that the *X* Company was a brewery that our optimism is changed. After receiving this piece of information, one is not astonished to learn that, shortly after the

X COMPANY

AS OF JUNE 30, 1919

Assets		*Liabilities*	
Cash	$ 614,000	Bills and Accounts Payable	$ 91,000
Accounts Receivable	172,000	Accrued Expenses	106,000
Inventories	718,000	Tax Reserves, etc.	425,000
Bills Receivable, Bonds, and Mortgages	5,062,000	Preferred Stock	6,100,000
Sinking Fund	574,000	Common Stock	5,962,000
Plant and Equipment	16,719,000	Bonded Debt	5,319,000
		Surplus	5,856,000
	$23,859,000		$23,859,000

X COMPANY

CONDENSED INCOME STATEMENT
For the Year Ended June 30, 1919

Total Net Income		$1,650,000
Fixed Charges		319,000
Balance		$1,331,000
Preferred Dividends	$427,000	
Common Dividends	238,000	665,000
Net Surplus		$ 666,000

date of this balance sheet (June 30, 1919), the company suffered a severe change in its fortunes. While such a company might conceivably adjust itself to prohibition, the fact that, at the time this statement was issued, it faced these trials made a vital difference in the interpretation of the report.

In addition to obtaining the story of solvency and operating success or of failure told in the financial statements, the reader, then, will give due weight in the study of mercantile and manufacturing concerns to such externals as (*a*) changing price level, (*b*) cyclical changes in general business, (*c*) labor conditions, and (*d*) political factors. At the present time two most important external influences are unprecedented Federal taxes and the problem of supply created by priorities and allocations of scarce raw materials.

CHAPTER XV

Mining Statements

Mining ventures. A mine is a distinctive type of enterprise, since its life is limited by the amount of mineral content. The operating income, therefore, must, in addition to yielding a satisfactory return on the capital invested, provide a sum sufficient during the life of the enterprise to return the investment sunk in it. The result is that analysis and valuation of mining statements are different from analysis and valuation for the ordinary business, where income provides for the repair and replacement of parts of the property, and the whole is regarded as having an indefinitely long life. Some exceptional corporations operating in this field, notably some of the coal and petroleum companies, have been able to defer the day of extinction by replacing old properties with new.

The circumstances surrounding mining are so peculiar and outside the ordinary course of business that common knowledge is very untrustworthy: it pictures only the extremes—spectacular fortunes, on the one hand, and on the other, a multitude of stock losses by the less fortunate, who are in the great majority. This view is a very unfair picture of one of the great divisions of American business.

In recent years mineral production has fluctuated from $6,981,000,000 in 1920, a year of very high prices, to $2,462,000,000 in 1932. In 1939, the total was $4,874,000,000.[1] Approximately a million workers are employed directly in the extraction of minerals. The major division is fuels, of which the chief are: petroleum, bituminous coal, natural gas, and Pennsylvania anthracite. These constituted 25, 15, 11, and 4 per cent, respectively, of the grand total in 1938. The other nonmetallic minerals, of which stone, sand and gravel, and sulphur are most important, were 15 per cent of the total in the same year. The

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[1] U. S. Department of Interior, Bureau of Mines, *Minerals Yearbook*, 1940.

metallic group amounted to 26 per cent and in the order of their importance (1938) were pig iron, gold, ferro-alloys, copper, zinc, silver, and lead. Gold and silver have been relatively important in recent years as the result of artificially high prices maintained by the Federal government as a part of its monetary policy.

Voskuil has aptly indicated the strategic importance of three minerals to our present economic society, in his statement that "coal, the reducer and energizer, iron the harnesser, and copper the conductor of electrical energy, by combining and co-ordinating their peculiar properties, lay the foundations of human control of the forces of nature in a truly remarkable way." [2] The public discussion of the strategic significance of various raw materials under war conditions has probably done much to make the public aware of the importance of mining in our economic life.

The problem of analyzing mining statements. The problem of the investor who analyzes mining ventures is to estimate as nearly as possible the prospective income of a given property and the length of the period over which this income will be distributed. The problem is one in geology and mining engineering. It is not necessary to be either a geologist or an engineer to appreciate and understand the reports of these specialists, any more than one needs to be an accountant to read financial statements. However, an understanding of the general facts about mining and the problems which surround a special type of mining enterprise is needed to make possible an intelligent reading of the reports of these specialists.

Mining opportunities. Those operating in the field are in a better position to learn of and investigate new opportunities than is the average person. The exploration department of a prominent American company formerly reported the results of its work annually. These reports serve to indicate the comparatively small number of prospects that are deemed meritorious enough to be developed:

Number of Properties	1910	1911	1912
Presented for Consideration	684	921	694
Subjected to a Preliminary Field Examination	124	144	121
Accorded Complete Examination	46	28	36
Properties Acquired	2	1	4

[2] Voskuil, Walter H., *Minerals in Modern Industry* (New York: John Wiley & Sons, 1930), p. 23. This book presents a valuable picture of the industry. A bibliography is given, pp. 338–341.

For the years 1910 to 1915, inclusive, out of 4,338 properties presented for consideration, the great majority received only an office examination. Of 679 which received a preliminary field examination, only 166 were given a complete examination. These two figures represent 16 per cent and 4 per cent of the first figure. Only 16 prospects, or about one-third of one per cent, were actually purchased. About an equal number were taken under option. Although more recent data are lacking, this material illustrates the point that of the many prospects, few have the earmarks of economic success when rigidly scrutinized.[3]

When a new territory is opened, the best locations are owned locally, or controlled by large interests who would, in the case of a prospective development, be likely to take only an option at the most until sufficient exploration had assured them as to the values present. The left-overs usually provide the properties taken up by stock-jobbing concerns to sell to the public on the basis of the reputation of successful developments in the vicinity. Almost every big mining field has this experience. Prior to the advent of the Securities and Exchange Commission, the spectacular performance of the mid-continental and California oil fields and the gold and silver mines in Canada became the basis for many promotions of a fraudulent or at least doubtful economic character.[4] Only the experienced company or capitalist feels able to afford the necessary geologists to examine the ground structure, metallurgists to examine the ore with a view to determining the difficulties of its treatment, and mining engineers to estimate the probable costs of development.

Element of risk. Different kinds of mines represent different degrees of safety. Gold, silver, and lead mines would be grouped in the more speculative class, copper mines would form a middle group, and coal and iron mines would represent a more conservative class with a degree of safety comparable to that found in manufacturing companies.

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[3] An example of an exploration company is found in the General Development Company incorporated in 1906. This company is a parent corporation examining, developing, and financing mining properties, which, when they have reached the self-supporting producing stage, are usually turned over to operating companies.

[4] Edward D. Jones, in *Investment* (New York: Alexander Hamilton Institute, 1919), Chapter 18, gives, among other illustrations, the case of the silver deposits discovered at Cobalt, Ontario, in 1905. In the next few years, the provincial government of Ontario had a record of 491 companies with a total capitalization of $472,396,000. In four years, however, only 15 dividend payers were left, and their total dividends for the year 1908 were $3,646,027

Iron and coal are found in bulky deposits of relatively low value. Before they are mined, there must be an assurance of ore body sufficient to justify extraction. The possibility of a dependable geological survey and the relatively stable demand for such a commodity as coal indicate why a coal property is as predictable as many industrials. Like an industrial, it will be subject to the hazards of fluctuating demand; but on the supply side, the amounts available and the probable production costs will be subject to fairly accurate estimate.[5]

A comparatively small quantity of a more valuable mineral deposit would be equally worth mining. The increased value of the ore in question furnishes the business motive for assuming the greater mining risks which are associated with small and variable veins of ore the supply and character of which it is difficult to estimate in advance.

Petroleum properties are usually classed with mines because of their similarity in the matter of exhaustion. The element of risk varies widely for the different companies in the petroleum industry. A company may own merely an option to buy an unproved tract, or it may have a lease on such acreage. With no financial record on which to proceed, to venture any money in such an enterprise is to gamble on hopes. After wells have begun to produce, some basis for valuation is present, although the period over which they will produce is conjectural. As in some of the Mexican wells, salt water may appear in place of petroleum, cutting their life short. On the other hand, new methods of extraction which will lengthen the expected productive period may be devised. The number of producing wells and the length of time that a given field has been under development will affect the certainty of estimates for future productivity.

The most stable situation exists for the company with a balanced property, owning producing wells, refineries, and means of transportation and marketing, including pipe lines, tank cars, trucking fleets, and filling stations, which reach the ultimate retail consumer. Such a company is a combination of a mining and manufacturing business; and the latter department, consisting of refining and distribution, might continue after the wells

[5] The ills of the coal producers are typified by the receivership of the Consolidation Coal Company in 1932 when interest on its 5 per cent bonds was omitted. Incorporated in 1860, this company was the largest coal property in the world in the extent of its unmined reserves and was the second largest producer of bituminous coal in the United States. Earnings were poor in the years prior to the depression which brought insolvency.

had ceased to operate. The usual course for such a business, however, is to add new producing properties constantly to offset depletion of the old.

Compensating features in competing mines. The prospect of a higher return has been mentioned as affording a compensating factor for the greater risk which attends the exploitation of the more precious minerals. Between different mineral deposits of the same character, compensating factors with respect to geographical location or costs of exploitation may exist.

Frequently, a favorable point is offset by another which is unfavorable. The Kennecott copper ores in Alaska were extraordinarily rich. They were of two grades, one averaging 12 per cent copper and the other a high grade pure chalcocite ore running in the neighborhood of 70 per cent copper.[6] The porphyry copper ores in the western states have a large advantage in transportation and general accessibility as compared with the much richer Katanga deposits in the heart of Africa. In contrast with these rich ores, the Chile Copper Company works a large, low-grade, disseminated deposit which has the advantage of but little covering waste, which makes it possible to mine it with steam shovels on a scale that gives very low mining costs per ton of ore treated.

Classification according to development. Mining companies may be classified on the basis of the kind of mineral extracted. They are also grouped according to the stage of development, which indicates something of the risk and also the type of financial statement material which will be available. Mines may be found: (1) in the development stage and not yet producing; (2) beginning operation; (3) operating and unprofitable; or (4) operating on a profitable basis. In the first two stages, balance sheets may be available, but all estimates of performance will necessarily be based on reports of geologists and engineers. Even after operation, recognition of likely changes may considerably modify the usual significance of past earnings records. In whatever class the property may fall, its valuation must be made independently of the balance sheet, for the asset Mining Property is likely to be valued arbitrariiy in that statement. Before taking up the detailed analysis of the balance sheet and earnings statement, we shall take the general problem of the valuation of a mine.

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[6] *Moody's Manual of Investments—Industrials* (1934), p. 1475.

Mine valuation. The value of a given mineral deposit depends upon the income that can be derived from its extraction and sale. This amount is not dependent on past earnings, nor on the cost of the development work. It depends on four things: (1) the amount of the deposit; (2) the cost of extraction and treatment; (3) the amount for which the product can be sold; and (4) the length of time during which the product will be sold.[7]

Estimating the first two factors requires the best skill of the geologist and the mining engineer. Even the most able may have considerable difficulty in "seeing through the ground," although methods are available for measuring the probable extent of some deposits. The size of the deposit may be determined sometimes by borings, which give samples that may be treated and assayed to reveal the probable value. This work of measurement and valuation will have a more certain character as development progresses. For the outside analyst the problem of valuation is especially complicated in an undeveloped property.

The "probable costs of extraction and treatment" are estimates of unknown accuracy. The determination of production costs is as important as the appraisal of the geological features that govern the occurrence of ore bodies and the matter of tonnage and value of those ore bodies. The location of the property may be unfavorable because of climate, as in the tropics or parts of Alaska, or because of an unstable government likely to be disturbed through revolutions and wars. Transportation is essential for the securing of supplies and for reaching a market for the product. A timber supply may be necessary for underground operation, and water in quantity may be required for ore treatment. Labor must be secured and its productiveness estimated. Frequently, low-priced labor is the most expensive because of its inefficiency. These indeterminate factors show why the established property that can show its record of past performance has an advantage as an investment.

Ore reserves. The probable size of ore reserves, then, is the first problem in appraising the mine. The ore reserves are the deposits estimated present and deemed capable of profitable extraction. When they are said to be "blocked out," at least two sides of the deposit are exposed. "Ore in sight" should be so definitely blocked out that its size and character can hardly be

[7] For a valuable extended treatment of mine valuation, see Herbert C. Hoover's *Principles of Mining* (New York: McGraw-Hill Book Co., 1909), Chaps. I and II.

mistaken. Such an ore body should be measured and sampled on three and possibly four sides. "Probable ore" should mean that development has taken place on at least two sides. The assumption is that the geology of the mine and the territory are sufficiently known so that the probabilities of the estimate's being substantially accurate are very high. An estimate of "possible ore" is likely to be based on very partial development and geological conditions which indicate that the ore will continue for certain distances. Estimates should, of course, include only mineralized tonnage of sufficient richness to justify commercial exploitation. Because terminology is not always exact, the method of arriving at the estimated reserves should be clearly stated. The best type of reports indicate the quantity of ore reserves under two headings, the first including the amount which is actually blocked out and the amount and quality of which is reasonably certain, and the second any further estimate of reserves based on mere judgment of general geological conditions and rough exploration.[8]

The variation in the richness of the largest copper ore reserves may be seen in the following table: [9]

			Tons	*Copper Content (Per Cent)*
*Andes	Dec.,	1924	137,400,000	1.51
†Braden	"	1927	244,000,000	2.19
Calumet and Hecla	"	1925	108,143,000	1.2
*Chile Copper	"	1922	684,259,912	2.12
*Inspiration	Feb.,	1926	96,010,935	1.40
Katanga	Dec.,	1926	85,054,000	6.89
Miami	"	1927	106,609,000	0.94
†Nevada Consolidated	"	1927	277,483,000	1.51
†Utah	"	1927	572,000,000	1.10

* Properties of Anaconda. † Properties of Kennecott.

Difficulties arise in estimating reserves. Two common geological troubles in certain types of deposits are "faulting" and "horses." A vein or stratum of ore is being mined and would, if perfectly formed, extend along in a fairly constant and regular formation. Some disturbance, however, may have pushed the

[8] Illustrations of stated ore reserves for various types of mines may be found in the reports of Anaconda Copper Company, Island Creek Coal Company, Freeport Sulphur Company, Noranda Mines, Ltd. (copper, gold, and silver), and Hollinger Consolidated Gold Mines, Ltd. These companies are reported in convenient form by Standard and Poor's Corporation and Moody's.

[9] Voskuil, *Minerals in Modern Industry* (1930), page 220.

earth up or down at a certain point and produced a fault, or fracture, in which case the vein is broken off. To relocate the vein may be very difficult or impossible. At other times, a fissure containing a valuable vein may, unlike the vein proper, be filled at points with worthless matter; this condition is referred to as a "horse."

Herein lies the advantage of large, easily defined deposits, even though low-grade. A large placer deposit of gold-bearing gravels lying on the surface and lending itself to wholesale methods of treatment might be attractive because of the certainty of the size of the ore reserves in spite of low values per ton. A gold-bearing vein in hard quartz rock might be unattractive because of the difficulty of measuring its extent, even though its value, so far as it showed, was extremely high.

Cost of mining. The ore reserves calculated, the revenues may be roughly stated, provided a satisfactory average sales price can be hit upon. This step still leaves the problem of mining costs, which might be outlined as:

1. Cost of securing control of the mining property.
2. Cost of equipping and developing the mine.
3. Cost of operating the mine when the production stage is reached. Operating costs will include production, transportation, and office or administrative expenses. An allowance for taxes must also be included.

The advantages of the developed mine are that the first two factors are known, and that the last may be judged from past performances. The initial costs mentioned in (1) and (2) represent original investment, and (3) will be the figure which subtracted from the annual revenue gives the net income that justifies the original commitment represented by (1) and (2).[10] The wisdom of making the original investment, or of buying shares after the operations are under way, will depend not only upon the amount of the net income but also upon the time necessary to obtain it.

The time element is vital. If $1,000,000 is invested in a mine and the owner finds himself, after a period, possessed of an exhausted mine and of $2,000,000 in cash, his rate of return will

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[10] It may be stated, as a general rule, that there is never a sufficient amount of the above data available before a mine is actually producing to justify the small or average investor in making an investment.

depend on the length of the period during which the original $1,000,000 was tied up. If the process of doubling has taken 20 years, the investor will have realized 3½ per cent (interest compounding semiannually), and might better have purchased gilt-edged securities which would have accomplished the same result in less time and would, in any case, have incurred far less risk. Could the period of extraction be shortened, the mine would become a correspondingly more attractive purchase. Thus, if the investment were doubled in 12 years, the return would represent 6 per cent compound interest, and if it were doubled in seven years, a return of 10 per cent compound interest.

Problem of present value. For the purpose of illustrating the procedure for obtaining the commercial value of a mine, we shall consider a silver mine with ore reserves about exhausted. The remaining reserves which are blocked out show 750,000 tons. It is estimated that the ore will yield $2 per ton gross, and that the operating expenses will amount to $1.60 per ton. Mined at the rate of 250,000 tons per year, the net recovery will be $100,000 each year for the three years required to strip the mine.

If it is assumed that 10 per cent per annum is a reasonable return, and that the investment as well as interest must be returned during these three years, the problem may be solved as follows:

Let X = the present value of the property, which is to be found.
a = the installment to be set aside at the end of the first year for replacing the depreciation investment.
b = the installment of the second year.
c = the installment of the third year.
Then $X = a + b + c$.

That is, the sums set aside each year, a, b, and c, must equal the original investment when totaled. The dividend received each year consists of two things: (1) the installment for that year, representing return of principal invested; and (2) 10 per cent interest on whatever investment has not been returned. Then, it follows:

The first year, $\$100{,}000 = a + 10$ per cent of X.
The second year, $\$100{,}000 = b + 10$ per cent of $(X - a)$.
The third year, $\$100{,}000 = c + 10$ per cent of $(X - a - b)$.

With these three equations, and the original one ($X = a + b + c$), it is possible to find all of these four unknown quantities, on the general algebraic principle that there must be as many

equations as there are unknown values—in this case X, a, b, and c—in order to make a solution possible. The solution yields: [11]

$$a = \$\ 75{,}131.48$$
$$b = \$\ 82{,}644.63$$
$$c = \$\ 90{,}909.09$$
$$X = \$248{,}685.20$$

Stated in tabular form we have:

	Dividends	=	*10 Per Cent Interest*	+	*Amount Available for Retiring Investment*
First Year	$100,000	=	$24,868.52	+	$ 75,131.48
Second Year	100,000	=	17,355.37	+	82,644.63
Third Year	100,000	=	9,090.91	+	90,909.09
	$300,000	=	$51,314.80	+	$248,685.20

The three equal annual payments of $100,000 have a value of $248,685.20; for, from the $300,000 received, a buyer would be able not only to recover this original outlay, but also to pay himself 10 per cent on the investment while it is tied up. If, then, this mining property had a capitalization of 100,000 shares of stock, the present value of each share could be placed at $2.48.[12]

The virtue of the generalized solution is that it would be equally applicable if the amounts varied from year to year, or even if the amounts received were deficits in certain years. In

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[11] For the reader who wishes to refresh his memory on the solution of simultaneous equations, one possible procedure is given:

(1) $X = a + b + c$
(2) $\$100{,}000 = a + .10X$
(3) $\$100{,}000 = b + .10X - .10a$
(4) $\$100{,}000 = c + .10X - .10a - .10b$
(5) Subtracting (2) from (3), $0 = a - b + 10a$
(6) Rearranging, $b = 1.1a$
(7) Substituting this value in (3), $\$100{,}000 = 1.1a + .10X - .10a$
(8) Similarly in (4), $\$100{,}000 = c + .10X - .10a - .11a$
(9) Subtracting (7) from (8), $0 = c - 1.1a - .11a$
(10) Rearranging, $c = 1.21a$
(11) Substituting (10) and (6) in (1), $X = a + 1.1a + 1.21a$
(12) Or, $X = 3.31a$
(13) Substituting (12) in (2) $\$100{,}000 = a + .331a$
(14) Solving, $a = \$75{,}131.48$

Values for the other unknowns may be obtained by substituting this value for a in (6), (10), and (12).

[12] A similar illustration is given by Floyd Davis in *The Mine Investors Guide*, Chapter III. For those interested in the mathematical theory of the subject and its practical illustrations, reference may be made to Pickering, J. C., *Engineering Analysis of a Mining Share* (New York: McGraw-Hill Book Co., 1917); Finlay, J. R., *The Cost of Mining* (New York: McGraw-Hill Book Co., 3rd ed., 1920); and Hoover, Herbert C., *Principles of Mining*, Chap. V.

most situations where the mine is in actual operation, the assumption is likely to be that the net income will be a certain regular amount for a given number of years. The estimated annual income is likely to be based on the earnings results for the years immediately preceding the time of the estimate, with allowance for possible and probable changes in the near-term future in (*a*) the market price of the product being recovered, (*b*) the costs of operation, and (*c*) changes in the volume of recovery per year. From time to time, changes in the market rate of interest will raise or lower the rate at which expected future profits are discounted. The market value of a mining company's stock, which represents the collective estimate of these several variables, may also change with the passage of time. With new development, the amount of known ore reserves, which determine the life expectancy of the property, frequently increases.

With the assumption that income is to be constant for the expected life of the property, the formula for obtaining the present value of an ordinary annuity is applicable, and a solution can be obtained simply by the use of appropriate tables. An illustration of selected figures from such tables is given below.[18] The number of dollars expected per year is multiplied by the amount shown in such a table for the desired number of years at the desired rate of interest. The table shows that the property discussed above with an annual income of $100,000 for three years would have been valued at $257,710 if an 8 per cent rate had been used rather than 10 per cent, and $272,320 if 5 per cent had been used. The table shows how the amount of value added by each additional year of life grows smaller as the span of years increases. This lesser importance of the later years of income is most marked as the rate of interest increases.

In so far as there may be reserves not blocked out, the valuation for a share of stock is not subject to exact calculation. Because of the past achievements of the management in discovering

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[18] These figures are drawn from the fuller tables given in the *Handbook of Financial Mathematics* (New York: Prentice-Hall, Inc., 1929) by Justin H. Moore, pp. 1100–1109. The formula for the annuity is:

$$A_{\overline{n}|i} = \frac{1-(1+i)^{-n}}{i}.$$

For a discussion of the valuation of annuities consult Chapter 6 and following chapters in this handbook.

	Present Value of $1 per Annum at Compound Interest			
Years	*5%*	*6%*	*7%*	*8%*
1	0.9524	0.9434	0.9346	0.9259
3	2.7232	2.6730	2.6243	2.5771
5	4.3295	4.2124	4.1002	3.9927
10	7.7217	7.3601	7.0236	6.7101
15	10.3797	9.7122	9.1079	8.5595
20	12.4622	11.4699	10.5940	9.8181
30	15.3725	13.7648	12.4090	11.2578
50	18.2559	15.7619	13.8007	12.2335
100	19.8479	16.6175	14.2693	12.4943
Perpetual	20.0000	16.6667	14.2857	12.5000

new reserves, shares may sell on a basis that makes little or no allowance for the exhaustion of the mine. Such shares may, without any market manipulation, show a premium that can be accounted for only on the basis of prospective ore reserves yet to be discovered and blocked out.

Importance of early profits. The relative importance of early returns, particularly when the rate of return sought is high, can best be illustrated by the following table showing the present value of a $10 annual return to be paid for different periods of time. For the sake of vividness the values stated are given to the nearest dollar.

PRESENT VALUE OF A $10 ANNUAL RETURN WHEN INTEREST RATE IS 5, 10, 15, OR 20 PER CENT

Years Paid	*5%*	*10%*	*15%*	*20%*
5	$ 43	$ 38	$34	$30
10	77	61	50	42
15	104	76	58	47
20	125	85	63	49
25	141	91	65	49
30	154	94	66	50
Perpetual	200	100	67	50

The table emphasizes the statement previously made that income in the later years diminishes in importance when the rate is high. Thus, if risk is such that a rate of 15 per cent is demanded, a share earning $10 for five years has a value of $34, while the value would be increased only to $66 if the return were for six times as long, or 30 years.

The importance of considering a part of the dividends as a return of capital has led some companies in declaring dividends to state that they are partly from earnings and partly a return

of capital. The Kennecott Copper Corporation reported such a division of its dividends as follows:

Year	*Dividends*	*From Surplus*	*Capital Distribution*
1932	$0.12½	$0.12½	...
1931	1.50	.30	$1.20
1930	3.75	1.82	1.93*
1929	5.50	5.30	.20
1928	5.25	5.19	.06
1927	5.00	2.15	2.85
1926	4.00	1.97	2.03
1925	3.00	1.07	1.93
1924	3.00	.58	2.42

* The United States Treasury Department ruled that the nontaxable portion of dividend should be $2.47 in 1930.
No part of dividends declared after 1931 was reported as capital distribution.

Such "capital" dividends are based upon the gradual reduction in the assets of the mining company as a result of depletion and depreciation. These sums would be needed in the business if new mines were purchased to take the place of depleted ones and depreciated equipment was replaced. When a return of capital is made to stockholders, the accounting is based upon the cost of the properties to the corporation. The stockholder, however, may have bought his shares for more or less than book value; hence, these capital distributions may be under or over the amount required to write off his investment, even though the total disbursements of this sort are exactly equal to the book value of the company's property.

Furthermore, the stockholder who is interested in the return of his investment on an "actuarial" basis, such as was suggested in the discussion of valuation above, would write off his investment in unequal amounts. In the case of the mine valued at $248,685 he would have used $75,131 of the first year's $100,000 received to write down that value; in the last year, the amount so used would have been $90,909. On the other hand, if the company employed the most common method of depletion write-off, it would have allowed equal amounts in each of the three years because of equal production.

Working capital. Thus far, the problem of mine valuation has held our attention, and we now turn to consider such information as may be gained from a scrutiny of the statements. In a study of the balance sheet, the current asset figures are likely to be more significant than those for the fixed assets, because they present definite values while the valuation of the fixed assets is

of necessity more or less arbitrary, although it may represent historical cash cost. The current value of the fixed assets, however, will vary with changes in estimates of the extent of the ore reserves, the price of the product, and operating costs.

The current assets should include enough to meet current expenses, provide for emergencies, and care for current development. An excessive balance, however, would be undesirable, in that it would not earn an amount commensurate with the yield on invested funds actively employed in this field.

Accounts receivable vary with the type of output, but will tend to be small, since credit is not usually extended by the producers of staple raw materials. When manufacturing and merchandising functions are assumed, as in the case of the petroleum companies and occasionally major concerns in other lines, selling on credit and consequently accounts receivable become more common.

The inventories consist of ores and finished product. Gold, used as standard money, had a fixed price until recently, but other mine products vary widely in price from time to time. Coal and other mineral products of which quantities are sold for domestic consumption will tend toward greater price stability than iron or steel, which are used chiefly in construction. Construction materials, which the economist calls "production" goods, as distinguished from consumption goods, are subject to more violent fluctuations in demand. When known deposits of a mineral are limited and controlled either by a single company or by a few companies which are inclined to maintain prices, an artificial stability may be achieved.[14] Volume may suffer as a result, and often the indirect competition of substitutes threatens

coveries, is employed by Climax Molybdenum Company. The fixed assets showed an increase in the Discovered Increment in the mine value from $3,692,390 to $74,131,250 in accordance with a survey as of January 1, 1935 and approved by the stockholders. Following the fixed assets stated at cost less depreciation and depletion, there appears (1939):

Add—Discovered Increment at Appraised Value ..	$74,131.250	
Less—Accumulated Depletion	10,303,451	63,827,799

This item is counterbalanced by one after the Surplus account which reads:

Add—Discovered Increment Surplus, per contra ... $63,827,799.

This case is a special example of surplus arising from revaluation. Depletion on this item, unlike other depletion, is excluded from operations and charged directly to the Discovered Increment Surplus.

Properties are not always secured by outright purchase. They may be leased, or an option to purchase may be taken. Such contracts are frequently made by the promoters of "wildcat" companies and then placed in the balance sheet at a handsome figure. Leaseholds are not likely to appear at a high value in the balance sheet of an older and established company. The actual worth in either case is, of course, independent of the accounting and will depend solely upon the possibility of profits.

Mining equipment and development. Mining equipment and the cost of bringing the property to a productive stage should be stated under a second heading, although they are often lumped together with the cost of acquiring the mines. There is a temptation to treat replacements as improvements, adding them to the asset and so inflating this item. The changes in this asset should be traced from year to year. If new equipment has been added, it should be remembered that old equipment may have been retired and should in that case have been written off.

The following statement of principle, covering this point, was adopted by the Council of the Institution of Mining and Metallurgy on December 20, 1910, as a part of a report submitted by the Mine Accounts and Cost Sheets Committee.[17]

After the Producing Stage is Reached, no expenditure should be charged to Capital account (that is, the Asset account) except large special items, such as (1) purchase of additional property; (2) erection of additional buildings,

[17] Report given in *Mines Accounting and Management,* by L. R. Dicksee (London: Gee & Company, 1914), p. 79.

machinery, plant, or surface works which may be necessary either to increase output, to improve recovery, or to decrease costs. Such items of capital expenditure should bear their proportion of the administration and general charges. If any existing shafts, machinery, plant, or buildings should be entirely superseded and replaced, the cost of the old items should be written off Capital to Profit and Loss either at once (if small) or in the case of large items by installments spread over as short a period as the responsible engineer may recommend. All repairs, maintenance, and replacements of minor machinery and plant should be charged to Working Costs.

In recognition of this principle, the balance sheet should set forth the development as a separate account. The balance sheet of the Kennecott Copper Corporation showed, on December 31, 1940:

Mining Property, Railroads, Steamships, Plant and Equipment	$313,827,282
Less Reserve for Depreciation	104,429,606
Net Property Account	$209,397,676
Stripping and Mine Development, etc.	29,529,708

The amount of development work is often stated in the annual report and may be studied in connection with the asset. Development costs are, in effect, deferred charges to be written off as rapidly as that portion of the mine is exploited.[18]

Deferred charges. Many mineral deposits are situated comparatively near the surface. The Chile Copper Company's deposits were previously mentioned as of this character. The phosphate rock, such as is mined for making fertilizer by the International Agricultural Corporation, is found in this position. In such cases, the cost of stripping off the overburden, which corresponds to development, may be carried as a deferred charge until the underlying deposit is removed. When that is done, the item is charged to the cost of the product.

Valuation reserves. Reserves for depreciation and for depletion are sometimes found on the liability side offsetting the fixed operating assets, but a growing tendency among large companies appears to be to show them as asset deductions so that their nature is clearer to the average reader. Practice in the setting

[18] Until recent years, most large petroleum companies followed the ultra-conservative policy of charging "intangible development costs," mostly drilling expenses, to current operating expenses. The prevailing procedure is to set these up as assets to be amortized over the useful life of any wells discovered. For a discussion, see Braunthal, Alfred, "Are Oil Earnings Reports Fictitious?" *Barron's*, March 8, 1937, p. 11.

up of these valuation reserves varies considerably. Some companies show extremely high allowances although their reports indicate considerable unmined ore reserves; others show but nominal allowances. In the matter of clarity, similar differences exist. Some balance sheets give helpful details, such as showing asset values for mines and plant and equipment separately. Depreciation and depletion allowances and reserves should be, and in the best reports are, shown apart.

Cerro de Pasco Copper Corporation showed at the end of 1940 a reserve for depreciation and depletion of $91,004,027, or 86 per cent of the total properties of $105,923,434. Granby Consolidated Mining, Smelting & Power Company, Ltd., in 1940 showed a depletion reserve of 81 per cent for its mines, mineral and timber lands at $2,064,248, and depreciation of 48 per cent for its real estate, buildings, plant, and equipment at $4,800,440. Noranda Mines, Ltd., in 1940 showed only a reserve for depreciation, which was equal, however, to 85 per cent of the $14,-152,946 total for fixed properties. An examination of the detailed figures shows that mines property was a relatively nominal part of the total, being carried at a cost of but $919,779, or only about 6 per cent of the total. Inspiration Consolidated Copper Company had a substantial investment in mines, mining claims, and lands amounting to $17,523,814, but showed no depletion allowances, although a reserve for depreciation of 51 per cent had been accumulated against its $21,924,373 of buildings and equipment.

It was suggested earlier that the possibly arbitrary and historical character of the asset, Mines, resulted in its having small significance for the analyst. The wide variations in the accounting for both the asset and depletion shown by these illustrative cases offer another reason for attempting a valuation independent of the balance sheet figures.

The heavy income and excess profits taxes of the Federal Government initiated during World War I led many companies to set up valuation reserves for the first time. Some pursued the policy of allowing as large amounts as would be permitted by the taxing authorities. This practice reduced current taxable income, but may prove to have been ultraconservative, at least in some cases, and expose the company to correspondingly higher taxes in later years. Immediate and certain savings are regarded as worth considerably more than those which lie in the future and are uncertain.

Miscellaneous asset accounts. Other nonoperating assets are usually small or absent in mining companies. Because of the exhaustible character of the property, a rapid retirement of any outstanding securities, other than the common stock, is regarded as sound practice. Such repurchased holdings may be carried as treasury securities rather than deducted from the capitalization on the liability side.

"Profit and Loss" or "Deficit" may appear on this side of the balance sheet. Either of these is useful only in calculating the book value of the stock, and, as was previously stated, the book value of mining stock is not regarded as significant as in other types of business. The presence of this account may be due to the return of a part of invested capital, as will be explained later in the case of the Goldfield Consolidated Mines Company. Such a practice is permissible for mining companies.

Capitalization. A funded, or bonded, debt is occasionally founded on the liability side. Because of the variability of profits in mining, it is not a usual means of securing funds. A series of unfavorable circumstances might make impossible the payment of the fixed interest charges. In such a case, the stockholders would stand the chance of losing their property. Only the most stable mining enterprises should try to seek capital in this manner, and then only in comparatively small amounts. A few of the large copper and coal companies with well-established mineral reserves have used bonds to meet emergencies or acquire desirable properties. Bonds are common among the larger petroleum companies. The customary form of security issued by mining companies, however, is common stock.

Illustrative balance sheet. The condensed comparative balance sheet of the Island Creek Coal Company illustrates the qualities of a strong mining company in a field which has suffered from keen competition. The small amount of receivables and the insignificant inventories are characteristic of most mining enterprises. As a result of natural advantages and efficient operation, the company has the lowest costs of any of the major producers in the bituminous industry. By lowering dividends, it continued the working capital in a strong position through the depression years following 1929. The United States Government obligations in 1935 amounted to more than one-fourth of the book value of the assets and represented an unusual accumulation for a mining company. Such strong cash resources would permit the company to acquire properties on a favorable basis

should that appear desirable. The working capital was so strong in both years that all of the preferred stock could have been retired at its call price of $120 without difficulty.

ISLAND CREEK COAL COMPANY

COMPARATIVE CONSOLIDATED BALANCE SHEET
As of December 31
(Thousands of Dollars)

Assets	1940	1935
Cash	4,140	1,002
U. S. Government Securities (par)	....	5,500
Accounts and Notes Receivable (net)	2,168	1,670
Inventories	906	618
Total Current Assets	*7,214*	*8,790*
Invest. in Carnegie Dock & Fuel Co.	1,060	....
Investments and Other Assets	*83*	*26*
Property, Plant and Equipment	25,720	21,014
Less Deprec., Deplet., & Amort. Reserves	13,004	10,445
Net Property Account	12,716	10,570
Deferred Charges	176	105
Total Assets	21,250	19,492
Liabilities		
Accounts and Drafts Payable	534	361
Accrued Payroll, Taxes, Interest, etc.	207	191
Reserve for Federal Income Taxes	889	164
Dividends Payable	38	38
Total Current Liabilities	1,668	754
Funded Debt	300	....
Deferred Income	35	....
Reserve for Insurance and Contingencies	411	372
Workmen's Compensation Reserves	66	....
Minority Interest in Subsidiary	8	....
$6 Cum. Preferred Stock (par $1)	25	25
Common Stock (par $1)	594	594
Paid-in Surplus	11,125	11,125
Earned Surplus	7,018	6,621
Total Liabilities	21,250	19,492

A study of the unmined coal reserves and the earnings in recent normal years indicates that the fixed assets are carried at values substantially less than going current values. This conclusion is supported by the record of market prices paid for the stock prior to the depression years. Should the net income move to a different level, a new analysis and valuation of the property would have to be made. Whenever a substantial surplus of free working capital in the form of marketable securities is present, as in this case, the analyst estimates its value apart from the mining

properties. He arrives at a total by combining the result with the estimated valuation of mines, rather than by capitalizing all income from both operating and nonoperating sources to obtain a lump value, which would be very inaccurate. Such a method would in this case have involved capitalizing income from Government obligations and from a coal mine in a single computation.

Income account. The Income account is usually very condensed. The gross sales, the operating expenses, depreciation, and amortization or depletion should be stated separately in even the most condensed report. The operating expenses will consist of labor, salaries, supplies, and the like spent to obtain and *market the product. Allowances for depreciation and depletion* have already been touched upon in the preceding discussion of *reserves. Depletion allowances, while reducing the net profit for* the period, need not reduce the dividend: they merely serve to indicate that a portion of the dividend is a return of capital. Such a portion might properly be called a liquidating dividend, and the balance would represent profit.

Some few managements pursue what might be called a practical equivalent. They charge the cost of discovering new deposits and a large part of development costs to expense, instead of showing them as additions to the assets. Such a practice might serve to maintain or even increase the original worth of the corporation's shares. A clear statement would show separately the amounts spent for development work. The better type of annual report often gives considerable information on work of this sort.[19]

Depreciation for those equipment or plant units which will not require replacement because they are serviceable for the life of the mine occupies a position similar to depletion. Allowances for depreciation reduce net income but not the sums available for distribution to the stockholders, unless certain units will require replacement before the life of the mine expires.

In studying the Income account, the conservative practice is to regard the net income after depreciation but before depletion as representing the balance available for either distribution or the acquisition of new properties, on the theory that the extent

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[19] In years prior to 1932, Hollinger Consolidated Gold Mines, Ltd., reported upon development work by stating the number of feet of new shafts, drifts, cross cuts, raises, diamond drilling, and timbering of shafts and stopes. The company reports each year the gross value of its ore reserves, which in recent years have been more than twice the book value of its mining properties and plant.

to which depreciating assets will require replacement is unknown to the reader. When information is available to show the approximate amount of depreciation attributed to assets that will continue serviceable for the life of the mine, such sums can be regarded in the same light as depletion in estimating what the security holders may recover from the operations. A peculiarity of depreciation practice in mining is that the plant investment usually has only scrap value after the mine is exhausted, and so it must be written off over the life of the mine rather than over the normal service life whenever the former period is shorter than the latter.

This description of the character of depletion and depreciation does not justify the suggestion sometimes made that dividends may be paid out of the reserve accumulated to allow for their accrual. If the valuation reserve were reduced by dividends representing a return of capital to the stockholder, it would amount to writing up the book value of the fixed property, which should decline with the exhaustion of the mineral deposit. If capital instead of earned surplus is being distributed, the proper account to reduce is Capital Stock, or an offsetting account, Capital Distributions, may be set up on the asset side. Such an account would resemble the valuation reserve. The excess of Capital Stock over Capital Distributions would represent the unreturned balance of the stockholders' investment.

The Income account of the mining company differs chiefly from that of the ordinary manufacturer in the presence of depletion and the similarity between depreciation and depletion in the former. Because the larger oil companies have pursued a policy of replacing plant and crude oil reserves, they are different from the usual concern operating a mineral deposit with a relatively limited life expectancy. The depletion, depreciation, obsolescence, and development expenses are all deducted in judging earning power, in spite of the indication of concealed income in the large total of these charges for some companies.[20]

Undistributable earnings. After a careful analysis of the operations, it is well to make allowances on the general principle that all realized profits do not reach the dividend stage. One

[20] For a study of the charges and the probable effects of adjustments on per-share earnings of 14 leading oil companies, which controlled 70 per cent of the proved crude petroleum reserves and refinery capacity in the United States, see "Scaling Down Oil Company Depreciation Reserves," by Lawrence Beech, *Barron's*, January 16, 1933, p. 20.

engineer estimates that from 20 to 30 per cent will be absorbed "by more or less standard charges and by the ordinary vicissitudes of mining." [21] It is well to study the profit and loss statement in close connection with the balance sheet. The latter will indicate whether the undivided earnings were used as working capital or were tied up in fixed assets. If an unduly large percentage is withheld and apparently used in adding to the fixed assets, it should be discovered whether these "additions and improvements" are genuine capital increases or merely items that should have been treated as current expenses.

Unit costs. It is customary to figure the income and the operating costs on a per-ton-of-ore basis, and such per-ton figures are useful in connection with the problem of mine valuation discussed in the early part of this chapter. Per-ton costs can be checked against similar figures of the same company in other years. Fluctuating prices, such as have been seen in recent years, have made such comparisons from year to year of little value in measuring relative efficiency. Both income and expenses have shown unexpected rises and falls. The costs per ton of a company should not, however, increase out of proportion to the value of the recovered product. If they do, the weakness which may be increasing development costs or decreasing recoveries should be sought.

Satisfactory comparisons between different mines cannot be made on a per-ton basis. Low-grade ore must of necessity show relatively low per-ton costs as compared with richer deposits in order to offset the lower value of the per-ton recovery. Consequently, mines with a like mineral are more appropriately compared on the basis of the cost per unit of product. If a mine produces at a relatively high cost per unit, it will suffer the more from any decline in the price of its product.

Unit costs will vary from year to year, being chiefly affected by (*a*) the movement of the general price level, (*b*) changes in the character of the mineral deposit, and (*c*) the flexibility of costs as the volume of production varies. As general prices move up or down, the cost of supplies will tend to move in the same direction, as will the important labor costs, although the movement of the latter is much more laggard. The mineral deposit may become more difficult to extract as development progresses, although sometimes it becomes richer or improvements are made

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[21] Pickering, J. C., *Engineering Analysis of a Mining Share*, p. 49.

in the method of mining or the process of ore treatment so as to reduce costs. The fewer fixed expenses, such as maintenance or pumping costs, the more likely are total expenses to be adjusted satisfactorily to a reduced volume of output in a depression period. Thus, the properties of the Kennecott Copper Company located in the United States are worked by open-pit or caving mining methods, which give flexible operations as well as low costs. Although the output of its Utah property was only 69,463,000 pounds of copper in 1933, as compared with 296,625,000 pounds in 1929, production costs, including all charges except Federal taxes and depletion, were 6.45 cents per pound in 1933, or slightly less than in 1929.[22]

Another helpful way of thinking of the cost is as a per cent of the selling price, or as the operating ratio, used so frequently in other fields. In mining also, it shows how well a decline in the price of the output can be borne. A mine with an operating ratio of 80 per cent loses half its net when prices decline 10 per cent, assuming constant costs; with a ratio of 70 per cent, the loss is but one-third. The statement that the company with a lower operating ratio suffers less from price declines is the equivalent of the rule that the high-cost producer suffers most from lowering prices.

The lack of uniformity in stating costs per unit of output makes many comparisons valueless. Since depletion charges are unstandardized and represent the writing down of mine valuations, which are themselves of an arbitrary nature, they should be eliminated from cost. Income taxes, interest, and, possibly, depreciation, should be omitted from costs. While there are possible objections, it would seem best to credit operating costs with the value of minor metals recovered, such as the silver in some copper mines, and lead and zinc in some gold mines.[23] Adopting such a uniform basis, the analyst can often work out per-unit costs from the statements.

A waning mine. The figures for the Goldfield Consolidated Mines Company illustrate the conditions of a mine undergoing the rapid loss of profitable ore. The table on page 402 shows

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[22] Standard Statistics Company, annual report card for 1934.

[23] The weakness of this treatment is seen whenever the by-product becomes of substantial value. Thus, in recent years, International Nickel Company of Canada, Ltd., owner of the world's largest nickel-copper deposit, has produced from a pound and one-half to two pounds of copper for each pound of nickel. In spite of the higher price of nickel, copper is more truly a joint product than a by-product.

how the development work was pushed for a considerable time after the decline began. The investor, however, was warned first in 1911, when, although the net earnings per share were actually greater than for the preceding year, the per-ton figure showed a serious reduction in the value of the recovered product. The net earnings per share in 1911 were $2.07 as compared with $2.01 in the preceding year, and dividends were paid at the same rate as formerly. The per-ton recovery, however, dropped back from $38.50 to $30.74, a decline of 20 per cent. The condition is somewhat obscured by the reduction which took place in per-ton costs. The operating costs as a whole were actually somewhat lower than for the preceding year's smaller tonnage. The initial reaction continued in 1912, when the per-ton recovery slumped to $18.40.

The figures given cover practically the whole productive life of the Goldfield Company, that is, from the completion of the 100-stamp mill with a capacity of 650 tons per day on December 26, 1908, through the year 1917. In 1914 the company acquired another smaller property, the Aurora Consolidated Mines Company, which, however, was unsuccessful.

The surrender to conditions is marked by the action reported in the following statement:

> It was found, early in 1919, that it was not advisable to continue the operation of the property on company account, mainly for the reasons that the production of ore, not only from the company operations, but also from lessees, was continually declining, with consequent prohibitive increase in the operating cost; and the value of the ore produced was gradually decreasing, resulting in material loss each month.

Accordingly, on January 31, 1919, all mining operations were discontinued. A lease was granted shortly to the Goldfield Development Company, but this was surrendered at the end of the following year, as "it was apparent that the property had been developed so far as resources would permit."

Dividends from capital. The general balance sheet of the Goldfield Consolidated Mines Company on December 31, 1913, was somewhat unusual. Reference to the Mine Properties shows that account written down to $9,297,161. The footnote states that $22,205,485 had been deducted as representing the exhaustion of ore deposits to date. Unfortunately for the correctness of the balance sheet, this account was largely restored in 1915, and the account at the foot of the asset column, Dis-

GOLDFIELD CONSOLIDATED MINES COMPANY

STATISTICAL SURVEY OF OPERATIONS

For the Years 1909–1917

(000's omitted)

Year Ending	Development Work in Feet	Tons Treated and Shipped	Value Recovered	Average per Ton Recovered	Total Costs	Average per Ton Total Costs	Net Operating Realization	Average per Ton Net Op. Real.	Earned per Share	Dividends Paid
Oct. 31, 1909	40,668	194,479	$ 6,752	$34.72	$ 1,726	$ 8.88	$ 5,027	$25.84	$1.31	$ 3,201,239
" 1910	43,236	266,867	10,274	38.50	2,926	10.97	7,348	27.53	2.01	7,118,271
" 1911	46,739	330,549	10,163	30.74	2,636	7.97	7,527	22.77	2.07	7,118,296
Dec. 31, 1912 (14 mo.)	48,146	415,786	7,652	18.40	2,766	6.65	4,886	11.75	1.33	5,694,637
" 1913	38,696	349,465	4,943	14.14	2,211	6.32	2,732	7.82	0.42	2,491,403
" 1914	30,028	338,192	3,926	11.61	2,091	6.19	1,835	5.42	0.29	1,067,744
" 1915	34,603	390,054	3,516	9.01	1,957	5.02	1,558	3 99	0.23	1,601,617
" 1916	29,024	338,680	2,211	6.53	1,755	5.18	456	1.34	Nil	None
" 1917	16,477	250,550	1,763	7.04	1,507	6.01	256	1.03	Nil	None
Totals or Averages ...	.....	2,874,622	$51,200	$17.81	$19,575	$ 6.81	$31,625	$10.97	....	$28,293,207

tributed as Dividends, was removed by charging it against the surplus which resulted from the restoration.

The Distributed as Dividends account represented in effect a deficit account created by the return of a part of the stockholders' capital through dividends. It might properly have been labeled with the title "Capital Returned through Dividends," offsetting the Capital Stock as the Reserve for Depletion offsets the Property account. While such an account title is unusual, it nevertheless represents the facts better than "Deficit" does, which ordinarily is associated with unprofitable operations—which is not necessarily the case with a mine. Where the operation of returning the capital is completed successfully, this special account would finally equal and offset the Capital Stock liability opposite, at least by the time the property was exhausted.

The profit and loss surplus designated in the balance sheet as "Net Amount Realized from Operation" is unreal, as is demonstrated by the inability of the company to make a sufficient amount during the remainder of its existence to write off the balance of the Mine Properties.

THE GOLDFIELD CONSOLIDATED MINES COMPANY

GENERAL BALANCE SHEET
December 31, 1913

Assets		*Liabilities*	
Mine Properties*	$ 9,297,161	Capital Stock	$35,591,480
Organization Expenses	4,079,970	Reserves:	
Buildings, Equipment, etc.	121,074	Income Tax	12,499
Securities Owned	836,026	Bullion Tax	7,269
Unexpired Insurance	351	Accounts Payable	88,019
Accounts Receivable	112,506	Net Amount Realized	
Supplies	37,622	from Operation†	5,499,104
Cash	383,192		
Distributed as Dividends	26,330,471		
	$41,198,371		$41,198,371

* Mine properties, $31,502,646; less amount computed as representing exhaustion of ore deposits to date $22,205,485. Balance, $9,297,161.
† Net amount realized from operations, $27,704,589; less amount computed as representing exhaustion of ore deposits to date, $22,205,485. Balance, $5,499,104.

Whenever it was the intention of the management to have made a portion of the dividends "payable from earnings," those dividends might properly have been deducted from this account, Net Amount Realized from Operations. In view of the fact that the total of all dividends was less than the capitalization, the dividends must be regarded as wholly a return of capital—at least from the standpoint of the company's accounts. For the in-

vestor, the dividends would, of course, constitute income, instead of return of capital, if they had exceeded the cost of the stock to him.

Investors' dependence on management. There are certain methods which may be employed to increase temporarily the showing of profits, to the ultimate detriment of the mine, which must be kept in mind in the study of the earnings statement. J. C. Pickering, a mining engineer, mentions the following: [24]

1. Selective mining. A mine might be skimmed by extracting only the richest and most accessible deposits. This would make a good temporary showing, but might prevent the profitable treatment of the remaining ore reserves.
2. Reduced development.
3. Employment of unsuitable mining methods, such as failure properly to timber the shafts.
4. Inadequate maintenance of equipment.

Some of the above might be discovered by a close analysis of the financial reports. It is clear, however, that against an unscrupulous management, the outsider is practically helpless. A designing management has been known to manipulate earnings up and down for the effect on the market price of the shares. It is highly important that those who have charge of the venture be worthy of the investor's confidence.

Under the difficult conditions of 1921, some of the largest copper companies which were not forced to close down practiced selective mining, which, however, was *plainly published.* The following comparison of the production of the Kennecott properties in 1920 and 1921 plainly sets forth the neglect of the poorer property. Had the details not been set forth, the higher percentage of assay, 5.20 per cent in 1921 as compared with 4.18 per cent in 1920, should have been suggestive.

KENNECOTT COPPER COMPANY

	1921		1920	
	Dry Tons	*Assay**	*Dry Tons*	*Assay**
At Kennecott	229,809	7.66	223,009	9.04
At Latouche	168,058	1.83	451,463	1.77
Total	397,867	5.20	674,472	4.175

* Per cent of copper.

Special considerations in analysis. It will be seen that the financial report can be useful in valuing the mining securities,

[24] Pickering, J. C., *Engineering Analysis of a Mining Share,* pp. 49 and 50.

especially when supplemented by data on probable ore reserves and factors likely to affect future prices of products and costs. Considerable reliance upon the integrity and ability of the management is required. The records of both managers and technicians should be sought, for past associations, while not proof in this connection, usually constitute strong evidence. Something of their policies and attitude in the matter of dividend disbursements and development work may also be learned.

The person studying mining ventures should always keep in mind the distinctive nature of the enterprise—exhaustible assets and high risk. The peculiarities of mining have made luck seem important, and the losses of the unskilled have undoubtedly exceeded the gains they have made, for consistent profits can be obtained only through skillful analysis. There must also be a spread of investments to insure any safety. The need for diversification is one reason why the very small investor is not likely to invest in this field to advantage. The chief reason is, however, that it would cost the small investor the same amount of money and effort that it would a larger investor to get the same safety. It is improbable that the extra return earned on a small sum will justify the cost of a satisfactory study.

CHAPTER XVI

Bank Statements

Commercial banks. Banks are one of the three major classes of financial corporations chosen for study here. Banking institutions perform various functions. Some, known as investment bankers, are security merchants and have as their principal function the purchase of corporate and other securities which are resold to investors. Of more general interest are our commercial banks, which receive deposits and make loans. It is this type of bank and the Federal Reserve banks which will be considered here.

The commercial bank receives funds that individuals and concerns wish to be able to use as cash on demand. Such deposits, subject to checking, constitute the most important source of the funds held by the commercial banks. Time deposits, upon which interest is usually paid, are also large. Savings banks specialize in the latter type of deposit and are largely mutual institutions.

Bank reports. National banks are required to report their condition to the Comptroller of the Currency at various times during the year. The call for this report is made on dates chosen by the Comptroller, and the banks are informed as to the date a few days after that date has passed. The law requires that the bank publish the substance of this report in at least one newspaper, and the Comptroller publishes various compilations from the detailed reports submitted to him. In addition to the reports published by the individual bank as required by law, *Moody's Manual of Investments* is a convenient source of statement material—usually in a condensed form—for particular institutions.

State banks and trust companies operate under state instead of Federal law, and accordingly are required to report to the states' supervising officials. Requirements vary in the different

states. In New York state, reports of a very detailed nature are called for four times during the year. The Comptroller of the Currency and the state officials co-operate in calling for statements at the end of June and of December each year, so that combined statistics for both national and state institutions may be had as of that date. Since all national banks and most of the large state banks are members of the Federal Reserve system, the figures published in the Annual Reports of the Board of Governors provide information about the bulk of both the state and the national systems combined, as well as for the Federal Reserve banks.

Liability classification. Since the investment of the funds of a bank is determined by the nature of the liabilities, they will be considered first. A study of the relation of the assets to the liabilities will follow.

The main classes of liability items are:

1. The capital stock, surplus, and undivided profits representing the investment of the stockholder, the first being permanent investment, the last subject to possible reduction through dividend payments or unusual losses, and the second having characteristics partly like capital and partly like the undivided profits, since it may represent either capital investment or accumulated earnings.

ASSETS AND LIABILITIES OF NATIONAL BANKS AS OF JUNE 30[1]

(Millions of Dollars)

Assets

	1934	1940
Loans and Discounts, Including Overdrafts	$ 7,698	$ 9,179
U. S. Government Securities, Direct Obligations	5,646	7,220
Obligations Guaranteed by U. S. Government	358	1,891
Obligations of States and Political Subdivisions	1,228	1,928
Other Bonds, Notes, and Debentures	1,885	1,648
Corporate Stocks, Including Stock of Federal Reserve Banks	232	217
Total Loans and Investments	$17,047	$22,085
Cash, Balances with Other Banks, and Cash Items in Process of Collection	5,733	13,877
Bank Premises, Furniture, and Fixtures	656	597
Real Estate Other Than Bank Premises	152	120
Other Assets Indirectly Representing Real Estate	b	65
Customers' Liability on Acceptances Outstanding	129	42
Interest, and Other Income Accrued	c	59
Other Assets	185	40
Total	$23,902	$36,885

[1] *Annual Reports of the Comptroller of Currency.*

Liabilities	1934	1940
Demand Deposits	$ 8,042	$15,977
Time Deposits	6,076	7,876
Deposits of U. S. Government (including Postal Savings)	1,330	565
Deposits of State and Political Subdivisions	1,499	2,271
Deposits of Banks	2,986	6,084
Other Deposits (certified and cashiers' checks, etc.)		302
Total Deposits	$19,933	$33,074
Bills Payable, Rediscounts, and Other Liabilities for Borrowed Money	16	3
Mortgages or Other Liens on Bank Premises and Other Real Estate	c	0.1
Acceptances Executed by or for Account of Reporting Banks and Outstanding	140	51
Interest and Other Unearned Income	c	41
Interest and Other Expenses Accrued	42	50
Other Liabilities	773d	189
Total Liabilities	$20,901	$33,409
Capital Accounts		
Capital Stock	1,738	1,535
Surplus	854	1,250
Undivided Profits	257	468
Reserves	152	224
Total Capital Accounts	$ 3,001	$ 3,476
Total Liabilities and Capital Accounts	$23,902	$36,885
Number of Banks	5,422a	5,170

[a] Licensed banks operating on unrestricted basis.
[b] Included in Loans and Investments.
[c] Not shown separately.
[d] Includes circulating bank notes outstanding—$698.

2. Obligations, chiefly deposits, which must be met on demand.

3. Obligations, largely deposits, which the bank need not meet for more than 30 days.

4. Borrowings of the bank.

5. Liability for letters of credit and acceptances, usually counterbalanced by an equal asset of claims against customers.

The combined statements of all national banks, which follow, serve to illustrate both the various kinds of items which appear in the balance sheet and some of the proportions which are likely to prevail.

Stockholders' interest. The net worth, or capital, accounts are ordinarily found under four headings: Capital Stock, Surplus, Undivided Profits, and Reserves. Profits appear first in the Undivided Profits account, and when it is thought wise to set aside some portion in such a manner that the stockholders will no

longer regard them as distributable in the form of dividends, they are transferred to Surplus, which is regarded as permanent capital. Surplus is used, however, to meet unusual losses, and the directors may transfer it back to Undivided Profits, except to the extent that surplus accumulation is required by law. The figures for all national banks show surplus to be nearly as important as stock as a source of funds, and for some individual banks it is much more so. Since in the case of national banks and of many state institutions, loans to any one borrower are limited to a percentage of capital stock and surplus, the extent of the bank's accommodation is gradually increased through the growth of surplus.

Reserves have become more common in recent years to meet various contingencies and so make it unnecessary to charge special losses against surplus. Often these reserves are set up out of nonrecurring types of income, such as profits from the sale or redemption of bonds.

The net worth, or excess of assets over liabilities, serves as a margin of safety to depositors. Some states, feeling the need for keeping this margin of protection up to a certain point, have passed legislation requiring that a bank shall not accept deposits in excess of a certain number of times its capital stock and surplus, such as ten.[2] If deposits are ten times the capital and surplus, and if the loans and investments are approximately equal to the deposits, then a loss of over 10 per cent of these earning assets would wipe out the margin of protection to the depositors. This relation of deposits to net worth is the rough equivalent of the debt-to-net-worth ratio so often used in all kinds of balance sheet analysis. The ignored liabilities are the bills payable representing bank borrowing, and miscellaneous liabilities, which are usually of minor importance. If these should become of first-rate importance, a fairer basis of interbank comparisons would include all liabilities rather than deposits alone. The ordinary importance of the lesser liabilities

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[2] For historical material and discussion, see Robinson, Roland, "Capital-Deposit Ratio in Bank Supervision," *Journal of Political Economy*, February, 1941. pp. 41–58.

Laws requiring a minimum capital stock or the accumulation of a certain surplus in relation to the capital stock fail to meet the need for establishing a safety margin *in relation to deposits*. The former requirement might prevent uneconomically small banks were not the minimum stock under both state and Federal laws so low as to be doubtful value.

can be seen more clearly from the following condensed statement of the national bank figures given in percentage form:

CONDENSED PERCENTAGE STATEMENT OF CONDITION FOR ALL NATIONAL BANKS
AS OF JUNE 30

Assets	1940	1934
Cash and Due from Banks	37.6%	24.0%
U. S. Government Obligations	24.7	25.1
Other Securities	10.3	14.0
Loans and Discounts	24.9	32.2
Real Estate	2.1	3.4
Miscellaneous Assets	0.4	1.3
Total	100.0%	100.0%
Liabilities		
Deposits:		
Demand	67.0%	54.6%
Time	22.7	28.8
Bills Payable and Rediscounts	...	...
Other Liabilities	0.9	4.0
Capital Stock	4.2	7.3
Surplus, Undivided Profits, and Reserves	5.2	5.3
Total	100.0%	100.0%

The ratio of deposits to net worth for all national banks was 6.6 to one in 1934 and 9.5 to one in 1940. During the 1920's this ratio ran about 6. Since the need for a protecting net worth lies in the possibility of asset shrinkage, the higher proportion of cash and short-term Government obligations in recent years has reduced the need by so much. When a bank carries high reserves and pursues an unusually liquid investment policy, as is necessary for a metropolitan bank serving other banks as well as a commercial clientele, a high ratio of deposits to net worth is permissible.[3]

When the banks were examined after the banking moratorium in 1933 so that their ability to reopen for business with safety to the public might be determined, some were found to have impaired their capital or lost so much surplus as to show a subnormal margin of net worth in relation to deposits. Through the Reconstruction Finance Corporation, the Federal Govern-

[3] A study of national bank failures for the period 1920–1932 showed the rate of failure highest among small banks, namely, those associated with depressed agriculture, in all but the last years, when "failure among all sizes of banks and in about the same proportion" was found. An important suggestion of this article is that the net worth of banks is perhaps lower in relation to liabilities than it should be for sound banking. (Pickett, Ralph R., "The Size of Failed National Banks," *Journal of Business*, January, 1934, p. 33.)

ment extended aid by purchasing preferred stock.[4] This departure from the conventional method of financing banks was prevented in some states by laws prohibiting more than a single class of stock. In order to meet this difficulty, income debentures were used instead of preferred stock but they were subordinate to other liabilities although prior to the regular stockholders' claim.

Demand and time liabilities. The liabilities are almost entirely deposits. In most published statements, except where the form of publication is prescribed by law, there is but a single heading, "Deposits."

In detailed reports, however, there will be listed the following amounts, against which liabilities the bank is required to keep a reserve, after certain deductions, which will be considered later, are made from the asset side:

Demand Deposits:
- Individuals, partnerships, and corporations
- United States Government
- States and political subdivisions
- Banks in the United States
- Banks in foreign countries

Time Deposits (payable after 30 days or more notice):
- Individuals, partnerships, and corporations
  - Savings
  - Certificates of deposit
- Postal Savings (including time deposits by U. S. Treasury)
- States and political subdivisions
- Banks in United States
- Banks in foreign countries

Demand deposits may on occasion also include certified and officers' checks, cash letters of credit, travelers' checks, and dividends payable. Time deposits may include Christmas savings accounts and deposits accumulated for the payment of personal loans.

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[4] Between 1933 and 1940 the Reconstruction Finance Corporation made loans on and purchases of $575,000,000 of preferred stock of national banks. In the latter year, $227,000,000 remained outstanding. *Annual Report of the Comptroller of Currency, 1940,* p. 326. In reading balance sheets, it must be remembered that this item may be stated at less than its retirable value, which is par plus accumulated dividends.

Of these items classed as "Deposits" in the condensed balance sheet, there are three which ordinarily will be the most important. They are:

1. Demand deposits, subject to check, from ordinary customers. (Such accounts are called "Individual" by the banker, whether they are with individual persons or with corporations, in distinction from accounts with other banks.)
2. Time deposits, which are usually interest-bearing and not subject to check, from ordinary customers.
3. Amounts due to banks and bankers.

In an active city bank, the demand deposits of its customers will be the most important source of loanable funds. In a village bank or a city bank that caters to savings accounts, the time deposits might be larger. The deposits are important to the banker as the source of most of his loanable funds, and their growth is studied as one of the criteria of a bank's success.

Amounts due to banks and bankers are likely to be large only in the case of metropolitan banks that hold the "reserve" deposits of other banks under the state law. The depositing bank regards its balance carried with other banks as a part of its cash, which it holds in reserve to meet the demands of its depositors. National banks are permitted to count only deposits made with the Federal Reserve banks as their *legal* reserve, the minimum for which is specified in the banking law. As a practical matter, however, national banks also regard "amounts due from other banks" as available for cash purposes in the same manner as the balance carried with the Reserve Bank.

When a person with a deposit to make does not wish to open a bank account, he may be given a certificate of deposit payable on demand. Such a certificate might be purchased for the purpose of sending a remittance through the mails. Again, a time certificate may be used as an interest-bearing deposit payable after some stipulated interval, such as six months.

When the bank certifies a customer's check, it charges his account, and the check becomes a liability of the bank until it is paid. Cashier's checks are checks issued by the bank itself, sometimes in payment of its own bills, sometimes to customers who prefer this instrument to the certified check in making a remittance by mail.

Accrued liabilities. The accruals are of minor importance, although useful, since they indicate accurate accounting and so

a more exact statement of profits. There will usually be found a reserve for taxes and accrued expenses, and an item for accrued interest liability. This interest liability is owing chiefly to depositors, who are credited semiannually or monthly. A third account will show the "unearned discounts," representing deferred income. Thus, if a bank has discounted a $2,000 60-day note at 6 per cent on June 15, the discount of $20 would be but one-fourth earned on June 30. On the latter date, the bank's statement should include $15 as its liability to customers for unearned discounts.[5]

Circulation of national banks. National banks were until 1935 permitted to issue bank notes, which were used as currency. Such notes were fully secured by a deposit of United States bonds and a redemption fund with the United States Treasurer at Washington.[6] The apparent advantage of the privilege lay in the fact that the bank could invest in interest-bearing bonds and then issue notes which took the place of the cash invested. The actual profits were small because of the low yield from the bonds which could be so used and because of taxes and expenses involved.

Bank borrowings. Banks may obtain additional funds by borrowing from other commercial banks, or, if members of the Federal Reserve system, from their Federal Reserve bank. This may be done either on their own note or by rediscounting some of the notes from their own portfolio. Where the bank's own note is employed, the liability "Bills Payable" will appear, and

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[5] The reports of resources and liabilities of national banks called for by the Comptroller of Currency have since 1920 omitted the asset, "Interest Earned but not Collected," and the liability, "Interest and Discount Collected but not Earned."

[6] These and all other pledged assets, as well as any secured liabilities, should be clearly stated, although the reader is supposed to know of the secured status of national bank notes and of deposits made by the Federal Government, both on its own account and for Postal Savings.

An example of clear statement is given in the following figures as reported by the First National Bank of Cincinnati in the *Chicago Journal of Commerce*, July 9, 1934. The only important type of pledged asset not illustrated is that for borrowings by the reporting bank.

Pledged against:

Circulation of notes outstanding	$ 699,200
U. S. Government and postal savings deposits	3,016,000
Public funds of states and political subdivisions	2,160,000
Deposits of trust departments	790,000
With state authority to qualify for the exercise of fiduciary powers	100,000
Total (about 10% of assets)	$6,765,200

the borrowing bank will usually pledge some of its assets as collateral.

Although the liability of the bank is only contingent when the bank rediscounts the notes of its customers, the amount is always shown among the other liabilities, as:

Notes Rediscounted at Federal Reserve Bank .....$

Consequently, the rediscounted notes still appear under the loans and discounts, and the net amount in the bank's portfolio would be obtained by finding the difference. Similarly, when acceptances are sold with an indorsement, so that a contingent liability exists, this responsibility appears among the liabilities offsetting the sold acceptances, which continue as an asset. Upon maturity, the contingent asset and contingent liability both disappear.

A third form of borrowing is the "sale with agreement to repurchase." In this case, the bank needing funds makes itself liable to repurchase the securities it is selling in order to realize cash, and the liability for "Agreements to Repurchase Securities Sold" is placed next to "Bills Payable and Rediscounts." The actual securities continue in the balance sheet as an asset, but, like the rediscounted notes, are offset by a counterbalancing liability.

When banks borrow. Ordinarily, banks avoid borrowing, except when located in small communities where the available capital is insufficient to meet the needs of business. Thus, in agricultural communities where extra funds are needed at the crop-moving season, some banks borrow with seasonal regularity. In such a case, the bank with limited capital and deposits is able to serve the community as it should only by borrowing from the larger city banks.

The larger banks and city banks in general avoid borrowing except when acute financial conditions make it imperative, and then they bend every effort toward repayment. This general policy has led some banks to emphasize their freedom from borrowing by entering the "Rediscounts and Bills Payable" title among their liabilities with a prominent "None" after it. However, banks and the business community should be careful not to cast reflections upon bank borrowing that will result in banks' unduly avoiding the use of this resource. A bank which fails to use its reserve of borrowing power in a crisis when its sound customers need the help is failing to render the service it should.

While no rule exists, it is generally felt that borrowing of banks should be limited to an amount equal to their capital stock and surplus.

Letters of credit. Travelers' letters of credit and travelers' checks are sold for cash, and the bank becomes liable for the sum. Such a letter is similar in effect to a certificate of deposit, and is an ordinary liability. The great bulk of letters of credit, however, are commercial letters of credit, which are merely authorizations permitting the creditors of the bank's customers to draw drafts on the bank under certain conditions. Thus, an exporter of coffee in Brazil draws a 90-day draft on the bank of a New York importer. Since this has been authorized under a commercial letter of credit, the Brazilian is assured of the acceptance and the final payment of his draft. The New York bank accepts the draft, thereby creating what is known as a "banker's acceptance." It is understood that shortly before the draft comes due, the importer will provide the funds for the payment. The bank, if it has not misjudged the ability of the importer, has earned a commission by letting its customer make use of its credit.

The contingent liability for commercial letters of credit issued but *not used or drawn against,* or for a similar credit opened for the customer with a foreign bank but *not used,* is omitted from the face of the statement. The item is entered only after the draft has been actually accepted by the bank. Travelers' letters when issued not for cash but under a guaranty or deposit of security are similarly treated, that is, entered only when drawn against.

After the acceptance of a draft, the assumption of the liability for the customer is shown as Acceptances. The bank has not advanced any funds, and it expects to be placed in funds by the customer before it is called upon to meet the claim. The liability is counterbalanced by the equal liability of the customer to provide funds for the payment of the acceptances at maturity, the latter being shown on the asset side. If the liability item exceeds the asset item, as is sometimes the case, the excess indicates that the customer has anticipated payment and liquidated his liability. Sometimes the accepting bank purchases its own acceptances in advance of maturity. Such a policy is illustrated in the statement of the National City Bank of New York, which showed the following net liability on September 30, 1941:

Liability on Acceptances and Bills	$13,710,226.44	
Less: Own Acceptances in Portfolio	5,482,878.21	$8,227,348.23

Accountability in trusteeship. While the responsibility of the trustee is an accountability rather than a liability, it is appropriate to mention the matter at this point before we pass to the discussion of the assets. A number of state banking institutions and some national banks exercise trust company functions, but it is not customary for them to show the amount of their responsibility in their statements, although it would be of interest to know the relation of that figure to the bank's net worth. The Comptroller of Currency reported that national banks with fiduciary powers held $9,345,419,682 in trust assets on June 30, 1940.[7] Assets left with an institution to be administered as a trust fund are not the property of that institution; nor does the institution render any of its general assets liable to seizure by the beneficiaries of the trust, so long as the terms of the trust are faithfully carried out, and the general laws governing trustees are kept.

Since the bank has a financial responsibility for the proper administration of trust assets, their total should appear in connection with the balance sheet. This principle explains the value of stating the total amount held in trust, as illustrated by the statement (December 31, 1940) of the National Trust Company, Ltd., a Canadian company which does no commercial banking. The liability side of the balance sheet shows little save net worth, as follows:

Capital Stock	$3,000,000
Reserve Fund	1,750,000
Profit and Loss	485,405
Total	$5,235,405

But further responsibility for trust funds is stated as:

Guaranteed Trust Accounts	$ 22,588,959
Estates, Trusts, and Agency Accounts	274,939,287

These funds would be balanced by investments and cash held for the beneficiaries of the several trusts.

Order of assets. Report forms used in state and federal supervision call for the assets in a particular order and detail, but it is becoming customary in statements published in the press to condense the items and arrange them in the order of their liquidity. Before analyzing the relative merits of the various

[7] *Annual Report of the Comptroller of the Currency, 1940,* p. 23.

forms of investment and the proper proportion for the various assets, a brief explanation of the various items in the order of their liquidity will be made.

Cash and cash items. The cash may be subdivided according to whether it is in some of the various forms of coin or in some of those of paper currency. In the class of items that serve the same purpose as cash are the balances carried with the Federal Reserve Bank and with other banks and bankers. There are also items which are in the course of collection, such as "checks on other banks," "exchanges for the clearing house," and the like. While it has been stated that such of these items as are not cash serve as cash, there are certain distinctions which are drawn later in the discussion of reserves.

United States obligations. Because of their high-grade character and ready marketability, United States Government securities might rank next as a cash resource. Actually, long-term bonds are subject to considerable fluctuation as a result of changes in market interest rates. Thus, if net yield rates change from 3 to 4 per cent, a 20-year 3 per cent Government bond would drop from 100 to 86.32, or 13.7 per cent. Consequently, a bank seeking market price stability would purchase short maturities, say of three years or under, which fluctuate least in price when interest rates change. For this purpose, Treasury bills and certificates, which are limited to one year as their maximum duration, are especially desirable. Treasury notes and bonds are also satisfactory when they approach their maturity, or have been called for payment at some near date, or are likely to be called because of a high coupon rate and a favorable market. The desirability of short maturities is particularly evident in times of subnormal interest rates. At such times, the risk of rising rates and declining bond prices leads to a scramble for short maturities that pushes their yield very low. This low return is regarded as preferable to the higher return on longer maturities because the latter is coupled with the risk of market decline. An adequate bank balance sheet would segregate short-term issues from long-term bonds.

Loans and discounts. "Loans and Discounts" is the title given to the loans made to the general public. They are ordinarily for a relatively short period, usually averaging less than three months. The most important items in ordinary times are loans made to the bank's own customers: commercial and industrial, in large urban centers; agricultural, in farm country.

These are typically unsecured promissory notes signed only by the borrower (single-name paper) and based on his financial standing. Such paper may on occasion be two-name, where the borrower discounts notes or drafts from his customers or has obtained an accommodation indorsement; it may be secured by evidences of title to merchandise, such as warehouse receipts. Collateral loans may represent business or personal needs but are most likely to be to brokers for financing security transactions. Loans on real estate have increased in relative importance as the volume of commercial and industrial lending shrank during the 1930's. Other types of loan, such as bank acceptances and loans to banks, are ordinarily small.

A classification and percentage analysis, on page 419, of the loans and discounts of all banks insured with the Federal Deposit Insurance Corporation illustrates common characteristics and differences for commercial banks of various size.

This table shows the relative importance of the various classes of loans. It reflects the greater relative importance of farm loans and mortgages for the smaller banks; of commercial loans, purchased (open-market) commercial paper, collateral loans, and residential and other mortgages, for the larger banks. Bank acceptances are most common in those cities engaging in foreign trade, and to a less extent in the financing of large-scale domestic commerce.

The need for liquidity explains why the real estate loan has generally been regarded as unsuited for the commercial bank. Until 1927, national banks were not permitted to make such loans. Under the present law, loans upon improved property are permitted up to 50 per cent of the value for not over five years, or up to 60 per cent for ten years if installment repayments are made to retire 40 per cent or more of the loan by maturity. Larger loans for longer periods are permitted if covered by Federal Housing Administration insurance. The total loans of this class are limited, however, to not more than the bank's capital and surplus, or 60 per cent of its time deposits.

The commercial bank will invest its funds, so far as possible, in the paper of its own customers—first, because it normally yields the higher rate of return, and second, because the banker owes it to the community from which he derives his deposits and capital to aid in its growth in so far as sound banking principles permit. The limitations upon this policy are discussed below in connection with the subject of reserves and "secondary" reserves.

AVERAGE PER BANK OF LOANS AND DISCOUNTS OF OPERATING INSURED COMMERCIAL BANKS*

DECEMBER 31, 1940

	Banks with deposits of					
	$100,000 to $250,000		$1,000,000 to $2,000,000		$10,000,000 to $50,000,000	
Number of banks	1,672		845		62	
	Amount	*Per Cent*	*Amount*	*Per Cent*	*Amount*	*Per Cent*
Type of loan:						
Commercial and industrial loans	$10,061	4.7	$106,009	6.6	$1,116,048	.1
Agricultural loans (excluding loans on farm land)	42,136	19.7	79,910	5.0	25,694	4.9
Commercial paper bought in open market	393	.2	8,766	.5	188,661	.8
Notes, bills, acceptances, etc., payable in foreign countries	8	...	.....	...	.....	...
Acceptances of other banks, payable in the United States	6	...	28	...	274	...
Reporting banks' own acceptances	7	...	91	...	3,839	...
Loans to brokers and dealers in securities	17	...	710	.1	109,000	.5
Other loans for the purpose of purchasing or carrying securities	342	.2	11,676	.7	348,452	1.5
Real estate loans:						
On farm land	14,153	6.6	58,256	3.6	115,032	.5
On residential properties	8,141	3.8	158,952	9.9	2,047,565	8.9
On other properties	2,258	1.1	40,289	2.5	758,645	3.3
Loans to banks	53	...	97	...	597	...
All other loans	21,541	10.1	172,996	10.8	2,781,322	12.1
Overdrafts	86	...	223	...	2,452	...
Total loans, discounts, and overdrafts	99,202	46.5	638,003	39.9	7,497,581	32.7
Total assets	$213,414	100.0	$1,599,203	100.0	$22,943,177	100.0

* *Annual Report of the Federal Deposit Insurance Corporation, 1940*, p. 156. See original table for banks of other sizes.

Investment in securities. It is clear that these loans and discounts, save for the real estate loans, should, if properly made, be of a comparatively liquid nature, and would through their maturity provide funds in a relatively short time in case of need. Investments, which ordinarily are understood to consist entirely of bonds, are also frequently spoken of as liquid, but liquid in a different sense. Cash may be realized on them, not because of their short maturity, but through their salability. A sale may, however, involve loss. This disadvantage has been keenly felt by some banks that, in dull periods, have invested in bonds only to find in an ensuing period of business activity that they were obliged either to take a loss on these investments or to forego possibilities of taking profitable commercial loans. For this reason, it is more accurate to say that these holdings are marketable, rather than liquid, save for that portion of the holdings which because of short maturity and high quality possesses price stability.

The more conservative practice is to carry bonds at cost or market, whichever is lower. Since 1938, however, member banks of the Federal Reserve system have been permitted to carry bonds of investment quality at cost even though market is lower.[8] The need for liquidity suggests the desirability for a "cost or market, whichever is lower" rule of valuation. The situation differs from the more permanent investment position of the savings bank and the life insurance company, which disregard market fluctuations so long as the bond is good.[9] The regular amortization of premium or discount (i.e. writing off a fraction of the same each year) is a regular part of the accounting for these latter institutions.[10]

The high proportion of United States obligations shown in the following table of national bank investments began during the

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[8] The purchase of other bonds is prohibited. Bonds which lose their rating after purchase are valued at the average market price for the eighteen months just preceding examination and 50 per cent of net depreciation deducted in computing net sound capital. Total depreciation is treated as a loss for securities in default and stocks. A somewhat similar rule was invoked temporarily in 1931, when the Comptroller of Currency ordered that national banks should be permitted to carry Government, state and municipal, and other bonds of the four highest ratings (e.g., Moody's—Aaa, Aa, A, and Baa) at their book value and disregard market fluctuations.

[9] See below, pages 453–454.

[10] Commercial banks are, however, required to amortize bond premiums unless they charge them off at the time of purchase.

first World War, when the banks purchased large blocks of Liberty Bonds, but took on new impetus with the deficit-financing of the 1930's. The issues with short maturity are especially suitable.

The remainder of the list is diversified but of relatively small importance. Both civil and corporate bond holdings are likely to be of high quality after the unhappy experiences of the banks with inferior bonds in the early 1930's. The stock of Federal Reserve banks is a compulsory investment for national and other member banks. Other stock investments are forbidden save as they represent collateral taken over on secured loans in default.[11] Such holdings must be disposed of promptly.

The following is a table of investments held by all national banks:

INVESTMENTS OF NATIONAL BANKS*

AS OF JUNE 30
(Millions of Dollars)

	1940		1930	
	Amount	*%*	*Amount*	*%*
U. S. Government Obligations	$ 7,220	55.9	$2,754	40.0
Govt. Guaranteed Obligations	1,891	14.7	....	...
Federal Agencies—not Guaranteed	262	2.0	....	...
State & Municipal Bonds	1,928	14.9	896	13.0
Railroad Bonds	485	3.8	661	9.6
Public Utility Bonds	346	2.7	784	11.4
Industrial Bonds	353	2.7	....	...
Other Bonds	84	0.7	1,053	15.3
Foreign Bonds	118	0.9	528	7.7
Federal Reserve Bank and Other Stocks	217	1.7	212	3.0
Foreign Stocks	1	...	....	...
Total Investments	$12,905	100.0	$6,888	100.0

* *Annual Reports of the Comptroller of Currency, 1930, 1940.*

Return from loans and investments. Although the individual banks do not publish details of earnings, combined figures for national banks are reported by the Comptroller of Currency, from which the accompanying figures have been computed to show the earnings from loans and discounts and from investments for the period 1929–1940. The return on loans and discounts is gen-

[11] Minor exceptions are made for the stock of (*a*) corporations conducting a safe deposit business, (*b*) banks engaged in international or foreign banking, and (*c*) national agricultural credit associations.

erally higher than the return on bonds. Loans and discounts often have the further advantage of bringing the bank profitable deposit balances, but they require greater care and expense in their management. The low return on investments, which are very largely bonds, is due to the heavy proportion of United States obligations, which increased considerably after 1930 and showed much lower yields after 1929.

GROSS AND NET RETURN ON LOANS AND INVESTMENTS OF ALL NATIONAL BANKS*

1929–1940
(Percentages)

Years ended Dec. 31	*Loans and Discounts*				*Investments*				
	Interest	*Losses*	*Recoveries*	*Balance*	*Int. & Divds.*	*Profits*	*Losses*	*Recoveries*	*Balance*
1929	6.13	.62	.11	5.62	4.52	.57	0.94	.13	4.28
1930	5.63	.92	.11	4.82	4.56	.60	1.05	.10	4.21
1931	5.18	1.62	.13	3.69	4.15	.58	2.47	.13	2.39
1932	5.34	2.49	.17	3.02	4.07	.53	2.51	(a)	2.09
1933	4.78	3.56	.22	1.44	3.60	.67	3.23	(a)	1.04
1934	4.68	3.85	.41	1.24	3.39	1.29	2.23	(a)	2.45
1935	4.58	2.15	.64	3.07	2.91	1.66	1.07	(a)	3.50
1936	4.49	2.00	.90	3.39	2.70	1.31	.76	1.00	4.25
1937	4.35	.84	.58	4.09	2.65	.56	.76	.28	2.73
1938	4.39	.94	.38	3.83	2.55	.82	.96	.28	2.69
1939	4.47	.77	.46	4.16	2.37	1.00	.87	.27	2.77
1940	4.41	.63	.39	4.17	2.18	.81	.83	.31	2.47

(a) Recoveries and profit not reported separately.
* Compiled from *Annual Reports of Comptroller of Currency* and *Federal Reserve Bulletin*, May, 1941. Based on average asset figures for all call dates.

Real estate. The banking house with its furniture and fixtures may be listed as such, or as real estate. It is not usual for a bank to hold other real estate. In fact, national banks are not permitted to hold other real estate, except as it happens to be acquired in the satisfaction of some debt they are collecting. Even then they are required to dispose of such real estate within five years. This requirement is based on sound principle, in that it aims to keep bank assets in a readily convertible form. The item "Other Real Estate" generally increases during a period of business depression if any substantial holdings of real estate mortgages are present.

The valuation of the real estate should be studied over a series of years. Occasionally a bank writes this asset down year by year by excessive amounts, so that in some cases it stands at a nominal value. Some argue that this hidden "reserve" is doubly

desirable. First, it is pointed out that a banking house is a specialized structure that would have little use except for the purpose in hand and that is not likely to be worth cost in case of liquidation; and second, that in the face of some special emergency, such as a defalcation, this asset might be increased once more on the books, thereby offsetting the loss and preventing the wiping out of surplus. Since such a writing down of real estate is arbitrary, it can be detected only by a careful examination year by year, and should be watched, since it will understate the undivided profits on the opposite side of the statement.

Reserves and deposits. The term "reserve" is used in banking in a sense entirely different from that in which it has been used up to this point in our text. It has a meaning for the banker which is closely akin to that of popular usage, and is applied to certain of the assets. The actual reserve of a bank is the cash which it keeps on hand, together with its balances in other banks, and it is used to meet the day-to-day demand of its customers either as withdrawals are made over the counter or through the presentation of checks by other banks. Under the amended Federal Reserve Act, banks that are members of the Federal Reserve system are required to keep an amount equal to a certain per cent of their deposits on deposit with the Reserve bank, which balance is known as the *legal reserve.* The various states, in prescribing the minimum reserve for banks incorporated under the state law, include, in their definition of reserve, cash in vaults and balances kept with certain specified banks designated as legal depositories.

Reserves clearly may vary in amount according to the character of the deposits. Larger reserves for demand deposits than for time deposits are essential for safety. Again, in large cities, where depositors' balances are likely to vary the most in size, the need will be greater than in a smaller place with less active accounts of more uniform size. An exceptionally small bank comes to mind at this point. Its statement showed a reserve that would have appeared high for a large metropolitan institution. Inquiry developed the fact that this bank held a very large deposit from the state, against which it was necessary to hold an almost 100 per cent reserve. The receivership of another bank of substantial size was precipitated during a period of difficulty because of the decision of municipal authorities to withdraw large deposits. The legal reserve requirements may under different conditions, then, be more or less than adequate for safe banking.

The minimum ratios of legal reserves to deposits required under the Federal Reserve system are currently as follows: [12]

	Percentage Demand Deposits	*Percentage Time Deposits*
Central Reserve City Banks (New York and Chicago)	26	6
Reserve City Banks (includes banks of about 60 cities)	20	6
Country Banks	14	6

The combined national bank statements, given above, show *total* reserves of 28.8 per cent (5,733 ÷ 19,933) against all deposits in 1934, and 42.0 per cent in 1940. *Legal* reserves would consist only of balances on deposit with Federal Reserve banks, and to find the legal reserve ratio they would be compared with *net* deposits, that is, after subtracting cash items in the course of collection, technically known as "float."

"Secondary" reserves. The second line of defense consists of loans and discounts and bonds which may be turned into cash whenever necessary upon short notice.[13] Loans and discounts which would fall within this classification are:

1. Stock market loans which are subject to call.
2. Commercial paper or other paper (such as notes secured by United States obligations) which is eligible for rediscount.
3. Bankers' acceptances.

It was the ready convertibility of the stock market call loan which before the passage of the Federal Reserve Act gave it an unequaled popularity with the large metropolitan banks.

Since the passage of the Banking Act of 1935, the Federal Reserve banks have been permitted to make advances upon almost any type of bank asset: long maturity loans, real estate loans, civil and corporate bonds, collateral loans, and installment paper. This broadened power is particularly useful in an emergency. The commercial banker will feel greater assurance, however, in seeking Reserve bank accommodation when he presents short-term commercial and agricultural paper, the

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[12] Reserve requirements for demand deposits in suburban banks located in reserve and central reserve cities may be lowered with the consent of five members of the Board of Governors.

[13] A statistical presentation of "secondary" reserves in relation to deposits for national banks in the central reserve, reserve, and country groups from 1923 to 1933 is made by George W. Edwards in "Liquidity and Solvency of National Banks," *Journal of Business*, April, 1934, pp. 161–172.

normal repayment of which will liquidate his own obligation. Such paper is favored by the Federal Reserve banks with a lower rediscount rate and is the most satisfactory, and certainly "eligible." It is a most satisfactory substitute for the stock market or call loan, and when it consists of loans to customers, it offers a higher rate of return, save in periods of unusual financial stress and high money rates. The conservatively managed bank will try to have a fair proportion of its loans of this sort, and in case such paper is not to be had from the regular customers of the bank, it may purchase the offerings of a commercial paper house. The commercial paper house acts as a merchant of commercial paper selling the short-term, single-name paper of concerns with a high credit standing without indorsement to banks throughout the country. Such purchased, or open-market, paper characteristically pays less than direct loans to customers of the bank and brings no profitable deposit balances with it.

Marketable bonds to the extent of their market value are also a valuable support to cash. Previous comments as to the need for high quality and short maturity to insure price stability should be kept in mind. Because of the difficulty of selling large amounts of bonds without disturbing the market, the major metropolitan banks occupy a more difficult position than do smaller banks. The active and broad market for short-term United States obligations, which in times of stress is likely to have the support of the Federal Reserve banks, is especially helpful and explains the higher proportion of such securities held in New York and Chicago than elsewhere.

Sound policy would dictate that demand deposits be invested in loans and discounts, other than real estate loans, and in short-term investments that are both marketable and stable in price. During the extreme convulsions leading up to the 1933 banking moratorium, United States Government obligations were virtually the only securities meeting this standard. For time deposits, more permanent investments in the form of real estate loans and high-grade bonds would appear suitable. The parallel between time deposits and investments on the one hand, and demand deposits and loans on the other, between 1920 and 1932 may be seen in the table below. The failure of investments to decline with decreasing time deposits in 1931–1932 can be attributed to purchases of United States obligations to replace the very large amounts of loans and discounts liquidated. After the banking

moratorium in 1933, the huge expansion of demand deposits was very clearly based on purchases of United States obligations.

DEPOSITS AND EARNING ASSETS OF NATIONAL BANKS—1920–1940

AS OF JUNE 30
(Millions of Dollars)

Year	*Loans & Discounts*	*Demand Deposits*	*Time Deposits*	*Total Investments*	*U. S. Gov't. Obligations* *
1920	13,502	13,670	3,485	4,051	2,270
1921	11,980	11,446	3,696	3,922	2,019
1922	11,193	12,209	4,112	4,518	2,285
1923	11,780	12,143	4,755	5,032	2,694
1924	11,958	13,088	5,260	5,107	2,482
1925	12,596	13,985	5,925	5,705	2,537
1926	13,327	14,328	6,314	5,842	2,469
1927	13,854	14,459	7,316	6,393	2,596
1928	14,927	14,342	8,297	7,147	2,891
1929	14,811	13,271	8,317	6,657	2,804
1930	14,897	14,516	8,753	6,888	2,754
1931	13,185	13,619	8,580	7,675	3,256
1932	10,286	10,195	7,266	7,197	3,353
1933	8,120	10,557	6,217	7,372	4,032
1934	7,698	13,042	6,891	9,349	6,004
1935	7,369	15,272	7,246	10,716	7,173
1936	7,763	18,537	7,663	12,483	8,447
1937	8,813	18,870	7,896	12,122	8,219
1938	8,335	18,732	8,084	11,644	7,988
1939	8,574	21,287	8,183	12,553	8,770
1940	9,179	24,719	8,355	12,905	9,111

* Includes guaranteed obligations.

In the case of mutual savings banks accepting only time deposits, such long-term investments have had a favorable record. The heavy investment of the mutual savings banks in mortgages and bonds and the relative stability of their deposits in the difficult period 1929–1932 are shown in the accompanying condensed comparative balance sheet. But commercial banks subject to heavy withdrawals in a period of suspicion have found time deposits as prone to flight as their demand deposits. Furthermore, to require advance notice of withdrawal of time depositors is generally impractical because of its effect in impairing confidence and hastening the withdrawal of demand deposits. But unless commercial banks can make permanent investments with funds left by time depositors, a fairly regular rate of interest upon deposits becomes impossible. Some students of banking hold that the investment function should be entirely divorced from commercial banking and placed with other financial institu-

MUTUAL SAVINGS BANKS*
SUMMARY OF REPORTS OF CONDITION

AS OF JUNE 30
(In Millions of Dollars)

Resources	1929	1932	1940
Cash on Hand and Due from Banks	$ 224	$ 443	$ 979
Investments	3,776	4,195	5,262
Real Estate Loans	5,315	5,884	4,835
Other Loans and Discounts	486	257	92
Banking House and Fixtures	110	132	124
Other Real Estate	23	127	571
Miscellaneous Assets	72	94	89
	$10,006	$11,134	$11,952
Liabilities			
Demand Deposits	$ 99	$ 3	$ 3
Time Deposits	8,903	10,036	10,628
Other Liabilities	18	44	25
Reserves for Dividends, Contingency, etc.	14	8	111
Capital Notes and Debentures	....	....	8
Surplus	824	890	868
Undivided Profits	148	153	309
	$10,006	$11,134	$11,952
Number of Banks	611	594	551

* Condensed from Reports of the Comptroller of Currency.

tions, such as the savings bank and the building and loan association.

The events leading up to the banking moratorium of 1933 demonstrated the necessity of maintaining public confidence if even reasonably sound banks are to be kept open. Numerous failures accompanied by exposures of unsound practices resulted in wholesale withdrawals from both strong and weak banks. One institution, for example, closed after liquidating over 90 per cent of its deposits. Any bank able to pay off so large a proportion of liabilities in a short space of time is a victim of unreasoning fear rather than of unliquid or unsound investment. The ability of such relatively nonliquid institutions as the mutual savings bank to come through the period of 1929–1934 with small or no losses of deposits and virtually no failures emphasizes the importance of confidence.

Fixed banking assets. Although both real estate mortgages and long-term bonds are usually fixed assets in the general sense of that word, being held for periods longer than one year, seldom are they so classified; only the real estate is ordinarily so set apart. The permanent assets in the form of banking house and

investments in the capital of foreign branches should be materially less than the bank's net worth.

The foregoing discussion of interrelation between assets and liabilities omits the liability items—borrowings of the bank and liability on account of letters of credit and acceptances for customers. The bank itself borrows only to meet the extraordinary needs of its customers for loans or withdrawals, and, like the demand deposits, the liability should be balanced by loans and discounts, the liquidation of which should remove this debt within a short time. As previously explained, the liability for letters of credit and acceptances will be balanced on the asset side by the liability of customers to the bank.

Clear statements of condition are helpful in allaying suspicions of weakness, especially among large depositors, and some banks have published reports of more than usual clarity. Balance sheets may be useful in building prestige by reflecting conservative policy in such matters as investing in short maturities of high-grade bonds, conservative asset valuations, and the creation of reserves for contingencies.

Assurance that the balance sheet value is conservative is sometimes given by the statement that it does not exceed market value.[14] Better still, especially for the analyst concerned with the stockholders' position, is an actual statement of market value.[15] The most satisfactory practice is an actual schedule of the bonds held, which permits not only valuation but an estimate of quality.[16] Such stark publicity has been put in practice by only a few pioneering institutions, whose example it is hoped will be more widely followed in the future.

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[14] Thus, the Royal Bank of Canada states, in its report of Nov. 30, 1933, that its securities are carried at amounts "not exceeding market value."

[15] The Lawyers County Trust Company of New York City states: "In April, 1933, the policy of carrying all securities at the current market value was adopted. Since that time, market quotations reflect an appreciation in value of $313,215.74. In keeping with sound and constructive banking practice, our Directors decided that this appreciation should be carried as a 'Special Reserve' against which any subsequent depreciation in market value may be charged." The foregoing and other illustrations of the recent trend towards greater clarity by banks may be found in "Statements Your Customers Understand," by Eugene Abegg, in *Burroughs Clearing House,* March, 1934.

[16] The Corn Exchange Bank and Trust Company of New York City in 1933 published a list of its securities at par value as of Feb. 1, 1933. This list could have been valued and appraised as to quality by the interested reader. The First National Bank of Englewood, located in Chicago, in its report for Dec. 31, 1930, appears to have given the first detailed list of security holdings ever published by a bank in this country.

The reader is interested in two points about the loans and discounts: first, whether or not they may be converted into cash quickly in case of need; and, second, their quality. The first point is met, if at all, by stating the amount of paper held which is eligible for rediscount, and the amount of collateral loans payable on demand. However, a bank might hesitate to call a security loan adequately margined without giving the customer time for making other arrangements if the customer were a good one. Again, where the collateral contains a large block of a single security, liquidation of the collateral might be difficult without breaking the market price.

To give satisfactory evidence as to the quality of the loans is more difficult. Classification may be helpful. Thus, bankers' acceptances and purchased commercial paper have the reputation of virtually never showing a loss. One small bank has published a detailed list of its customers' collateral loans, omitting the names of the borrowers and grouping the loans as those having more and less than a 50 per cent margin. A larger bank might achieve the same clarity by a short statistical presentation of the amount of loans with each degree of margin protection. The same small bank gave a list of its real estate loans with the amount owed and the address of the mortgaged property for each loan.

But any active bank serving commercial interests will ordinarily have a large amount of unsecured loans based on the general credit of the borrowers. The "commercial and industrial loans" shown above on page 419 are generally of this type. Any statement as to the maturity of such loans or the length of time they have been carried can give no certain notion of their value. When and how much any particular loan should be written down is a matter of judgment within rather wide limits, subject always to review by the bank examiner. A similar area for the exercise of judgment exists even in the field of secured loans. Consequently, the management has the difficult problem of being sufficiently conservative to protect the depositors, but sufficiently just so that the stockholders may not be misled by a grave understatement of their net worth and earnings. Probably in no other field involving such large public interests is there more uncertainty for the investor as to the meaning of the statements—partly because of the difficulty of valuing loans and discounts in even the most clearly stated balance sheet, partly because the statements themselves are so frequently inadequate in detail, and

partly because of relatively heavy deposit liabilities which make any fluctuation in the value of the assets bulk large for the small net worth.[17]

Federal Reserve banks. The Federal Reserve banks are of major importance serving as a bank for the commercial banks which are members of the system. Membership is compulsory for national banks, optional for state banks, and includes the bulk of the larger banks. A Federal Reserve bank will accept certain types of paper for rediscount or make secured advances to member banks and credit their accounts. By creating additional deposit balances, which serve as legal reserves for member banks, the credit situation can be eased materially in times of financial stress.

Whereas the ordinary bank must meet its obligations with cash, the Federal Reserve banks may issue their own paper money, the Federal Reserve notes. Money reserves, consisting chiefly of gold or gold certificates prior to March, 1933, but now of gold (bullion) certificates and other lawful money, are then held by these central banks against their own notes and deposits. A partial view of that portion of the balance sheet affected by rediscounting and note-issuing operations might appear as follows:

Cash	$1,000,000	Deposits of Member Banks	$750,000
Discounted Paper	500,000	Federal Reserve Notes	750,000

By so-called open-market operations, that is the purchase of Government obligations in the open market, the Reserve banks can add to their earning assets and to the deposit balances of their member banks. These balances, serving as legal reserves, make it that much easier for the commercial banks to increase, in turn, their loans and investments. By open-market selling, the Reserve banks can reverse the process and contract the volume of credit.

The following condensed statement of the combined resources and liabilities of the twelve Federal Reserve banks on March 8, 1933, just after the banking moratorium had been declared, shows

[17] A well-stated annual report can often engender confidence by frankness on what are known as potential hazards. An example is the statement of the chairman of the board to the stockholders of the Bank of the Manhattan Company at the 135th annual meeting (Dec. 5, 1933), in which such matters as mortgage loans and foreclosure problems, loans to German debtors, audit by directors, officers' salaries, and policy on loans to officers and employees were discussed.

the condition of the system at a time when the reserve ratio had fallen to the lowest point in recent years. At that time, the ratio of reserves to net deposits and Federal Reserve note liabilities was 45.6 per cent. The more recent balance sheet shows the huge additions to our gold stocks since 1933 and the corresponding expansion of deposits, which have given commercial banks excess reserves. This easy credit will facilitate the financing of the Government's efforts in World War II, but also carries a threat of inflation.

FEDERAL RESERVE BANKS*
COMBINED BALANCE SHEETS
In Condensed Form as of December 31, 1940 and March 8, 1933
(Thousands of Dollars)

	1940	1933
Assets		
Gold Reserves	$19,760,473	$2,683,539
U. S. Notes, Silver, and Other Cash	275,109	125,432
Total Reserves	$20,035,582	$2,808,971
Discounted Bills Secured by United States Obligations	851	982,188
Other Discounted Bills	2,064	431,748
Bills Bought in Open Market	.....	417,289
Industrial Advances	7,538	.....
United States Government Obligations	2,184,100	1,880,794
Uncollected Items	912,398	357,237
All Other Resources	121,035	166,420
Total	$23,263,568	$7,044,647
Liabilities		
Deposits	$16,125,707	$1,951,222
Federal Reserve Notes in Circulation	5,930,997	4,215,006
Deferred Availability Items	832,779	421,801
Other Liabilities	2,567	27,899
Capital Paid in	138,578	150,120
Surplus	232,940	278,599
Total	$23,263,568	$7,044,647
Calculation of Reserve Ratio		
Deposits, excluding Uncollected Items	$16,125,707	$1,951,222
Federal Reserve Notes	5,930,997	4,215,006
Total Deposit and Federal Reserve Note Liability	$22,056,704	$6,166,228
Total Reserves	20,035,582	2,808,971
Ratio of Total Reserves to Net Deposit and Federal Reserve Note Liabilities Combined	90.8%	45.6%

* *Annual Report of The Board of Governors of the Federal Reserve System, 1940*, pp. 32–33.

A falling reserve ratio may result either from exports of gold, that is, loss of reserve, or from borrowing by member banks desir-

ous of increasing their balances or of obtaining currency to meet their customers' needs. The discount of commercial paper, for example, would increase the asset, Discounted Paper, and either the deposits or notes opposite. A deposit with the Reserve bank is like so much cash, from the standpoint of the member bank, and constitutes its total legal reserve against its own deposit liabilities.

The Federal Reserve Act requires that the Reserve banks maintain a minimum reserve in gold or lawful money of 35 per cent against the deposits, and not less than 40 per cent in gold against the outstanding Federal Reserve notes, except in periods of emergency when penalties are imposed for its suspension. (Since 1933, gold certificates have taken the place of gold.) The actual reserve ratio in ordinary times will tend to a level considerably in excess of the minimum. Businessmen as well as bankers and economists follow the changes in the condition of the Reserve banks, as indicated by their reserve ratios and their discount rates, since they are the base of our commercial banking system.

Earnings and expenses. A detailed statement of a commercial bank's earnings and expenses will be available only to those who are within the bank, but the following list of earnings and expense accounts is suggestive of the nature of the bank's operations. Statements of the combined earnings and expenses of national banks may be found in the annual reports of the Comptroller of the Currency.

Gross Earnings:
- Interest and Discount on Loans.
- Income from Investments (Interest and Dividends).
- Collection Charges, Commissions, Fees, etc.
- Foreign Exchange Department Earnings.
- Trust Department.
- Service Charges on Deposit Accounts.
- Rents Received from Real Estate.
- Other Current Earnings.

Expenses:
- Salaries and Wages:
  - Officers.
  - Employees Other than Officers.
- Interest to Depositors.
- Interest and Discount on Borrowed Money

Real Estate Taxes.
Other Taxes.
Fees to Directors and Members of Committees.

Recoveries, Profits on Securities Sold, etc.:
Recoveries on Loans.
Recoveries on Bonds, Stocks, and Other Securities.
Profits on Securities Sold.

Losses and Depreciation:
On Loans.
On Bonds, Stocks, and Other Securities.
On Banking House, Furniture, and Fixtures.

Averages of the earnings figures of groups of banks as published by the Comptroller of Currency for national banks and by the Federal Reserve Board for members of that system provide comparative material for the management of the individual bank. Because they represent more homogeneous groups of banks, the earnings studies of the Comptroller, the Federal Deposit Insurance Corporation, and the various Federal Reserve banks by localities and by sizes are of even greater comparative value to the banker and to the investor.[18]

The earnings and dividend records of the national banks in their relation to total net worth are shown in the following table for a period beginning with the prosperous 1929 and extending through severe depression years and into the subsequent recovery period.[19] Earnings have run in the neighborhood of 7 per cent in the better years. In 1936, the unusual recoveries and profits raised the average earnings to 10 per cent. In the 1920's, when times were good, dividends ran between 5 and 6 per cent of net worth. The later years shown in the table show a lower rate, between 4 and 5 per cent, and reflect the need for repairing the ravages of depression losses.

The foregoing figures are in contrast with the figures sometimes published of percentages earned or paid on capital stock

[18] For the management of the bank or the investor with access to adequate earnings statements, comparative data and ideas for analytical procedure may be studied in *The Earning Power of Banks,* published by the Research Council of the American Bankers Association (New York, 1939).

[19] Compiled from *Annual Reports of the Comptroller of Currency.* Earnings data available for years beginning 1917 on calendar year basis; for years beginning 1869, on June 30 fiscal year basis. A study of "Profits of Commercial Banks" by Rollin Posey presents figures for national banks for the years 1908–1928. (*Harvard Business Review,* July, 1930, pp. 425–434.)

EARNINGS AND DIVIDENDS OF NATIONAL BANKS

IN RELATION TO CAPITAL, SURPLUS, AND UNDIVIDED PROFITS

Years Ended December 31
1929–1939

Year	*Net Before Recoveries & Losses* (*Per Cent*)	*Net Profits* (*Per Cent*)	*Dividends* (*Per Cent*)
1929	10.8	7.8	6.6
1930	8.6	4.0	5.5
1931	8.6	*1.4d*	5.2
1932	7.7	*5.0d*	4.1
1933	8.1	*9.6d*	2.4
1934	8.3	*5.2d*	3.1
1935	7.9	5.1	3.8
1936	8.2	10.0	4.3
1937	8.4	7.1	4.6
1938	7.8	6.0	4.3
1939	7.8	7.4	4.1

alone or capital stock and surplus, which, because they do not include the whole net worth, give an exaggerated picture of banking profits. Thus, the average percentage for dividends in 1935 in relation to total capital funds was 3.8 as against 6.7 on capital stock; in 1939, the corresponding percentages were 4.1 and 9.1.

Because of the variable effect of the write-off of loans and investments, the net earnings before recoveries and write-offs of all kinds were included in the table and reveal the write-off factor as the chief source of variation in bank profits.

The excess of the return upon the net worth over the rates of return from loans and investments shown above on page 422 is the profit derived from the presence of the depositors' funds. The fact that the stockholders as a whole suffered deficits in the four years 1931–1934 reflects the burden of services rendered and interest paid to depositors over and above the amount earned on the funds they supplied. If it were assumed that the funds of the bank stockholder could be invested directly to return 4 per cent net, without being engaged in banking, and if they actually earn 7 per cent when so used, the differential of 3 per cent could be attributed to profit from the employment of depositors' funds.

Ascertaining profits from balance sheets. The following Profit and Loss account, published together with a certified balance sheet, represents a practice that is as yet unfortunately very rare among banks.

Though the earnings statement is absent from most reports,

MERCHANDISE NATIONAL BANK OF CHICAGO

STATEMENT OF INCOME AND EXPENSES FOR 1940 COMPARED WITH 1939

INCOME	*1940*	*1940 Per Cent Increase*	*1939*
Interest on Loans	$361,252.21	+26%	$286,876.87
Interest on Investments	99,527.80	—49%	194,373.78
Exchange Charges	53,214.43	+ 2%	52,023.08
Service Fees	152,410.49	+11%	137,094.75
Dividends—Federal Reserve Bank	2,250.00	+14%	1,980.13
Operating Income	$668,654.93	—0.5%	$672,348.61
EXPENSES			
Salaries	$273,319.60	+13%	$241,670.58
Rent	53,875.97	+ 5%	51,169.36
Telephone, Telegraph, Postage	18,420.53	+19%	15,496.77
Advertising, Insurance, Legal, Supplies & Other Expense	112,583.68	+ 7%	105,512.94
Taxes	31,736.65	+ 3%	30,800.00
Interest on Deposits	81,105.38	+ 6%	76,279.91
Depreciation on Furniture & Fixtures	9,720.00	—15%	11,456.05
Operating Expenses	$580,761.81	+ 9%	$532,385.61
Profit from Operations	$ 87,893.12	—37%	$139,963.00
Profit from Sale of Securities (Net)	22,486.19	+89%	206,962.66
Total Profit for Year	$110,379.31	—68%	$346,925.66
Undivided Profits at Beginning of Year	438,415.12		296,489.46
	$548,794.43		$643,415.12
Less:			
Transfer to Surplus	.....		150,000.00
Dividends Declared	60,000.00		55,000.00
Undivided Profits at End of Year as Shown by Statement of Condition	$488,794.43		$438,415.12

the consecutive balance sheets will show the changes in surplus and undivided profits. By finding the difference in the surplus and undivided profits given in the balance sheet at two different dates, and then allowing for dividends paid in the interval, one may learn the net profits. The amounts of the dividends and the dates of their payment may ordinarily be had by inquiry at the bank.

Because of the lack of an earnings statement, it is necessary to exercise care in this matter. Sometimes the bank issues stock during the interval under study for an amount more than par value. In such a case, one must make allowance for the consequent unearned increase of surplus. On other occasions, the undivided profits or surplus fails to show the normal increase due to the writing off from the asset column of some large loss which

is not, properly speaking, a current operating loss. A few banks in recent years have stated the amount of these extraordinary write-offs, thereby permitting the stockholder to learn the results of ordinary operations for the year. A new administration sometimes finds it wise to write loan and security values down to a conservative basis at the outset of its career and so prevent this unpleasant event from marring the record later.

The formula for finding bank earnings for the interval between two balance sheets might be stated:

> Net Earnings = Dividends + Increase (or — Decrease) in Surplus and Undivided Profits — Any Surplus Paid in by Stockholders During the Interval.

The following illustrates the method used in finding the amount and rate of earnings:

	Jan. 31, 1940	*Feb. 28, 1941*
Capital Stock (par value, $100)	$2,000,000	$2,000,000
Surplus	1,000,000	1,000,000
Undivided Profits	580,000	540,000
Total Stockholders' Interest	$3,580,000	$3,540,000

Since the par value of the stock is $100, there are 20,000 shares of stock, the book value of which was $179 on January 31, 1940, and $177 on February 28, 1941. A dividend distribution of $10 per share occurred during the interval. The rate of return is calculated, then, as follows:

Dividends Paid During Interval	$ 10.00
Decrease in Book Value per Share for Period	2.00
Net Amount Earned During Interval (13 months)	$ 8.00
Rate of Earnings per Year per Share ($12\frac{7}{13}$ of $8)	7.38
Book Value per Share on Jan. 31, 1930	$179.00
Rate of Profit on Book Value ($7.38 divided by $179)	4.12%

In the above case, the dividends were greater than the earnings, with the result that undivided profits were reduced. The earnings were sufficient, however, so that the dividends of $10 per share reduced the book value only $2; in other words, for the 13 months, they amounted to $8.

Two ideas concerning dividend policy are current in banking circles: first, that reduction of the dividend rate is unfortunate and reflects upon a bank's prestige; and second, that a dividend should be paid only from earnings of the current year, except

under the most unusual circumstances. These ideas result in the banking rule that the dividend rate should be advanced only when there is excellent assurance that it can be maintained. The practice of this rule should result in growing surplus, stable dividends, and a generally high regard for the stock of the bank as an investment. The rapid growth of deposits since 1933 and current unsettled world conditions have made conservative surplus policy seem particularly appropriate.

Summary. The analysis of bank statements is most commonly undertaken from the standpoint of either the depositor, whose interest is in solvency, or the stockholder, who is interested in solvency, earnings, and dividends. Technical solvency, or the ability to meet liabilities promptly, is most satisfactorily measured by two ratios, namely, Cash to Deposits, and Liquid Assets to Deposits. Consideration should be given to the probable differences in the need for meeting deposit withdrawals, but actual evidence should be in hand before any distinction is made between the demand and the time deposits of the ordinary bank.

Liquid assets will include cash and those items which can be converted into cash within 24 hours if need arises. Some analysts have suggested the ratios of Loans and Discounts (or Cash Plus Loans and Discounts) to Demand Deposits, and Investments to Time Deposits, for a check on liquidity. In view of the known lack of convertibility of many loans and of the excellent liquidity of some securities, notably short-term United States obligations, the practical value of these ratios is extremely doubtful. Their use has been justified chiefly by the absence of sufficient detail in many bank statements to make any satisfactory check on liquidity.

The relation of the protecting stockholders' interest to the liabilities is watched by both depositor and stockholder. The ratio is often stated as Deposits to Net Worth. Since deposits supply most of the funds from which banking profits are derived, a high ratio is regarded as an indication of high potential profits.[20] Sometimes the ratio is stated in the form of Net Worth to Total Debt, or Net Worth to Total Assets. The last form has the advantage of stating the percentage which assets would have to

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[20] It should not be assumed from this statement that the profits of the bank are contributed by the depositors in the proportion which their balances bear to net worth, for the bulk of the income derived from the investment of the deposits is used up in services to depositors. See above, p. 434.

shrink before creditors would suffer loss. The greater the amount of cash and the more liquid the assets, the lower this ratio can fall without indicating increased hazard to the depositor. In order to allow for the extraordinary increase in liquidity in recent years, a useful ratio would be that of net worth to deposits minus cash, or to deposits from which cash and United States Government obligations have been subtracted. Net worth is needed not to protect deposits in the abstract, but to cover losses in those asset values which are subject to shrinkage.

Earnings and dividends are sometimes studied in relation to capital stock or capital and surplus, but the most suitable basis is the total net worth, including undivided profits. The investor will also compare earnings, dividends, and book value with the market price which he would have to pay to acquire the stock. Allowances should be made whenever abnormal, or nonrecurring, losses or gains occur. Unfortunately, information is frequently lacking as to the source or nature of earnings. The record must also be read in the light of the ability of the management, often indicated in the statements, and the economic possibilities of growth in deposits and opportunities for lending to the community.

Banks, like the public service corporations, reflect the general state of business health to a considerable degree. Aside from this general background, the analyst will need to watch two external factors that are likely to have major influences upon bank earnings. The first is the Federal Government's monetary and fiscal policy. The combination of easy credit and war finance generally provides a speculative impulse, which if not vigorously restrained leads to inflation and postwar collapse.

The second influence is the insurance of bank deposits by the Federal Deposit Insurance Fund. State guaranty funds have been tried unsuccessfully but the pressure to protect bank deposits, which constitute our chief circulating medium, gave rise to the Federal system.[21] Aside from the cost, bankers have objected to this new plan which levies a premium on total deposits without regard to the quality of the assets or to the fact that deposit accounts in excess of $5,000 were uninsured. However, the insurance should do much to remove panicky and un-

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[21] A history of recent state guaranty funds entitled "The Guaranty of Bank Deposits" has been prepared by the Economic Policy Commission of the American Bankers' Association (1933).

reasoned runs on sound institutions in periods of economic upset. The measure places the responsibility for the solvency of all insured banks on the doorstep of the Federal Government.

In a time of disturbed economic conditions, the analyst of the bank's financial statements finds it particularly necessary to read them in the light of changing external influences.

CHAPTER XVII

The Statements of Insurance Companies

Significance of insurance. So much is spent for insurance that a knowledge of what is relevant and important in the statements of insurance companies should be valuable to the businessman. The failures of companies recently organized in some of the newer fields, such as automobile coverage, are but a repetition of the early history of the older insurance fields, such as life insurance. A study of the financial condition of these companies would have shown the policyholders their weaknesses from the start.

To understand the statements of insurance companies, it is essential that the more general facts about the nature of the business be learned. In the field of insurance, the life and fire insurance companies rank first in point of size. Other types of insurance are based on principles similar to those of life and fire insurance, and the construction of the statements of such companies will give rise to practically no new problems, save in the matter of detail.

Insurance companies are incorporated under special state laws just as banks are; similarly, they are subject to examination and tests of solvency, and, in the case of life insurance companies, they are, in the interest of safety, limited in their investments. Such legislation serves to emphasize the peculiar importance of this business, which has become indispensable to our present economic system. Life insurance is important to as many people as are the banks. Everyone, from the wage-earner who pays his ten cents per week for an "industrial" policy, to the wealthy man who purchases a policy for hundreds of thousands of dollars, has a stake in the business.

Insurance reports. One can judge the relative safety of the various fire and other property insurance companies, at least in a general way, from the statements as they are published. When one is assured as to the safety of the concerns examined, the problem of choosing a property insurance company is virtually solved. There remain only the matters of premium cost (and

usually the premium rates are the same or substantially so, as a result of competition or the use of a common rating bureau) and of satisfactory service. In the case of life insurance companies, the policy contract normally extends over a number of years, and thus not only present solvency but also efficiency of operation is a matter of concern to the policyholder. The operating data which are published make possible an estimate of the relative merits of the various companies.

Because of the distinctive nature of the life insurance companies, they should be considered separately. Such companies report annually to the insurance departments of the state in which they are incorporated and of the states in which they do business. These reports are published annually and often contain considerable detail that is omitted from the one published by the company for its policyholders. The latter sometimes furnishes supporting material, and sometimes interpretation, that is not found in the formal report to the state. The annual publications of Alfred M. Best Company and the Spectator Company are also regarded by insurance men as standard sources of information.

The value of state supervision and the increased appreciation of sound insurance principles may be realized when it is known that no big life insurance companies failed after 1890 until the depression of the early 1930's, when a few companies located in states with weak regulation suspended operation. In contrast to this is the fact that nearly all of the life insurance companies organized between 1865 and 1869 failed before 1875.

Growth of life insurance. The figures in the following table give a general idea of the magnitude of the life insurance companies' business: [1]

Year	*No. of Policies in Force*	*Amount of Policies in Force*	*Gross Assets*
1860	56,046	$ 163,703,455	$ 24,115,686
1870	747,807	2,023,884,955	269,520,440
1880	608,681	1,475,995,172	417,951,090
1890	1,272,895	3,542,955,751	753,228,759
1900	3,071,253	6,947,096,609	1,723,737,723
1910	6,050,617	11,669,700,062	3,693,248,328
1920	13,206,526	28,430,027,284	6,550,253,577
1930	25,086,246	73,568,079,351	16,206,292,642
1940	30,046,728	80,696,561,609	26,981,167,925

[1] From *Reports of Superintendent of Insurance of New York State* for all the insurance companies (excluding "industrial policies," except that gross assets are total assets for all business) of this state, and of other states transacting business in this state.

This huge growth of assets is fairly well known, although there are few who appreciate the purpose of the accumulation. Indeed, the size of the assets some sixty years ago drew down suspicion. The large amounts were regarded by many people as the result of overcharges, and this feeling led to the formation of assessment companies and fraternal insurance orders with inadequate rates.

Mortality tables. Life insurance rates, or premiums, are based upon statistical information as to the number of deaths occurring among persons of different ages. These figures are constructed into mortality tables. The general agreement of the various mortality tables and the success of their application have justified confidence in their use, although at the present time the *American Experience Table,* which is commonly used by American companies, greatly overstates the probable mortality losses.

The *American Experience Table,* compiled in 1868 by Sheppard Homans, was based upon the experience of the Mutual Life

DEATH RATE PER 100

Age	*American Experience Table*	*Actuaries' Table*
25	.81	.78
35	.89	.93
45	1.12	1.22
55	1.86	2.17
65	4.01	4.41
75	9.44	9.56
85	23.56	20.51

Insurance Company of New York, with such modifications as its author thought desirable. It has gradually superseded the *Actuaries' Table,* from which it does not differ radically. The *American Experience Table* shows a slightly lower death rate for the ages from 30 to 78 than does the *"Actuaries' " or "Combined Experience" Table,* which was issued in 1843 and was derived from the experience of seventeen English life insurance companies. The newer *American Men Table of Mortality,* based upon the experience of American and Canadian companies during the years 1900–1915 for policies issued from 1843 to 1914, shows substantially lower death rates, especially at the younger ages. Some of the largest companies have recently adopted this table for their new business.

Mortality and the level premium. Without our going further into detail concerning the construction of these tables, it is

evident that, with advancing age, mortality increases. If a group of men paid into a fund each year just what was necessary to meet that year's death loss, the amount would be very low at first, but would become more burdensome with time and, finally, prohibitive. Such an amount would be $8.90 (per $1,000) at the age of 35 and $235.60 at the age of 85, according to the *American Experience Table* above. Because of the prohibitive figure at advanced ages, a level, rather than an increasing, premium is generally regarded as the most satisfactory form of life insurance. In order to have a level premium, enough more than the amount needed for current death losses is collected during the first years of insurance to bear the burden of later years when losses exceed the premium income.

This excess premium is known as the "reserve." Since the laws of the several states require life insurance companies to accumulate reserves, the excess amount when calculated on the basis prescribed by law is called the "legal reserve." "Legal reserve" companies are also referred to as "old line" companies. The reserve liability is the major liability in the balance sheets of these companies.

Interest and the premium. Interest will be earned on the reserve funds, and will serve to swell the reserve. It would be more nearly correct to say that the interest reduces the amount which it is necessary to collect for a reserve, for in the calculation of the premium this second factor, the interest earnings, is allowed for. The premium rate is correspondingly lowered. The insurance law provides the maximum interest rate which a life insurance company may assume in its calculations. The restriction is designed to prevent an over-optimistic forecast and a consequently inadequate premium rate. In view of the long period for which life insurance must run, such regulations are essential for the protection of policyholders. In New York State, the maximum rate of interest which a company may assume is 3½ per cent. If a company assumes a lower interest rate, and a considerable number do use 3 per cent, the premium is higher and a larger reserve is accumulated during the early years of the policy.[2] Some companies have adopted a 2½ per cent rate recently.

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[2] The Insurance Law of New York, Chapter 882, Laws of 1939, Section 205 provides as legal minimum standards: (a) the Actuaries' Table and 4 per cent interest for policies issued before 1901, (b) the American Experience Table and 3½ per cent for policies issued subsequently, and (c) the American Men Ultimate Table and 3½ per cent interest for policies issued after 1929. Other

Loading. The calculation based on the mortality table and on an assumed interest rate to be earned on the reserve is the work of the actuary, and gives us what is known as the "net level premium." To it must be added an amount sufficient to cover the expenses of operation, which amount is called "loading." The net premium plus the loading is the premium rate quoted to the purchaser of life insurance.

If the premium were calculated in exactly the manner outlined, the loading for the first year would be inadequate to meet the heavy expenses which are incurred at that time. In order to permit the use of a larger amount of this first premium for expenses, some life insurance companies reduce the reserve requirement to less than it would be under the strict "net level premium" method. Three modifications employed are known as (1) the select and ultimate method, (2) the modified preliminary term method, and (3) the full preliminary term method. When any one of these methods is used, the resulting reserve liability is reduced during the early years of the policy's existence. The sizes of the reserves resulting from these methods rank (from largest to smallest) in the order in which the methods are named. When the reserve standard of the "net level premium" method is to be lessened, the "select and ultimate" modification is regarded as the most scientific and satisfactory. Under this method, the below-average death losses among the newly admitted policyholders, who are required to pass a medical examination and are consequently a *select* group, are noted; the savings from this source are used for expenses, and the strict reserve requirement of the "net level premium" method is put into effect after the fifth year of insurance. Which modification is employed, however, is of relatively secondary importance in a general comparison of companies such as is outlined here.[3]

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standards are specified for supplementary contracts, annuity, group, and industrial policies. The select and ultimate method may be employed whereby the rate of mortality during the first five years after the issuance of the contracts shall be calculated according to the following percentages of the rates shown by the American Experience Table of Mortality: first insurance year 50 per cent thereof, second year 65 per cent, third year 75 per cent, fourth year 85 per cent, and fifth year 95 per cent.

[3] An extended discussion of these methods will be found in Riegel, R., and Loman, H. J., *Insurance Principles and Practices* (New York: Prentice-Hall, Inc., rev. ed., 1929), pp. 149–152. Also see footnote 2 above. *Best's Life Insurance Reports* characterize reserves on these four bases: "strongest," "strong," "minimum safe and adequate basis in general use," and "minimum permitted by law," respectively.

Dividends and net cost. Mortality may be less than that allowed for by the table; interest may be earned in excess of the assumed rate; and the loading may prove to be more than is needed. Such savings one would expect to benefit the stockholders. As a matter of fact, the bulk of life insurance in this country is sold by mutual companies. The result is that the savings from these sources are returned to policyholders as "dividends." Even some of the stock companies issue participating policies, which provide for dividends to policyholders.

The net cost of the insurance is the premium paid less these dividend refunds. The net cost provides the usual basis for comparing the policies of different companies to determine their relative merits. The method is open to three possible objections: (1) a particular type of policy of a given company may be favored with more liberal dividends than other types issued by the same company, and it is necessary, in all fairness, to compare all kinds of policies of the two companies under study; (2) again, the future may differ from the past experience, and the company with the poorer *net cost* showing at present may be gathering strength which will reverse the situation; (3) finally, those companies which assume a low interest rate, say 3 instead of 3½ per cent, in computing their reserve will find it necessary to set aside larger sums in the earlier years of the life of the policy. The result will be an apparently higher net cost, which will be balanced by a higher reserve accumulation. In later years, this greater accumulation will provide greater interest income, and so should give a lower net cost in those years. In spite of these objections, the test of relative net costs is practical and rapid, although it should be supplemented to insure fairness. In the long run, low mortality, low expenses, and high investment returns will bring the lowest net cost.

Gain and Loss Exhibit. Prior to 1939, the gain and loss exhibit summarized the net gains and losses in surplus, by comparing actual income or expense with the respective parts of the premiums and reserves which had been actuarially allocated to those particular items. Thus, (1) the gain from mortality represented the excess of that portion of the premium (and reserves) set up for death losses with actual payments on account of death; (2) the gain from interest reflected the excess of earnings on investments over the amount of interest assumed in constructing the premium rate; and (3) gain or loss from loading showed the amount by which operating expenses fell short of or exceeded the

loading in the premiums. Other less significant gains and losses arose from such sources as supplementary contracts for disability and accidental death benefits, the surrender or lapse of policies, and annuities. From the earlier discussion, it is clear that a company would show greater gains than similarly efficient companies if it charged higher premiums because of its assumption of a high mortality experience table, a lower interest rate, or heavier expense loading.

Because of the widespread feeling that differences in mortality, interest rate, and loading assumptions in the construction of premium rates, and differences in the character of business written made for unfair comparisons under this form of gain and loss exhibit, a changed form was adopted in 1939. This form is illustrated in the 1940 Gain and Loss Exhibit of the Metropolitan Life Insurance Company of New York shown on page 447.[4]

The percentages are chiefly useful in making it easier to see the proportions among the various items. There are no standard or ideal relations and the proportions would naturally vary greatly from company to company. In fact, instead of comparing the expense items with the gross income, the amounts set aside for reserves should first be deducted (and they bear a most variable relation to gross income) as only the balance is actually available for payments to policyholders, such as insurance benefits and maturities, and for expenses of operation. Previous discussion and certain points made below explain why a variable proportion of the total income is set aside for reserves, used for losses, and spent as expenses.

The net gain from insurance is explained so that the reader can see from what classes of policies it is derived. Losses are most frequently incurred on the disability and annuity contracts. The net gain is not a true profit nor a measure of efficiency, since different companies with like efficiency may have based their premiums on different assumptions as to mortality, interest rates, and loading. The net gain does indicate the margin of excess income which makes it possible for the company to bear adverse mortality or reduced investment income in later years without draining surplus and moving toward insolvency.

After the net gain from insurance, appear the irregular and nonrecurring gains and losses, such as profits from the sale or redemption of bonds, losses in foreclosed mortgages or real estate

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[4] *The Insurance Year Book,* Life, 1941, pp. 360b–361b.

GAIN AND LOSS EXHIBIT FOR 1940 FOR THE METROPOLITAN LIFE OF NEW YORK

	$	Per Cent
Premiums and other considerations	803,719,759	78.4
Dividend accum. and suppl. contracts without life contingencies	44,816,153	4.4
Investment income (less investment expenses including taxes)	175,623,999	17.1
Other income	407,820	.1
Total Income (a)	1,024,567,731	100.0
DISBURSEMENTS:		
Deaths	175,010,157	17.1
Maturities, disabilities, annuities	137,446,223	13.4
Surrender	156,906,858	15.3
Dividend accum. and suppl. contracts without life contingencies	22,013,903	2.1
Commissions, taxes and other insurance expenses	151,177,127	14.8
Other disbursements	31,928,776*	3.1
Total Disbursements (b)	674,483,044	65.8
Increase in reserves on contracts involving life contingencies	171,678,319	16.8
Increase in reserves for dividend accumulations and supplementary contracts without life contingencies	28,920,122	2.8
Increase in other reserves and assets not admitted	–437,249	–.0
Total Increase in Reserves (c)	200,161,192	19.5
NET GAIN FROM INSURANCE:		
Industrial	58,408,387	5.7
Life	72,558,446	7.1
Total and permanent disability	–4,985,481	–.5
Accidental death benefits	2,971,186	.3
Annuities (excluding disability annuities)	333,494	.0
Group and group annuities	20,637,463†	2.0
Total Gain from Insurance (a–b–c)	149,923,495	14.6
INVESTMENTS:		
Net profit on sale or maturity	7,027,758	
Increase by adjustment in book value (net)	–31,054,005	
Gain, change in difference between book and admitted values	4,198,212	
Net Profit from Investments	–19,828,035	
Net Gain from Underwriting and Investments	130,095,460	
Dividends to policyholders	115,942,943	
Dividends to stockholders		
Increase in general contingency reserves		
Gain from miscellaneous items		
Total Net Loss from Miscellaneous Items	115,942,943	
Increase in Surplus During 1940	14,152,517	

* Includes $16,144,393 benefits under accident and health policies.
† Includes $12,709,404 gain from group insurance, $2,286,041 contingencies.

sold, or readjustment of the book value of assets as required by law. Finally, there appears any distributions, either to policyholders or stockholders.

Standards and comparisons. Since the change to the present form of gain and loss exhibit, the reader cannot tell how much of the gain is due to mortality savings over the assumed standard on which premiums are based. He will note, however, what mortality tables are employed and should the American Men's Table be used instead of the usual American Experience Table it will be expected that mortality gains will be smaller. A new or rapidly growing company will be expected to make a favorable showing on the score of mortality.[5] Those policyholders who have just passed a medical examination are a freshly selected group, and will tend to show a relatively low mortality even if they are none too well selected.

Performance on investment policy can still be checked satisfactorily. The general measure is the net rate of return earned on the mean (average) admitted assets. The problem is then broken down and the rate of return studied for the particular assets: bonds, mortgages, real estate, and policy loans.

Operating expenses might be compared with the total premium income. However, three major objections to this crude ratio are that it fails to take account of: (1) differences in the proportions of old and new business, (2) necessary differences in the expensiveness of doing different kinds of business, and (3) differences in the manner in which the premium rates used as a base are constructed.

The first objection arises from the fact that the proportion of expense is by far the heaviest during the first year of the policy, because of the salesman's commission, medical examination, and cost of issuing the policy. The expenses of a company doing a large amount of new business in proportion to the business it already carries would tend to be a relatively high per cent of the premium income.

Where the question is raised as to whether a given company is unduly handicapped, in a comparison of its expense ratio with

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[5] Stressing the varying accuracy of the *American Experience Table* as a measure of present-day mortality of life insurance policyholders, *Best's* states: "*On the same business* the mortality rate will run from about 25 per cent at the younger ages to over 100 per cent at age 65 and then down again to about 90 per cent." *Best's Life Insurance Reports*, 1941, p. xxi.

the ratios of other companies, because of its high proportion of new business, the three following ratios are available as a check:

1. First-Year Commissions to New Premiums.
2. Total First-Year Expense to New Premiums.
3. Renewal Expenses to Renewal Premiums.

Ratios one and two show what proportion of new, or first-year, premiums are absorbed by commissions and by all first-year expenses, respectively. The third ratio states the proportion of renewal expenses to renewal premiums. Some companies pay relatively high commissions on the initial premium and relatively low commissions on renewals, while others show less disparity between the two. These three ratios are more useful as a check upon than as a substitute for the ratio of total expenses to total premiums.

The second objection lies in the difference in the per cent of loading or expense necessary for premiums of different types of policies of a given company. A twenty-year endowment insurance for $1,000 might have a premium of $48 per year, an ordinary life $21 per year for $1,000. While the commission will be a higher amount on the former policy, it will be a lower per cent of the premium. So important is the commission as a part of the expense that a company which wrote a very heavy proportion of its business in endowment insurance would be expected to show a decidedly lower expense ratio than one which wrote chiefly ordinary life or term policies.

The third objection is that the ratio is unfair, since it uses as its base the premium rate. As a consequence, high premiums make the expense ratio appear low, and vice versa. Some companies will have premium rates very closely alike, while others will show considerable variation. The objection is significant only in the case of the latter. Rate differences are particularly important between participating and nonparticipating policies. The rates on the latter class of business are set considerably lower, since the policy does not participate in any of the savings of the company, receiving no dividends.

Another method of allowing for varying proportions of new and old business in studying the expenses is offered in *Best's Life Insurance Reports*. Five times the new insurance written during the year is added to the total insurance in force at the end of the previous year. The total is divided into total expenses. A subsidiary adjustment is made by adding one-tenth of the varia-

tion in the average premium on all business below $30 per thousand or subtracting 5 per cent for any excess of the average premium over $30 per thousand. The resulting expense ratio is then stated as so many dollars per $1,000 of old insurance. The principle was previously used by the Connecticut Insurance Department, but with a higher ratio for the expense of new to that of established business. In order to give comparability, any industrial and group insurance should be separated from the ordinary insurance business. The expenses of the industrial policies are higher and those of the group policies lower than for the ordinary business. Should the annuity business grow in importance and fail to be separated, another source of confusion might arise, for the ratio of expense to premiums on such contracts is very low.

In a study of a company's expenses, then, the first consideration to be made is an allowance for the youth of the company and the proportion of its income which represents new business. The second consideration is the relative distribution of policies between high-premium classes (such as a twenty-year endowment) and low-premium classes (ordinary life). The third consideration, the difference in premium rates, when used as a base for the expense ratios, may be allowed for if a comparison of rates for typical policies of the companies being studied reveals sufficient differences. If such differences exist, the application of the expense ratios to the rates charged will quickly show the actual amounts which the policyholders are contributing for overhead per unit of insurance.

Some other ratios that are often used in order to understand the company better are: (1) the average premium, (2) the average policy, (3) the average of new policies written, (4) the average of policies lapsed or surrendered to average total insurance, (5) average life reserve per $1,000 of insurance, and (6) the ratio of surplus, or net worth, to life reserves.

Life insurance assets. The balance sheet furnishes information not only as to the financial condition, but also as to the character of the company. The assets show three headings, "Ledger Assets," "Nonledger Assets," and "Deduct Assets not Admitted." The so-called nonledger assets are accruals—accrued interest on securities, and uncollected and deferred premiums. When less than the full annual premium is received, the unpaid portion of the premium is regarded as an asset under this heading. Such treatment is necessary, because the reserves are calcu-

lated on the assumption that the full premium is received. From the sum of the ordinary ledger, or book, assets and the nonledger assets, the items under the third heading are deducted. The insurance law will not permit the inclusion of certain amounts, such as "Agents' Debit Balances," "Overdue and Accrued Interest on Bonds in Default," and the book value of such assets as real estate and bonds when it is in excess of the figure authorized by the insurance department of the regulating state.

These deduction items might well be deducted directly from the ledger assets affected if one were rewriting the balance sheet in a simplified form. The item of accrued interest on bonds in default is included in this group of deductions, and an examination of the detailed schedule of the company's investments will reveal the offending bonds. The item is not an unusual one, and shows how the most conservative investors suffer loss on occasion.

Real estate. The book value of the real estate may be traced from year to year. It represents the building which the company has built for its home and such properties as it may have been obliged to take over in connection with defaulted mortgage loans. The latter should be small. The "home offices" have frequently meant an overlarge office building erected with an eye to its advertising value—possibly a case of poor vision—which explains why this asset has been regarded so often as a poor investment and has shown but a low rate of return. Most of the changes in the real estate total are to be explained in connection with property acquired upon defaulted mortgage loans. Growth usually indicates acquisitions through foreclosure or agreement with an embarrassed debtor; and decreases, the sale or disposal of such realty. When so acquired, real estate is appraised, and if its value is less than the mortgage loan, the amount is written down.[6] A clue to the condition of this asset will be found in the investment exhibit, where gains and losses on real estate acquired in this manner are shown.

If the real estate item is substantial because of heavy mortgage

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[6] Desirable practice is indicated in the annual report of the Provident Mutual Life Insurance Company of Philadelphia for 1933: "The value of foreclosed real estate as carried in the balance sheet is not in excess of the face amount of the mortgages. All acquisition costs, including back taxes, are completely charged off. No overdue interest is capitalized. In addition, each piece of real estate is carefully reviewed at the end of each year and where the Company is not satisfied with the book value, it is charged down to a figure that is satisfactory. During the year 1933, the sum of $627,000 was applied to reduce the book value of real estate and to write off foreclosure costs."

foreclosures, it should be given close scrutiny. In addition to any statements on valuation methods, evidence will be sought as to maintenance. Total real estate expenses, including taxes, are not likely to run less than 4 per cent of value if adequate maintenance exists. More is frequently necessary when the property is first acquired in order to repair neglect. Profit or loss on property resold may provide a clue to the conservatism of valuations, although a conservative company may show no profit on real estate sold on a sales contract, preferring to treat the profit as uncertain and only realized as the payments are received, as in installment selling.

Mortgage loans. "Mortgage loans" is usually one of the largest assets. As made by life insurance companies and savings banks, mortgages are relatively safe investments. Although they require considerably more care and effort in selection than bonds and are not as easily converted into cash, they afford, however, an opportunity for a somewhat higher return. Insurance companies not only have found mortgage loans a most valuable investment field, but have also rendered a signal service to home builders and farmers by these investments.

Bonds. Bonds, together with the mortgages, will normally make up the major part of the investments. The advantages of bond investments are already familiar. For a more detailed study of this asset, the schedule of "Bonds Owned" may be examined in the annual report, where the names of the bonds and the book, or amortized, value, the par value, and the market value of each block of bonds purchased and held by the reporting company at the date of the balance sheet are stated. Stocks, since they are subject to greater fluctuations in value and greater risks, are not generally regarded as suitable investments, usually being acquired in reorganizations in place of previously held bonds.[7]

Mortgages and bonds, and sometimes preferred stocks, are regarded as more suitable than common stocks for life insurance

[7] In recent years, there has been a tendency to make an exception in favor of preferred stocks. A number of states permit common stock investments, but usually in very limited amounts; the right is but little exercised by the business as a whole. Thus, in 1940, total preferred, guaranteed, and common stocks held by United States companies were less than 3 per cent and total common stocks alone less than one per cent of total assets. The Dominion of Canada allows common stocks without limit, and the Sun Life of Canada has been the chief example of a company with a large common stock portfolio.

investments for two main reasons. In the first place, common stocks fluctuate in price more widely, not merely because of changes in interest rates and credit ratings, which affect long-term credit instruments as well, but also because of changes in earnings and dividends. The liability of the insurance company to its policyholders is a fixed amount of dollars, and there is need of a certain income if the reserves required by the policy contracts are to be accumulated. In the second place, the surplus of assets over liabilities is so small generally that little leeway is left for losses such as are always potentially present in common stock holdings.

The amortized value is generally the authorized value at which life insurance companies are allowed to carry bonds on their balance sheet, so that market values will in some years be higher and in others lower.[8] Authorized values for defaulted bonds and for stocks are ordinarily market values, and if a company chooses to carry such investments at a higher value, a deduction has to be made at the foot of the balance sheet for "non-admitted" assets.[9] In periods of unusual financial disturbance, this use of current market values is suspended temporarily. These special valuation rules are, generally, those adopted by the National Association of Insurance Commissioners. The principles underlying these emergency rules apparently are:

1. A security is good until it is demonstrated to be bad—by default in the case of a bond, or receivership in the case of a stock.
2. Bonds not in default are to be carried, normally, at amortized value. Defaulted issues, like stocks, are to reflect market value to a more or less limited extent.

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[8] From 1935 to 1939 inclusive, stocks were valued at market value and bonds not in default, at amortized value. In 1940, the rule was stiffened so that bonds not in default may be amortized only if they are: (a) Governments or legal municipals, (b) bonds rated in top four rating groups by two bond services, (c) rated in top five ratings by three services, (d) rated in top five ratings by two services and selling at 55 or higher during each of September, October, and November, 1940, or (e) bonds of less rating or unrated if proved to satisfy above requirements on basis of investment quality. The maximum value for mortgages in foreclosure were placed at unpaid balance plus one year's interest and taxes. Repossessed buildings must be depreciated at least 2 per cent per year.

[9] In 1929, an unusual situation of the reverse order occurred when the Sun Life Assurance Company of Canada carried its stock investments at $63,681,590 less than the market, or authorized, value. This "hidden reserve" melted in the immediately succeeding years as stock market values slumped.

3. The valuation of stocks involves market quotations, but weight is given to cost and dividend yield.[10]

The use of the "amortized value" figure may be illustrated by the case of the following investments:

	Par	Book or Amortized Value Dec. 31, 1939	Dec. 31, 1940
Boston, Mass., 4½'s, 1966	$ 20,000	$ 23,476	$ 23,396
Abbeville County, S. C., 3½'s, 1946–1950	100,000	100,000	100,000
Atlantic Refining Co., deb. 3's, 1953	100,000	98,870	98,940

The above bonds were entered on the books at cost when purchased, and, unless unusual circumstances arise, are likely to be held to maturity. The Atlantic Refining Company 3's were purchased below par, and the discount, which will be realized in cash when the bond matures, is regarded as adding to the income each year. The amortized portion of the discount is added to the book value of the bond, so that at maturity the book or amortized value will be par; the proper proportion of the discount added to the book value is credited to the account showing the income from the bonds. The income from these last-named bonds during 1939 was as follows:

Interest Collected	$3,000
Discount Amortized ($98,940–$98,870)	70
Total Return or Yield	$3,070

The Boston, Massachusetts 4½'s were purchased at a premium, and so the proper portion of the premium was written off during 1939. This amount, $80, would reduce the net yield from $900 (the amount of interest received) to $820. The Abbeville County bonds were purchased at par and so involve no amortization.

Policy loans. Loans on policies are a privilege which the policyholder has a right to demand under his policy contract. Since the loan is not to exceed the amount of the cash surrender

[10] At the end of 1931 and 1932, the authorized values for stocks were market values as of June 30, 1931, which were found to be the approximate equivalent of average market prices for a range of five quarterly periods ending Sept. 30, 1931. At the end of 1933, the authorized figure was found by averaging the figure used in the preceding year with quotations of Nov. 1, 1933. However, if this figure was more than the amount obtained by capitalizing the aggregate dividend yield at a rate sufficient to maintain the reserves, this lower amount was to be used. For a more exact statement of the rules, see the introductory material in *Best's Life Insurance Reports* for each year.

value, which is based on the legal reserve, it is completely safe. The company merely lends the policyholder from the reserve on his own contract, which would otherwise be invested. Although such loans, by becoming a claim against the policy, reduce the protection which the policyholder has, they often keep the policy from being dropped, and have, on some occasions, as in panic years, been a most welcome resource to the hard-pressed businessman.

The cash surrender value, which is the basis of the policy loan, is that portion of the accumulated legal reserve which the company pays to a policyholder when he surrenders his policy for cancellation. Since the reserve is an excess payment for future benefits to be obtained only by the continuance of the policy, the cash surrender value merely represents a fair means of settling with the policyholder who wishes to discontinue his insurance. From the company's point of view, policy loans have the advantage of giving a good rate of return with no risk, but a high proportion to total assets is looked upon with disfavor because borrowing is likely to lead to the lapse of policies and so a loss of business.

Cash. Cash will be stated in two amounts, the interest-bearing and non-interest-bearing balances being given separately. Cash balances may be larger than are necessary, but may be justified at a time when the prices of securities are disadvantageously high, in which case the company may gain by waiting. In general, however, overlarge cash balances indicate a wasteful investment policy.

Asset distribution. The manner in which the funds of life insurance companies are almost completely invested is revealed in the accompanying percentage distribution statement of the assets of leading United States companies owning over 90 per

DISTRIBUTION OF ASSETS OF LEADING UNITED STATES COMPANIES
(Percentages)

	1927	1932	1937	1939
Real Estate	1.9	4.0	8.0	7.1
Real Estate Mortgages	43.1	35.7	19.7	19.1
Bonds and Stocks*	37.8	36.7	55.2	57.9
Policy Loans†	12.1	17.9	12.6	10.8
Cash	.8	1.5	2.8	3.1
All Other Assets	4.3	4.2	1.7	2.0
	100.0	100.0	100.0	100.0

* Stocks are chiefly preferred and total less than three per cent of assets in later years, and less than one per cent in 1927.
† Includes premium notes.

cent of the admitted assets of all companies.[11] The mortgages and bonds are the bulk of the total. The type of mortgage—farm or urban—and the kind of bonds—railroad, utility, or civil—which are added in any given year will be found to reflect the changes in the supply of new high-grade investment opportunities. In times of distress, policy loans, and likewise real estate, increase, the former reflecting the needs of policyholders to borrow on the reserves of their policies, and the latter the acquisition of property from distressed borrowers on mortgages.[12]

The influence of the times upon the investment portfolio is illustrated in the detailed table on portfolios shown below, which reveals the decline of the importance of the farm mortgage and the rise, both absolute and relative, in the importance of utility, state and municipal, and United States Government bonds.

CLASSIFICATION OF INVESTMENT PORTFOLIO OF LEADING UNITED STATES COMPANIES: 1927–1932–1939
(Percentages Are of Total Assets)

	Millions of Dollars			*Percentages*		
	1927	1932	1939	1927	1932	1939
Mortgages:						
Farm	1,982	1,701	791	15.0	8.9	3.0
Other	3,702	5,095	4,330	28.1	26.8	16.1
Total	5,684	6,796	5,122	43.1	35.7	19.1
Bonds and Stocks:*						
U. S. Government	441	421	5,063	3.3	2.2	18.9
State and Municipal	356	740	1,650	2.7	3.9	6.1
Canadian	304	448	533	2.3	2.4	2.0
Other Foreign Government	33	25	6	.3	.1	...
Railroads	2,561	2,940	2,946	19.4	15.5	11.0
Public Utility	1,076	1,808	3,774	8.2	9.5	14.1
Other	215	594	1,565	1.6	3.1	5.8
Total Bonds and Stocks	4,987	6,976	15,537	37.8	36.7	57.9

* Almost entirely bonds.

[11] *Reports of the Association of Life Insurance Presidents.*

[12] The following excerpt from the 1932 annual report of the Northwestern Mutual Life Insurance Company relative to its mortgage experience is of interest: "The history of your Company's investments in these mortgages, during the past 75 years, includes several periods of severe economic depression, notably those of 1873–1879 and 1893–1899. The lessons learned during those periods resulted in the establishment of such conservative rules governing the Company's investment practice that the severe depreciation in real estate now existing has been largely discounted in advance. Such ultimate losses as may occur should be confined mainly to interest. . . . On Jan. 1, 1929, the foreclosed real property owned . . . amounted to .255% of the total admitted assets . . . [and] on Dec. 31, 1932, to 1.437% of the admitted assets or less than $15.00 per $1,000 of such

Reserves. The layman in turning to the liability side of the balance sheet is likely to feel confused at the multiplicity of headings. Where the term "present value" is given, it indicates the presence of the reserves mentioned above in the discussion of the construction of premium rates. The various headings show reserve liabilities calculated on bases varying slightly because of the issuance of policies at different periods, when different interest rates and mortality tables were employed in computing the reserves. This type of liability is also shown for annuities and supplementary contracts, such as the accidental death benefit which some life insurance companies add to their policy.

Current liabilities. A number of liability items showing claims in the process of adjustment and payment follow. There will also be accrued and unpaid salaries, fees, and taxes. These items—not including the reserves—together with some of the dividend appropriations, might be called the current liabilities of the company. Most of the dividend appropriations are paid annually; but there are some companies, mostly those with old policies still outstanding, which provide for "deferred dividends." "Deferred dividend" policies have also been called *semitontine, accumulation,* and *ten-, fifteen-,* or *twenty-year distribution policies.* The present insurance laws in the more important states require that policies provide for the annual distribution of surplus. The New York law (Art. II, §83) provides:

> . . . After setting aside from such surplus (that is, surplus earned during the past year) such sums as may be required for the payment of authorized dividends upon the capital stock, if any, and such sums as may properly be held for account of existing deferred dividend policies, and for a contingent reserve not in excess of the amount prescribed in this article, every such corporation shall apportion the remaining surplus equitably to all other policies entitled to share therein.

The contingency reserve or undistributed surplus permitted under the New York law (Art. II, §87) is fixed on a sliding scale that ranges from 20 per cent of the reserve liability, where that liability is $100,000 or less, down to 5 per cent of the reserve liability, where that liability is in excess of $50,000,000.

Surplus as to policyholders. If a company is a stock company, the remainder of the liability side of the balance sheet will

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assets. . . . The book value of the farm properties and the improvements thereon at appraised current prices, now owned by your Company, averages only $37.63 per acre."

be represented by capital stock and surplus; if a mutual company, by surplus. The surplus may be designated as "unassigned funds," or may be shown under various headings that indicate the purpose for which it is held. Thus, in one case, it is shown as: "Contingency Reserve Funds: Suspended Mortality Fund, $—; Dividend Equalization Fund, $—; Security Fluctuation and Real Estate Depreciation Fund, $—." For medium and large companies, the total surplus, or stock and surplus, will ordinarily range between 5 and 10 per cent of the liabilities. This "surplus to policyholders" should be studied for a period of years so that the trend may be noted. When taken in connection with the loss and gain statement, it indicates whether the dividend policy is likely to be in need of revision.

Balance sheet comparison. The accompanying statements may be taken as illustrating the two different types of manage-

DECEMBER 31, 1931

	A		*B*	
Assets	*Amount*	*Per Cent*	*Amount*	*Per Cent*
Real Estate	$1,800,000	36.7	$ 670,000	1.0
Mortgage Loans	650,000	13.3	28,420,000	40.5
Bonds	1,030,000	21.0	24,860,000	35.5
Policy Loans	1,160,000	23.6	11,900,000	17.0
Collateral Loans	.....	...	1,200,000	1.7
Premiums Due and Deferred	80,000	1.6	1,300,000	1.8
Accrued Interest on Bonds	20,000	.4	1,300,000	1.8
Cash	80,000	1.6	500,000	.7
Other Assets*	90,000	1.8	5,000	...
	$4,910,000	100.0	$70,155,000	100.0
Liabilities and Surplus				
Net Reserves	$4,620,000	94.1	$62,150,000	88.6
Reserves (supplementary contracts)	70,000	1.4	1,500,000	2.1
Claims	80,000	1.6	300,000	.4
Dividend Appropriations	30,000	.6	2,600,000	3.7
Other Liabilities	10,000	.2	400,000	.6
Surplus to Policyholders	100,000	2.1	3,205,000	4.6
	$4,910,000	100.0	$70,155,000	100.0

* The actual report also shows the amount of interest due and accrued on bonds in default, which is omitted here.

ment of two companies, which will be called *A* and *B*. The percentages indicate the proportion the given type of asset or liability is of the total assets or total liabilities.

In view of what has been said in regard to investments, it is apparent that Company *B* is in a superior position. The real estate of that company is relatively small and the investment in

mortgage loans very large; mortgages and bonds make up three-fourths of the assets, and the cash has been kept to a low percentage. In one year, Company *A* earned as follows:

Assets	*Per Cent*
Real Estate	2.6
Mortgage Loans	5.0
Bonds	4.3
Policy Loans	4.8
Cash	2.9

So large a proportion of the assets was in real estate that the average rate of return on the earning assets was but 3.8 per cent. An examination of the two companies' figures shows the following results for the year ending December 31, 1931:

	Company A Per Cent	*Company B Per Cent*
Ratio of Actual to Expected Mortality	98	64
Net Return on Investments	4.0	4.6
Per Cent of Premium Income Spent for Expenses	23	18

The comparison explains clearly why Company *B*'s policies showed a lower net cost than those of the other.[13] While general comments on surplus are likely to be misleading, it is worth noting that the surplus is 4.6 per cent for *B* as compared with 2.1 per cent for *A*.

Fraternal insurance. The only survivor of the old unscientific life insurance is the fraternal insurance association, and the day when even this statement can be made seems to be passing. Years ago, it was felt that reserves represented "unjust overcharges." The prejudice was fostered by frequent cases of mismanagement in the use and investment of the reserve funds. Fraternal societies entered the field in competition with the regular companies and set rates which were, in the majority of cases, inadequate. With the passage of time, the average age of their membership advanced and the inadequacy of the original rates became evident. The more nearly adequate the rate was, the longer was the period before the condition became apparent.

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[13] Net cost, that is, premium less dividend, for typical policies, may be ascertained in some states from the annual report of the Insurance Department. For more ready reference, see *Flitcraft's Compend* (Oak Park, Ill.: Flitcraft Life Insurance Works), an annual handbook devoted to rates, dividends, surrender values, and similar data of the various life insurance companies. Best's analyses furnish similar information.

A number of states have now passed an amended form of the "Mobile Bill" which requires that the fraternal societies compute what is the equivalent of the legal reserve liability.[14] The assets should be sufficient to equal this amount plus any other liabilities. While the law sometimes states that the valuation is not to be considered as "a test of the financial solvency of the society," any organization which shows a deficiency will have to increase its assessments or accumulate surplus from operations. Under the laws of some states, all societies must reserve the right to levy additional assessments in addition to their regular "rate."

Some societies have adopted the plan of raising their assessments, and others segregate their old members and start all new members in a separate group by themselves on a higher scale of assessments. With the increasing tendency to adopt the standards of regular legal reserve life insurance, any society unable to present a suitable balance sheet and other supplementary figures on operations should be regarded with skepticism. Their reports are usually found in the same sources as those of the ordinary companies. Their figures are not strictly comparable in all cases because many use different mortality tables (such as the *National Fraternal Congress Table*) and interest rate assumptions (such as 4 per cent).

Property insurance. In the purchase of property insurance, the first requirement is safety. Although faith in the companies as a whole is justified by their record, it is well to check over the financial position of a company, as well as to learn whether it has a satisfactory record for fair and prompt settlement of losses.

Of the various kinds of insurance companies protecting one from loss of property, fire insurance is the most important. There are many other kinds, such as automobile, burglary, public liability, credit, plate glass, sprinkler leakage, and workmen's compensation. These various kinds of insurance, other than fire and marine, are known as casualty lines, and are not written by the companies that write fire insurance. The life insurance business must be handled by a separate corporation. From the standpoint of statement analysis, these various types of insurance other than life insurance are similar. They are regarded as

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[14] Insurance Law of New York, Article VII, §242 (3). "The legal minimum standard of valuation for all certificates . . . shall be the *National Fraternal Congress Table of Mortality* . . . or a table based on the society's own experience of at least 20 years, and covering not less than 100,000 lives, with interest assumption not more than four per cent per annum."

taking a uniform risk throughout the life of the policy, whereas in life insurance the risk increases with advancing age.

Illustrative balance sheets. The accompanying composite picture of the financial condition of 329 stock and 142 advance premium mutual companies will serve to illustrate the following discussion. [15]

Liquid assets. An examination of the assets in these two balance sheets discloses much greater liquidity than would be shown by the assets of the life insurance companies. In both the above statements, the proportion of mortgage loans is relatively small. The statement by Mr. F. J. Cox, President of the National Association of Insurance Agents, gives the reason. This statement was made in a circular letter to the members of the association at a time when there was agitation to force the companies to invest in mortgages and to aid construction to relieve a housing shortage. He said:

> While doubtless many fire insurance companies would welcome the opportunity to invest some of their funds in mortgage loans on real estate, the very nature of fire underwriting requires assets of a more liquid character, so that, in cases of catastrophe, such as the San Francisco conflagration of 1906, which called for the payment of over $200,000,000 to policyholders, their money will be instantly available to meet housing situations infinitely more pressing than any obtaining in this country today.

Phrasing the matter more precisely, the investments of fire insurance companies are marketable rather than liquid. To be liquid, an asset should not only be convertible into cash on short notice—that is, marketable—but also should be free from large price fluctuations. Many fire insurance companies invest considerable sums in common stocks, which although marketable, often being more readily salable than bonds of considerably greater safety, are nevertheless likely to fluctuate widely.

It is possible that a company may carry as high as 10 per cent of its assets in cash. Such a high proportion is in contrast to that carried by the life insurance company, for which 5 per cent would appear so large as to cause comment.

Unearned premium reserve. The largest amount on the liability side of the balance sheet is the amount of unearned premiums, which is sometimes spoken of as the *reinsurance reserve.* If a one-year policy has run for four months up to the date of the balance sheet, one-third of the premium has been earned and

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[15] *The Insurance Year Book,* Fire and Marine, 1940, pp. xxvi, xxiii.

STOCK FIRE AND MARINE INSURANCE COMPANIES

COMBINED BALANCE SHEETS
As of December 31, 1939

Assets		*Per Cent*
Real Estate	$ 65,301,763	2.7
Mortgage Loans	33,225,803	1.4
U. S. Government Bonds	475,979,783	19.7
Other Bonds	437,139,259	18.1
Stocks	1,021,319,596	42.3
Cash	254,398,251	10.5
Agents' Balances	109,897,549	4.5
Miscellaneous Assets	18,347,479	.8
Total Admitted Assets	$2,415,609,483	100.0
Liabilities		
Losses Unpaid	$ 102,024,719	4.2
Unearned Premiums:		
Fire	525,673,844	21.8
All Other	192,994,660	8.0
Other Liabilities	74,059,054	3.0
Voluntary, Contingency, & Special Reserves	54,564,539	2.3
Total Liabilities	$ 949,316,816	39.3
Statutory Deposit	18,500,000	.8
Capital Paid-Up	323,499,236	13.4
Net Surplus	1,124,293,431	46.5
Total	$2,415,609,483	100.0

* * * *

MUTUAL FIRE INSURANCE COMPANIES

COMBINED BALANCE SHEETS
As of December 31, 1939

Assets		*Per Cent*
Real Estate	$ 15,324,033	7.2
Mortgage Loans	10,798,598	5.1
U. S. Government Bonds	53,754,780	25.4
Other Bonds	63,140,824	29.7
Stocks	25,013,851	11.8
Cash	30,448,044	14.4
Premiums Uncollected	10,336,047	4.9
Miscellaneous Assets	3,125,631	1.5
Total Admitted Assets	$ 211,941,807	100.0
Liabilities		
Losses Unpaid	$ 8,553,431	4.0
Unearned Premiums:		
Fire	59,225,591	28.0
All Other	13,462,826	6.3
Other Liabilities	8,216,238	3.9
Voluntary, Contingency, & Special Reserves	5,995,577	2.8
Total	$ 95,453,663	45.0
Guaranty Fund	9,132,080	4.3
Net Surplus	107,356,064	50.7
	$ 211,941,807	100.0

two-thirds is unearned. A liability equal to two-thirds of the premium will consequently be shown. Except when a company has shown an unusually injudicious assumption of risks, it will be able to turn over its risks, such as the liability for the unexpired eight months on the above policy, to another company and reinsure for an amount not greater than this unearned premium liability.

In a sense, the unearned premium liability is overstated, in that the calculation is based upon the entire premium charged (less reinsurance in case a part of the risk is reinsured in some other company), without any allowance for acquisition cost, management, and overhead expense—practically all of which is met at the time the policy is written. Thus, if on November 30 $12,000 worth of premiums was received for one-year policies, then on December 31 the unearned premium liability would be $11,000.

If it is assumed that 40 per cent of the premiums was used for commissions and other expenses, a partial statement of this business would appear with a deficit, even if no fire losses had occurred, as follows:

Assets		*Liabilities*	
Cash (or investments)	$ 7,200	Unearned Premiums	$11,000
Deficit	3,800		
	$11,000		$11,000

From an academic standpoint, the correct method would have been to subtract the loading from the premium income and take eleven-twelfths of the remainder as the unearned premium liability. As a practical matter, the standard form of fire insurance policy so reads as to make the actual method of calculation the necessary method, since it provides that "when the policy is canceled by the company, it shall retain only the *pro rata* portion of the premium." The point made, however, as to the technical overstatement of liability is of importance when successive balance sheets of a company whose volume of business is changing considerably are being compared. A rapidly growing company would appear in an unfavorable light because of this factor.[16]

[16] Alfred M. Best has been quoted as follows: "One great company added in the year 1920 $8,000,000 to its unearned premium liability, and reported in consequence an underwriting loss of about $1,800,000. It had no choice under the law, but was obliged to make up its accounts on that basis, for which reason it would be absurd even to suggest that its officers were guilty of manipulation of its figures in order to conceal profits. Yet, the underwriting operations of that

During a period of decreasing business, the fact that losses and expenses should be less than the unearned premium liability that is being wiped out should tend to improve the surplus position. The influence of this factor will be considered again later in the discussion of book value and earnings analysis.

Policyholders' margin of safety. After the total of this unearned premium liability and the debts of the company, there will appear the capital stock and the surplus. The surplus, or surplus plus capital stock, as the case may be, is the margin of safety for the policyholders, and is often spoken of as the "surplus as to policyholders." The combined balance sheets used above show the relative proportions of this surplus in the case of the stock and the mutual fire companies.

Loss ratios. To complete the study of a company, it is necessary to examine the earnings and expenses. The cash statement showing premiums written and expenses and losses paid is unsatisfactory. Ratios constructed from these figures are likely to be misleading, for receipts and disbursements are not necessarily the same as earnings and expenses. While the report may give only the former data, one can usually calculate the actual premiums earned and the expenses and losses incurred; from these figures, the loss ratio and the percentage of the premium income absorbed by running expenses are obtained. Loss expenses which are incurred in the settlement of insurance losses, such as the cost of adjusters, are usually combined with the amounts actually paid to those insured in the computation of the loss ratio.

The combined figures for fire losses incurred in the United States for all stock companies are shown in the following table as percentages of premiums earned. The influence of depression is seen in the rise of the loss ratio in the early 1930's.

Because so much of the expense is incurred at the time of the writing of the policies, it is common practice to study the ratio of expenses to premiums written during the period. There has been a tendency for the expense ratio to rise over the past two decades. It has been due to reduced fire hazard and lower premiums rather than to inefficiency. The average premium

company, considered from the standpoint of the stockholders, were highly profitable during the year in question, because, as a practical business fact, the company under normal conditions, and, barring the possibility of a great conflagration, will never require anything like $8,000,000 to meet the losses under the policies, the writing of which resulted in the $8,000,000 increase of its unearned premium account." (*Journal of Commerce,* July 21, 1921.)

LOSS AND EXPENSE RATIOS FOR FIRE INSURANCE BUSINESS IN THE UNITED STATES: 1929–1940 [17]

	Losses Incurred to Premiums Earned *Per Cent*	Expenses to Premiums Written *Per Cent*
1929	47.0	46.3
1930	51.6	48.0
1931	52.5	46.9
1932	53.8	48.7
1933	44.0	47.9
1934	43.7	47.3
1935	40.4	47.9
1936	45.8	47.5
1937	45.9	46.4
1938	46.7	48.4
1939	46.8	47.6
1940 (estimated)	49.0	46.3

per $100 of insurance was $1.05 in 1921, $0.86 in 1930, and only $0.67 in 1939.[18]

Calculation of true earnings. When a loss and gain statement is lacking and only the cash receipts and disbursements are reported, the earned premium income may be calculated with the aid of the balance sheets as follows:

Premiums Written During Year	$ 4,351,000
Add Unearned Premium Liability Beginning of Year	12,355,000
Total	$16,706,000
Deduct Unearned Premium Liability End of Year	6,232,000
Premium Income Earned During Year	$10,474,000

The unearned premiums at the beginning of the year must be carried forward to help bear the losses of the current year, and so are added to the premiums that come in during the year. At the end of the year, whatever amount is unearned must be deducted and carried forward to bear the losses and expenses of the ensuing year.

Similarly, the figure for losses and expenses *paid* during the year can be used as a basis for learning the actual losses and expenses *incurred.* The method of finding expenses incurred would be to add the expenses paid during the year to the prepaid

[17] *Best's Insurance Reports,* Fire and Marine, 1941, p. ix.
[18] *Ibid.,* p. xi.

expenses and subtract the accrued expenses at the beginning of the year. From this amount, the prepaid expenses at the end of the year would be deducted and accrued expenses added. When the amounts of premiums earned and losses and expenses actually incurred are known, the operating section of the profit and loss statement is virtually reconstructed.

In addition to the profits from operations, if there are any, there will be the income from the investment of the company's funds. This other income explains why it is possible for many companies to operate profitably in spite of a narrow margin of operating profit. The major factor, however, which determines the profitableness of the fire insurance business in a given year is the loss ratio, sometimes known as the "burning ratio," which is the per cent of premium income consumed by fire losses. It is worth noting that in some lines of insurance the major portion of operating costs consists not of losses but of expenses, the former being relatively small. This situation is illustrated in the case of steam-boiler insurance, the loss from boiler explosion being relatively rare and the costs of regular inspection consuming the major portion of the premium.

BOSTON MANUFACTURERS' MUTUAL FIRE INSURANCE COMPANY

INCOME ACCOUNT
For the Year Ended December 31, 1940

Premiums Earned		$2,579,544
Losses	$380,323	
Underwriting Expenses	413,196	
Underwriting Profit and Loss Debits	1,656	795,175
Net Underwriting Gain		$1,784,369
Net Interest and Rents Earned	$206,827	
Realized Loss on Investments (net)	*37,721*	
Increase in Value of Investments (net)	24,306	
Gain from Investments		193,411
Combined Gain from Underwriting and Investment		$1,977,780
Dividends to Policyholders		2,204,316
Decrease in Surplus		$ 226,536

Very often such loss and gain statements for the factory mutuals show losses much smaller than the underwriting expenses. This condition is due to the methods of the manufacturers' mutual companies, which have developed high-grade inspection of factories and the compulsory removal of many fire hazards. These companies were originally organized by manufacturers

who were obliged to pay prohibitive rates because of the extreme hazards incident to the unskillful construction and plan of operation of their plants. The ratio of losses and expenses to premiums is low, a characteristic of many mutual companies which charge more than similar commercial stock companies and then make a large refund in the form of a "dividend" at the end of the year. By conservative dividend policies, many mutual companies have been able to accumulate surpluses which compare favorably with the net worth of the stock companies.

Scientific rate-making. Expenses can be estimated in advance with a fair degree of accuracy. Losses are a more difficult matter in spite of the skill applied to the problem. In the case of fire insurance premiums, the rates are calculated for the majority of the companies by a co-operative organization known as the Board of Fire Underwriters. The co-operation of companies through this board has led to the false charge that there is a monopoly in fire insurance. The careful investigation of risks by the "underwriters" makes possible a scientific rate, that is, a rate which is the result of a careful analysis of the various hazards to which a given property is exposed. The insured can find out the exact basis for his rate if he desires, and frequently can reduce this rate by eliminating some of the factors that increase the fire hazard.

Moral hazard. There are two types of hazard or risk so frequently mentioned that they must be understood in order fully to appreciate the profit and loss figures. They are moral hazard and conflagration hazard. Moral hazard is the risk that arises from the possibility of the insured himself causing a loss in order to collect insurance from the company. In the case of burglary or theft insurance, the insured might pretend a loss to recover from the company. When prices and property values decline, the fire insurance companies find that their loss ratio rises. The owner wishes to dispose of his property, and it occurs to him that his property has declined below the amount of his insurance. Since the policy in most states protects only against the loss of the market value of the property at the time of fire, such an attempt on the part of the policyholder ordinarily requires not only arson but also the placing of a fraudulently high value on his property.

The high correlation between the fire loss ratio and business conditions, losses being low in prosperous years and high in de-

pression years, indicates that a large part of the fires in the United States are the result of moral hazard.[19]

Conflagration hazard. The conflagration hazard is the risk of an unusually disastrous fire affecting an abnormal proportion of the company's policyholders. Any casualty which produces a loss of $1,000,000 or more is regarded as a conflagration. The San Francisco disaster in 1906 was an unusually serious conflagration. The individual company can protect itself from this hazard only by carefully distributing its risks over a large area. It is the same principle of distributing risk that causes a company when it writes an unusually large policy to reinsure a portion with other companies.

Mutual fire insurance. While most fire insurance is sold by stock companies, the local mutual fire insurance company has succeeded by bringing together owners of dwellings and farm buildings who are acquainted. Such a situation has meant an unusually low moral hazard. If the dwellings are located so that they may be swept by a single fire, the company may be eventually bankrupted by a conflagration. The only mutual fire insurance companies besides the local mutuals which have had any considerable success in this country are the factory mutuals. The success of the latter, as has been stated, has been notable, owing to the strict enforcement of fire-prevention rules.

Generally, the purchaser of insurance can determine whether the rates quoted are too high by making comparisons between companies. An exception must be made for mutual companies. Those which are more conservative follow the practice of collecting an advance premium considerably in excess of the amount required to pay losses and expenses, thus providing against the need for an assessment in the event of unusual losses. The insured receives back the excess at the end of the year in the form of a "dividend," but since he has lost the use of the funds, an allowance for interest should be added to the net cost obtained by subtracting the dividends from the original premiums. Thus, a mutual charging a premium of $100 might pay a 40 per cent dividend at the end of the year, making the nominal net cost

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[19] A chart of the ratio of losses incurred to premiums written for the period 1860–1931 shows this vividly, and if the spread between losses in good and bad times can be attributed to willful burning, the moral hazard is extremely important. (*Annual Proceedings of the National Board of Fire Underwriters*, 1932.) See table on page 465 above for recent data.

$60. But the use of $40 has been lost for a period of a year, and if the use of the money is assumed to be worth 5 per cent, an addition of $2 is necessary, making the true net cost $62. It is essential, moreover, in choosing a company with a desirable premium rate, to select one which is financially sound. An analysis of the company's record should reveal:

1. What margin of safety has been provided in the way of a surplus of assets over the unearned premiums and other liabilities. The quality of the assets needs to be checked in order that it may be determined whether or not the surplus shown is authentic.
2. Whether premiums have been substantially sufficient to cover expenses and losses in the past. A small deficit need not be dangerous if surplus is adequate or if investment income is present to offset the underwriting loss.
3. Whether the company has had a sufficient experience to justify confidence in its management.

Analysis by comparison. If the company can satisfy on these points and can quote rates as low as or lower than its competitors, the prospective policyholder may be satisfied.

The publishers of one insurance information service, Charco Charts, prepare balance sheet and other financial data for twenty leading insurance companies as a standard of comparison for individual companies.[20] Percentage balance sheets provide a method for quick examination, such as a banker might find useful in making decisions as to the acceptability of insurance offered by borrowers on pledged property, where the main concern is financial strength. Such material would be a useful first step in surveying the companies but would need to be supplemented by more attention to detail and a thorough study of earnings and general tendencies.

Two average percentage balance sheets for twenty leading fire

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[20] Charco Charts are published by Reviewers Chart Corporation, 41 Park Row, New York, N. Y. (Aggregate data and percentage analysis for individual companies may also be found in *Best's Fire and Casualty Aggregates & Averages.*) In addition to percentage balance sheet comparisons, there are comparative ten-year charts showing total assets and total liabilities, premiums written and losses paid, and policyholders' surplus and capital. There is also a pie-chart of sources of income (underwriting and investment income, surplus credits) and its distribution (dividends to policyholders and stockholders, surplus debits, and surplus increase). State insurance department audited figures, which are often more conservative than initial figures released by the company, are employed.

and marine and twenty leading casualty and surety companies are reproduced here.

AVERAGE OF 20 LEADING FIRE & MARINE COMPANIES
BALANCE SHEETS

December 31, 1940

Assets		*Liabilities*	
Cash	12%	Loss Reserves	6%
Bonds:			
Gov. 19%, P.U. 3%, State 1%,		Unearned Premiums	34%
Mun. 4%, R.R. 3%, Misc. 1%	31%	Commissions, Expenses, etc.	0%
Stocks:		Taxes	2%
Ins. 18%, R.R. 3%, P.U. 6%,		Dividends	1%
Misc. 20%	47%	Miscellaneous	0%
Real Estate	3%	Voluntary Reserves	3%
Mortgage Loans	1%		46%
Collateral Loans	0%	Capital	12%
Total Invested Assets	94%	Surplus	42%
Interest Due & Accrued	0%	Total	100%
Premiums Under 90 Days	5%		
Other Assets	1%		
Total Admitted Assets	100%	Surplus to Policyholders	57½%

AVERAGE OF 20 LEADING CASUALTY & SURETY COMPANIES
BALANCE SHEETS

December 31, 1940

Assets		*Liabilities*	
Cash	17%	Loss Reserves:	
Bonds:		W.C. 16%, A.&H. 1%, Liab.	
Gov. 34%, P.U. 4%, State 1%		17%, F.&S. 3%	39%
Mun. 3%, R.R. 5%, Misc. 3%	50%	Unearned Premiums, (Extra	
Stocks:		Non-can., 0%)	22%
Ins. 4%, R.R. 1%, P.U. 3%,		Commissions, Expenses, etc.	2%
Misc. 10%	18%	Taxes	2%
Real Estate	4%	Dividends	0%
Mortgage Loans	1%	Miscellaneous	1%
Collateral Loans	0%	Voluntary Reserves	8%
Total Invested Assets	90%		74%
Interest Due and Accrued	1%	Capital	4%
Premiums Under 90 Days	8%	Surplus	22%
Other Assets	1%	Total	100%
Total Admitted Assets	100%	Surplus to Policyholders	34%

The usual ratios given most emphasis for this type of study are:

1. Cash + Bonds to Loss Reserves + Unearned Premiums.
2. Cash + Government Bonds to Loss Reserves + Unearned Premiums.
3. Cash +Bonds to All Liabilities (excludes net worth).

It is interesting to compare the two types of companies on these three points:

	Fire & Marine	*Casualty & Surety*
Test No. 1. Cash + Bonds	43%	67%
Loss Reserves + Unearned Premiums	40	61
Ratio	1.07	1.10
Test No. 2. Cash + Governments	31%	51%
Loss Reserves + Unearned Premiums	40	61
Ratio	.77	.84
Test No. 3. Cash + Bonds	43%	67%
All Liabilities	43	66
Ratio	1.00	1.02

The original balance sheet percentages show the fire companies to have the more substantial stockholders' equity in relation to liabilities while these three ratios, which stress the more stable, liquid assets and eliminate stocks, real estate, and mortgages, show very similar position. The former and more conventionally used relation of liabilities and net worth ignores the qualitative aspect stressed by the latter ratios. The implication is that stocks, which fluctuate greatly, and real estate and mortgages, which are unliquid, are not suitable support for insurance liability in these fields. As indicated by the balance sheets, unliquid assets are generally avoided. It is widely felt that stocks should not exceed the surplus, so that their price fluctuations will neither endanger solvency nor even impair capital stock.

Analysis for the stockholder. While policyholders are primarily concerned with statements to determine the company's solvency, the stockholders are chiefly interested in earning power, with "liquidation" value receiving some attention. Reported earnings require adjustment whenever the volume of premium income grows or declines from year to year. The effect of setting up a liability for unearned premiums equal to the full unexpired portion must be allowed for in the fire and casualty field because so much of the underwriting expense, or loading factor, is spent at the time the policy is written. In fire insurance, it is customary to estimate 40 per cent of the premium as sufficient to cover acquisition costs and 60 per cent as adequate to cover fire losses and such minor running expenses as may have to be met during the life of the policy. The characteristic adjustment of reported earnings to allow for the "overstatement" of the unearned premium liability (and so the understatement of earned premium income) is to add 40 per cent of any increase in that liability during the year to the reported net profits.

In a year in which the liability decreased, 40 per cent of that decrease would be subtracted to estimate the true earnings for the year. More particularly, this adjustment applies to the underwriting, or operating, section of the income statement, and so should be used on that section. A roughly equivalent device sometimes employed is to supplement the comparison of *earned* premiums with expenses and losses *incurred* (on an accrual basis) by making a comparison of the premiums *collected* (cash) with the expenses for the year. Thus, if a newly started company wrote $1,000,000 of premiums and was obliged to spend 40 per cent on commissions and other acquisition costs, a normal relation would appear in a comparison of expenses with premiums collected, If, however, only one-half, or $500,000, of the premiums expired, or were earned, during the year, while the other half were set up as a liability, the ratio of expenses to the *earned* premium income would show the extremely high figure of 80 per cent. The illustration is extreme but indicates the necessity of an adjustment when a large change in the volume of premiums takes place.

The ratio of losses from fire and other hazards plus underwriting expenses to the premium income not infrequently equals or approaches 100 per cent. This operating ratio leads to the popular but inaccurate statement that no profit is made on the insurance business but only on the investments of the company. The statement ignores the fact that the premiums paid in advance supply much of the funds which are invested to produce the investment income. The combined balance sheets given above show more than half of the assets supplied by the policyholders. If the relation of liabilities to stockholders' net worth were exactly fifty-fifty, and if it were further assumed that the assets earned a 5 per cent return in investment income while premium income just covered all underwriting losses and expenses, then the stockholders would earn twice 5 per cent, or 10 per cent, on their net worth. The operations which bring in the funds to increase so considerably the rate of return upon stockholders' investment can hardly be regarded as profitless even though the operating section shows no net return.

The analysis of the investment income is a study of the performance of the investment portfolio, which often includes common stocks as well as bonds. Investment in the latter is made possible by the substantial net worth which guards the liability to policyholders. A desirable limitation would be for common

stocks not to exceed net worth, so that liabilities would be supported by bonds and other assets less subject to price fluctuation. A more conservative standard would place the maximum limit at the surplus figure, so that not only the liabilities but also the par value of the insurance company's stock might be guarded against impairment.

The favorable rate of return upon stock investments held by fire insurance companies during the first three decades of the present century has done much to popularize stock investments generally.[21] Because of the possibility of obtaining the benefits of investment diversification indirectly through fire insurance companies with a long and well-known record, fire insurance stocks have been regarded as a kind of investment trust, the hazards of underwriting being ignored, at least during good times.

Balance sheet values as well as earnings are given weight in the analysis of an insurance stock. The readiness with which asset values, consisting so largely of listed securities, may be checked against market prices explains this emphasis. Instead of book value, so-called "liquidation value" is ordinarily employed. The latter figure is obtained by first adding to (or subtracting from) the book net worth any security appreciation (or depreciation) resulting from market fluctuations which is not already reflected in the asset figures. To this net worth based on market values is added that proportion of the unearned premium liability which is believed to be in excess of the amount actually needed to meet future losses, 40 per cent being the fraction ordinarily used for fire insurance companies.

In order to make the foregoing technique for estimating "liquidation value" applicable to other lines of property insurance, or to allow for possible changes in the ratios with the passage of years, a more general rule might be developed. The use of the 40 per cent rule is due to the expectation that 60 per cent of the unearned premiums will cover all future losses, the expenses being substantially met at the time the premium is written. So instead of 40 per cent, in any given situation, the

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[21] For the comparative record of bond and stock earnings for some leading fire insurance companies, see Rose, Dwight C., *The Practical Application of Investment Management* (New York: Harper and Brothers, 1933). The original edition of this book, entitled *A Scientific Approach to Investment Management* (New York: Harper and Brothers, 1928), has been regarded as one of the most forceful arguments for common stocks.

proper per cent to use would be the amount by which 100 per cent exceeds the customary loss ratio.[22]

By drawing an analogy between fire and life insurance, it has been suggested that the book value of the stock of the latter should also be increased by some percentage, say 40 per cent, of the reserve liability to give a liquidation-value figure. It is pointed out that, typically, such companies experience mortality losses equal to but 55 or 60 per cent of the figure for which the premium rates provide. This argument overlooks the fact that much or all of this gain is returned to the policyholders in the form of dividends upon participating policies, which even stock companies may issue. With nonparticipating policies, the stock company finds it necessary to lower its premium rates to such an extent that approximately the same result is achieved; otherwise, such policies would not be readily salable. The benefits which any individual stock company derives from underwriting activities are best discovered by a study of the return earned upon net worth, allowance being made for a nominally high expense ratio, as was previously explained, where a company is engaged in expansion by acquiring an unusual proportion of new business.

Conclusion. In the analysis by policyholders of the statements of life insurance companies and of those protecting against property losses, there is a difference in emphasis. In connection with the life insurance companies, primary interest lies in the character of the operations—the mortality, the interest returns, and the expense ratio. Efficiency of operation results in low-cost insurance, since net cost is dependent upon savings effected and the amount of returned dividends. The balance sheet, while of interest as showing the degree of investment diversification and the general soundness of the company, is clearly secondary in importance. For companies offering protection against fire and casualties, however, the earnings are incidental, and the indications of safety recorded in the balance sheet are of first importance.

This difference is due to the fact that, in the former class, the policyholder is usually a part owner, through his mutual policy, and has engaged in a long-term contract, where operating results

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[22] Best suggests 40 per cent of Unearned Premiums for directly written and 35 per cent for reinsurance premiums in the fire and marine field; a 15 to 40 per cent equity in the unearned premiums in the casualty and surety field. *Best's Fire and Marine,* 1941, p. xii; *Best's Casualty and Surety,* 1941, p. xi.

are likely to have considerable bearing on final results, while in the latter class the policyholder is ordinarily a creditor, and his contract is for so brief a period that a balance sheet is a sufficient measure of his safety.

The analysis of an insurance stock, however, requires an investigation of the earning power as well. This work involves a dual study: first, that of the underwriting activities, and second, that of the investment activities. An appreciation of the peculiarities of the business is important in the interpretation of both earnings statements and the balance sheet, as is indicated by the unusual significance of the operating ratio and the common use of "liquidation value" as well as book value.

CHAPTER XVIII

Holding Companies

Nature of the holding company. In the strict sense, a holding company is a corporation which controls one or more corporations through the ownership of a majority of the shares of their voting stock. In popular parlance, the ownership of enough stock, even though considerably less than a majority, if sufficient to give working control, is regarded as justifying the use of the term "holding company." Minority control is an uncertain thing, and so whenever a precise and objective standard is wanted, as in most accounting, legal, and financial discussions, the first concept is used.[1] The holding company is also spoken of as the "parent" company when it has been instrumental in the formation of the controlled corporation. The latter is referred to as a "subsidiary," or "constituent," company. The corporations related in the holding company system are also called "affiliated" companies, although the word *affiliated* is quite widely used to cover situations in which the control, or the substantial control, of two or more corporations is held by the same interests.

Wherever it is desirable to unify a group of corporations, the easiest method is to acquire a controlling stock interest in these corporations and have these blocks of stock owned by the holding company. To purchase the properties and dissolve the individual companies might be very inadvisable, as it might result in the loss of valuable goodwill. Moreover, such a step might be more difficult to accomplish, since it would require the agreement of a larger per cent of the stock; for example, in New York state the consent of two-thirds of the stock is required before the assets of a corporation may be sold, and even a small dissenting minority may create difficulties.

Purposes of the holding company. Because of the relative facility with which the holding company relationship may be

[1] However, the Public Utility Holding Company Act of 1935 defines a utility holding company, for the purpose of placing it under the jurisdiction of the Securities and Exchange Commission, as one holding 10 per cent of the voting securities, unless the Commission declares otherwise.

formed, it is customary to think of it primarily as a device for effecting combinations. Its merits as compared with outright fusion or merger may be stated here so that the possible motives for its use, as financial statements show it being employed in various fields, may be better appreciated. Since the following comparison has to do only with the relative merits of the holding company as a form of organization, the desirability of combination and large-scale operation is not mentioned. Should the hoped-for advantages of combination fail to appear, the grouping can be broken up more readily under a holding company arrangement than when properties and operations have been mingled in a single corporation by merger.[2]

The general advantage of a holding company system over a complete merger of the affiliated companies is that combination is achieved by it and yet the individuality of the various constituents is preserved. More specifically, the chief advantages of the former are:

1. *Financial.*

a. It saves the costs and difficulties attendant upon outright merger.

b. The holding company is not liable for the debts or other obligations of subsidiaries.

c. Relative ease in keeping separate and discontinuing an unprofitable business.

d. Keeping various units in separate corporate compartments makes possible the continued financing and expansion of those which are profitable in spite of the weaknesses of the others.

2. *Administrative.* From the standpoint of administration, the single operating company is the more useful if highly centralized responsibility is desired. The use of subsidiaries facilitates decentralization, for the executive officers of a subsidiary corporation are likely to regard their responsibility as greater and their power to initiate and execute policies larger than they would if they were only divisional heads. Factors which would

[2] Thus, in 1933, Drug, Incorporated, decided that its subsidiary properties would be more profitably operated as unrelated units, and proceeded to dissolve by segregating them and distributing among its stockholders holdings in United Drug, Inc., Sterling Products, Inc., Vick Chemical, Inc., Bristol-Myers, Inc., and Life Savers Corporation. Note also the comparative ease with which the utility holding company systems are dismembered under the Public Utility Holding Company Act.

favor decentralization, and, therefore, the holding company form of organization, would be:

a. Different lines of products, particularly those which require different methods of marketing or of operation, and so management with different types of experience.

b. Differences in territory which create special problems that are best handled by local executives.

c. Competition of the sort that frequently gives rise to nonroutine problems that require prompt action and are best handled by a decentralized system.

3. *Legal.*

a. It permits the isolation of business subject to regulation and special accounting publicity, thereby simplifying the problem. This advantage is most important when the system undertakes a variety of business lines.

b. It permits the formation of units to do business in states or countries where "foreign" corporations suffer from adverse legislation or taxation.

4. *Public Relations.* It permits individual business units to retain valuable goodwill which might be lost in a merger.

The major disadvantage inherent in the holding company system is the increased taxation and the other expenses of maintaining a number of corporate organizations. The device has also lent itself to such abuses as (*a*) unsound financing, it being easier to build a highly speculative pyramid with a complex system of companies than with a single operating company; (*b*) the mulcting of companies by devious intercompany arrangements; and (*c*) the concealment of financial conditions through the complexities of holding company accounts

The actual uses of the holding company arrangement may be found illustrated in any number of our major corporations in virtually every field. The United States Steel Corporation has subsidiaries representing the various stages of production from unmined coal and iron ore to the various finished steel products, and separate companies for various types of products.[3] General Motors Corporation manufactures its various kinds of passenger cars in plants directly owned, and in recent years has merged certain accessory and household appliance subsidiaries. Sepa-

[3] See the organization chart of the United States Steel Corporation in Haney, L. H., *Business Organization and Combination* (New York: Macmillan Co., 3rd ed., 1934), opposite p. 262.

rate subsidiaries are used, however, (*a*) to conduct foreign production (such as General Motors of Canada, Ltd.), (*b*) to conduct lines which supplement the merchandising of its products, such as financing, insurance, and accounting (for example, General Motors Acceptance Corporation and General Exchange Insurance Corporation), and formerly (*c*) to own real estate for other than plant purposes (for example, General Motors Building Corporation and Modern Housing Corporation). The similar use of subsidiaries may be found among other large industrial corporations, such as Allied Chemical and Dye Corporation, E. I. du Pont de Nemours and Company, and Standard Oil Company of New Jersey.[4]

Among the railroads, the purchase of stock has often been the first step in a course leading eventually to complete consolidation. So, at any given time, many of the major railroads will be found to be both operating and holding companies. With the advent of the Transportation Act of 1920, the Interstate Commerce Commission was given the power to regulate the acquisition of railroads by other operating companies. The holding company, a purely financial unit owning no physical operating property and so not subject to the Commission, made it possible to avoid the regulation imposed by the Act until recently. The Alleghany Corporation and the Pennroad Corporation were pure holding companies of this type.[5]

The most astonishing growth in the use of the pure holding company has taken place in the public utility field. In 1930, nineteen leading holding companies, controlling chiefly electric and gas properties, had consolidated capital structures totaling $12,763,000,000.[6] Nine of these were reputed to be controlled

[4] For a list of prominent industrial holding companies, see Bonbright and Means, *The Holding Company* (New York: McGraw-Hill Book Co., 1932), pp. 77 and 78.

[5] The place of the Alleghany Corporation in the Van Sweringen System (1930) and that of the Pennsylvania Company and the Pennroad Corporation in the Pennsylvania Railroad System (1930) appears in charts in Bonbright and Means, *The Holding Company* (New York: McGraw-Hill Book Co., 1932), pp. 261 and 265. Section 202 of the Emergency Railroad Transportation Act of 1933 provided that the Interstate Commerce Commission should restrict voting power where railroad stock is so held as to give control to another carrier or to those who control other carriers in a manner contrary to the consolidation plans of the Commission.

[6] Consolidated capital structure proportions of these leading systems for 1930 are reported in *Chicago Journal of Commerce*, Dec. 30, 1931. For a discussion of the development of some of these companies, see Bonbright and Means, pp. 90 *ff.*

through substantial minority holdings by United Corporation and the Electric Bond and Share Company. This remarkable concentration of ownership was furthered by two important economic factors: (1) the greater financial strength of a large utility system in comparison with a small property, and (2) the efficiency and economy of centralized management, which can give highly trained technical service to a large number of companies that could not individually support such an expensive staff on a full-time basis.[7] Other influences were also present: (1) the desire of engineering and manufacturing groups to control properties to which they could sell services and equipment, (2) the similar wish of investment bankers to control systems in order to obtain the profits from selling their securities, (3) the profits to promoters creating these combinations, and (4) the ease with which large investments can be controlled through a relatively small investment by means of the holding company form of organization.

A classic example to illustrate the last point has always been the former Rock Island Company. The ownership of $25,000,000 of the preferred stock of that company gave the control of railroads with a capitalization of approximately three-quarters of a billion dollars (1906).[8] The utility holding companies offer a number of current examples of the control of large systems through the ownership of relatively small amounts of stock by the chief holding company. Companies like American Power and Light Company, Middle West Corporation, Standard Gas and Electric Company, and United Light and Power Company serve to illustrate the point.[9]

Legality and monopoly. Although the holding company cannot be chartered in a few states, where it is considered illegal, the leading industrial states permit its existence. Since it is so

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[7] That these advantages can be overstressed is suggested by M. H. Waterman's study, *Financial Policies of Public Utility Holding Companies* (University of Michigan, 1932), pp. 2 *ff.*

[8] In 1907, the system began to grow smaller. Ripley exaggerates the scale of the pyramid by taking the controlling stock interest at a *market* value of $5,000,000 while leaving the controlled capitalization at *par* of $1,500,000,000, and by including in the latter figure the duplicate capitalization of the pure holding companies. Ripley, W. Z., *Railroads: Finance and Organization* (New York: Longmans, Green & Co., 1915), p. 531. For a chart of this system, see Haney, L. H., *Business Organization and Combination* (3rd ed., 1934), p. 256.

[9] For other concrete illustrations, see Waterman, *Financial Policies of Public Utility Holding Companies,* Chap. 3, and Bonbright and Means, *The Holding Company,* Chap. 5.

largely a financial device, it is usually incorporated in some state such as Delaware, where taxes and corporation laws are favorable. In a jurisdiction where "foreign" corporations are subjected to special burdens, the effects of such laws may be limited by the formation of a special subsidiary to conduct operations there.

The threat against the holding company is due not to anything inherently illegal in its nature, but to the possibility that it may be used for an unlawful purpose. Because it facilitates combinations, it may in specific cases run counter to the Federal anti-trust laws.

The Sherman Anti-Trust Act was enacted by Congress in 1890 to do away with combinations that acted "in restraint of trade." The Clayton Act was passed as an amendment, in 1914, to increase the effectiveness of the former act. A number of unfair business practices which would tend to reduce competition were forbidden, and stockholdings the effect of which would be "substantially to lessen competition or to tend to create a monopoly" were specifically prohibited.

Industrial holding companies have been dissolved when adjudged to have effected an unlawful combination. In the utility field, however, monopoly has been permitted and regulated; hence, the advent of the holding company has not reduced competition, although it has created the complexity of the regulatory problem by creating new and sometimes disturbing intercompany relationships. That there are advantages other than monopolistic control to a business that combines with others is explained in the following statement made in one of the annual reports (1913) of the Standard Gas & Electric Company.

In not one single instance does the Standard Gas & Electric Company control subsidiaries which are natural competitors. Its subsidiaries in every case are located in different municipalities and so situated that competition, one with the other, is an impossibility. In other words, there is no element of a trust or monopoly as defined by the anti-trust laws in the situation of Standard Gas & Electric Company. Holding companies in the utility field have so thoroughly demonstrated their great advantages, in the way of economical management and facilities for financing, over those possessed by isolated local utility companies that it is hardly within the realm of possibility that any serious attack will ever be made upon them.

Through combination, the subsidiary companies may be financed from the proceeds of a single large issue of securities by the parent or holding company. The investor not only has a security of increased marketability, but obtains the increased

safety which comes from investment in a number of widely separated properties. The administrative advantages have already been suggested.[10] In spite of these merits, it appears that the Security & Exchange Commission will require that the electric utility holding company systems be broken up, except where the subsidiaries form a single integrated system.

Difficulties with statements. A chief difficulty in studying the holding company lies in securing satisfactory financial statements. From a legal standpoint, the holding company is but an investor in certain stocks. The asset side of its balance sheet would show little more than "Investments," and the income would be "Income from Securities," except when the holding company operates properties directly owned. Practically, this network of corporations should be viewed as a single unit. Herein lies the purpose of consolidated financial statements.

The case has been stated in the following terms in the regulations promulgated under the former Federal income tax law:

> The provision of the statute requiring affiliated corporations to file consolidated returns is based upon the principle of levying the tax according to the true net income and invested capital of a single business enterprise, even though the business is operated through more than one corporation. Where one corporation owns the capital stock of another corporation or other corporations, or where the stock of two or more corporations is owned by the same interests, a situation results which is closely analogous to that of a business maintaining one or more branch establishments. In the latter case, because of the direct ownership of the property, the invested capital and net income of the branch form a part of the invested capital and net income of the entire organization. Where such branches or units of a business are owned and controlled through the medium of separate corporations, it is necessary to require a consolidated return in order that the invested capital and net income of the entire group may be accurately determined. Otherwise, opportunity would be afforded for the evasion of taxation by the shifting of income through price-fixing, charges for services, and other means by which income could be arbitrarily assigned to one or another unit of the group. In other cases, without a consolidated return, excessive taxation might be imposed as a result of purely artificial conditions existing between corporations within a controlled group.[11]

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[10] An excellent statement of the economics of the holding company may be had in the brief submitted on the behalf of public utility holding companies to the Interstate Commerce Committee of the United States Senate, in the matter of Senate Bill No. 4160. Reprinted in C. W. Gerstenberg's *Materials of Corporation Finance* (New York: Prentice-Hall, Inc., 1924), p. 570.

[11] Regulations 45 relating to the income tax under the Revenue Act of 1918, Article 631, "Affiliated Corporations." More recent regulations condense this statement. Under the current law, only railroads are allowed to render a consolidated return for income tax purposes; other corporations may for excess profits tax returns, when 95 per cent ownership exists.

That the problem is by no means a domestic one is shown by the following excerpt from a letter from the Council of the Association of British Chambers of Commerce to the President of the Board of Trade pleading the urgent need for the amendment of the Companies Act of 1929, sometimes held up as a model for American action:

> The figures relating to company registrations during the last few years show an enormous growth in the number of subsidiary companies, and the majority of important public companies have adopted the subsidiary company principle to such an extent that their balance-sheets are frequently useless as a guide to the true position of the company. In a number of cases the profit and loss accounts issued to shareholders are useless and misleading through the non-inclusion, or only partial inclusion, of the results of subsidiary companies. The accounts of public companies now issued to shareholders are more unsatisfactory than they ever have been when regarded from the standpoint of exhibiting a true and correct view of the state of a company's affairs and its earning capacity.[12]

An illustration of the relatively barren quality of the pure holding company financial statements may be had in the following statements of the American Power & Light Company, especially if they are compared with the consolidated statements of the same company shown later. The assets, chiefly investments, give no clue either as to the type of securities held or as to the kind of properties behind the securities. The liability side does not indicate whether the prior claims of subsidiaries that must first be cared for before the holding company collects on its holdings are many or few. The Income account, since it shows only the interest and dividends received (mostly the latter), cannot tell the story of the real earning power available from the subsidiaries and the character of the earnings, which would be reflected in the Income accounts of the subsidiaries.

Sometimes it is possible to piece out the position of the holding company from the reports of subsidiaries, regarding the former as merely an investor in the latter. Frequently, however, there is intercorporate business which requires the elimination of certain intercompany profits before the various figures can be combined into one correct statement for the whole group. Such a condition we may best illustrate by a study of the construction of consolidated statements.

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[12] *Financial Digest* (London), June 18, 1934.

AMERICAN POWER & LIGHT COMPANY

GENERAL BALANCE SHEET
December 31, 1940
(Condensed from Original)

Assets		
Investments and Advances—Subsidiaries		$252,262,216
Current Assets:		
Cash	$ 9,207,768	
Temporary Cash Investments	10,326,359	
Interest and Dividends Receivable	713,514	
Miscellaneous Current Assets	78,465	
Total Current Assets		20,326,106
Unamortized Debt Discount & Expense		3,274,464
Total		$275,862,786
Liabilities		
Preferred Stock		$177,145,326
Common Stock		37,434,351
Funded Debt		46,261,000
Current Liabilities		4,684,509
Capital Surplus		36,026
Earned Surplus		10,301,573
Total		$275,862,786

INCOME ACCOUNT
For the Year Ended December 31, 1940

Income:		
From Subsidiaries		$ 11,878,815
Others		72,124
Total		$ 11,950,939
Expenses, Including Taxes		648,579
Balance before Interest and Other Deductions		$ 11,302,360
Interest and Other Deductions		2,833,623
Net Income		$ 8,468,737
Preferred Dividends		8,446,998
Balance		$ 21,739

The consolidated balance sheet. Consolidated statements, in the proper sense, show the condition (balance sheet) and operations (Income account) of the parent and constituent companies as though they were parts of a single enterprise. Confusing intercompany relations are eliminated so that the investor in the securities of the holding company can see how his interest stands with relation to the other parts of the system when the various corporations are considered as a group.

When combined, the assets of the affiliated companies fall under the following headings:

1. Assets which are not affected by the intercompany relationship.

2. Amounts owed by one affiliated company to another.
3. Securities of one affiliated company held by another.
4. Assets purchased by one affiliated company from another.

Little need be said of the first class, which is made up of cash and most of the fixed assets. The simple sum of all such assets as are held by the related companies would appear without adjustment in a consolidated balance sheet.

Accounts receivable, and the like. As for any amount owed by one of the companies to another, whether it is a promissory note, an advance, a loan, or an account, it is a liability for one company to the same amount that it is an asset for another. Since the group is viewed as a single enterprise, the two items are eliminated. Their inclusion would be regarded in the same light as would the inclusion among the assets in a manufacturer's balance sheet the inclusion of a loan by that manufacturer to a branch office with the inclusion of the liability of the branch office among the current liabilities. The actual treatment is, of course, to omit both items and merely add the cash of the branch office (or whatever other asset was transferred) to the similar asset of the home office.

Intercompany security holdings. Securities are treated in the same manner as are the accounts and notes, so far as possible. They are different in that they may be carried by the holding company at an asset value different from the amount shown on the liability side of the issuing company's balance sheet. How this discrepancy is handled will be considered in connection with the showing of stock and surplus for the consolidated statement.

It is important that there be a complete consolidation of all the related companies. The combination of the statements of only those companies which are in good condition and the carrying of the weaker subsidiaries under the asset "Investments" in the consolidated balance sheet is to be guarded against.

Intercompany transactions. The last class of assets to be considered are those which have been purchased by one of the companies from another. The most common example is inventory purchased from an affiliated company. Since intercompany transactions are to be viewed as interdepartmental matters in the consolidated statements, intercompany profits have to be eliminated in the valuation of the consolidated inventory. The manner in which this matter is treated by the accountant is indicated by the following illustration:

Company *A* produces materials to the cost value of $100,000, and sells $20,000 of this to outside parties, $60,000 to Company *B*, and has the remaining $20,000 in stock. Company *B* buys for $66,000 material from Company *A* which cost $60,000; spends $34,000 in further manufacture; ships $70,000 of the manufactured product . . . to Company *D;* sells $20,000 to outsiders; and has $10,000 in stock. . . .

In Company *B*'s books, its Manufacturing account will stand as follows:

	Intercompany Profit	*First Cost*	*Total*
Cost of Material	$6,000	$60,000	$ 66,000
Manufacturing Cost	.....	34,000	34,000
	$6,000	$94,000	$100,000
Cost of Sales:			
To Outside Parties	$1,200	$18,800	$ 20,000
To Company *D*	4,200	65,800	70,000
Balance in Stock	$ 600	$ 9,400	$ 10,000

The subsidiary companies (*A*, *B*, and *D*) will take up in their Income accounts the whole of their profits on their sales, and will declare dividends in the usual way. Out of the dividends which it receives, the holding company will set up $600 in respect of *B*'s profits (for *D* similarly) . . . which will be credited to an inventory reserve. In this way, all stocks on hand of all companies are, on the consolidated balance sheet, carried at net cost within the consolidation, and the consolidated income takes up no profit except on sales made to outside parties.[13]

In the valuation of other assets, there are undoubtedly variations in practice, but the same writer expresses the best conservative opinion when he states that any of the product used for

[13] Dickinson, A. L., *Accounting Practice and Procedure* (New York: Ronald Press, 1918), pp. 180–182. The annual reports of the U. S. Steel Corporation show a separate adjustment each year for the amount of net profit earned by subsidiary companies on intercompany sales, which is excluded from consolidated earnings and taken up only when such profits have been converted into cash assets.

A striking example of profits taken on sales to subsidiaries was disclosed in the report of Gillette Safety Razor Company to the New York Stock Exchange in a listing application dated Nov. 11, 1930. In the five-year period, 1925–1929, prior to the merger with AutoStrop Safety Razor Company, reported earnings exceeded actual earnings by an average of $2,370,000 annually. This discrepancy arose from the practice of billing goods to foreign selling subsidiaries at approximately the domestic wholesale prices, taking profits at once in the form of accounts receivable, and thus anticipating unrealized profits. For the years 1927, 1928, and 1929, the company had reported to stockholders, in not fully consolidated statements, net profits of $14,581,000, $16,244,000, and $13,582,000, respectively. The certified and fully consolidated statements to the Exchange showed profits of $13,122,000, $12,632,000, and $10,244,000 for the same years. (Standard Statistics Company annual report card, April, 1934.)

construction work within the organization should appear at the net cost only, so that no profit of subsidiaries will enter into the valuation of the capital assets.[14]

Liabilities. The debts in the consolidated balance sheet will be the sum of the liabilities owed to parties other than such corporations as are of the group. This rule calls only for the elimination of the intercompany indebtedness in the manner already discussed, and refers, of course, to debts only, the subject of stock requiring special treatment.

Capital stock and surplus. The par value of the stock issued by the holding company may be less than, equal to, or greater than, the sum of the par values of the stock acquired in subsidiary corporations. If the first is the case, then the excess of par value might be said to be the equivalent of paid-in surplus from the standpoint of the holding company. Such surplus will normally be set apart from the profit and loss surplus in the consolidated balance sheet and will be designated "Capital Surplus."

This situation may be created by the issuance of no-par-value stock for the stock of the companies being brought together through a holding company, and may be illustrated by the case of a holding company issuing 100,000 shares without par value for $7,000,000 par value of stock (which is the total outstanding) of companies which show on their books a surplus aggregating $2,000,000. If this stock has no par value but has a "declared value" or stated value of $5 per share and the liabilities amount to $1,000,000, our consolidated balance sheet will then read:

Assets		*Liabilities*	
Sundry Assets	$10,000,000	Sundry Liabilities	$ 1,000,000
		Common Stock (100,000 shares without par value)	500,000
		Capital Surplus	6,500,000
		Initial Surplus	2,000,000
	$10,000,000		$10,000,000

The division of surplus just illustrated draws a line between capital surplus and the subsidiaries' earned surplus. Since the $6,500,000 might be mistaken for capital surplus showing as such on the books of the subsidiaries, a clearer statement would follow

[14] For a detailed explanation of the various accounting treatments of intercompany profits on construction, see Finney, H. A., *Principles of Accounting, Advanced* (New York: Prentice-Hall, Inc., 1938), Chap. 47, pp. 275–278.

the form in the consolidated balance sheet of the American Gas and Electric Company, as of December 31, 1940:

Net excess of equity in assets of subsidiaries over investment in subsidiaries consolidated; excluding Profit & Loss Surplus[15]	$2,690,792

The "Initial Surplus" of $2,000,000 represents the combined Earned Surplus accounts of the subsidiary companies. Since all of the property at the date of acquisition is "principal" or "capital" from the standpoint of the buyer, this initial surplus is capital surplus for the holding company, which will usually make dividend distributions only from surplus earned subsequent to the date of purchase of its investments.[16] Such treatment is clear and satisfactory so long as the value of the stock issued does not exceed the par value of the stocks acquired. Whenever the amount of stock issued by the holding company does exceed that figure, the surplus of the combined companies will be reduced by the amount of excess, unless some adjustment, such as the one mentioned below, is made.

Sometimes the stock issued by the holding company exceeds not only the surplus but the combined stock and surplus of the acquired subsidiaries. A deficit in the consolidated balance sheet is avoided in such cases by the introduction of goodwill into the list of assets of the consolidated statement.[17] If the amount of goodwill created is made equal to the excess of stock issued over stock acquired (par value), the surplus of the consolidated balance sheet will, as in the illustrative statement above, exactly

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[15] In the consolidated balance sheets (1940) of the American Power & Light Company and the Electric Power & Light Company, the Plant account is stated with a deduction for the net adjustment arising from the elimination of intercompany-held securities, including the balance of surplus of subsidiaries at dates of acquisition, as adjusted.

[16] The American Institute of Accountants in their recommendations to the New York Stock Exchange suggested that earned surplus of a subsidiary created prior to acquisition should not form a part of consolidated earned surplus, and that no dividend out of such surplus should be regarded as income to the parent company. (*Commercial and Financial Chronicle,* Feb. 4, 1933, p. 741.)

[17] The item of goodwill will normally be the sum of: (*a*) the goodwill asset in the balance sheets of the separate companies plus (*b*) the amount by which the aggregate book value to the holding company of the stocks of subsidiary companies exceeds the par value of that stock and the surplus at the date of acquisition. Finney, H. A., *Principles of Accounting* (1938), Chap. 43, p. 203. Thus, the *Annual Report* of General Motors Corporation (1933) states (p. 23): "The Corporation's standard accounting practice interprets goodwill as the difference between the purchase price and the book value of properties acquired. . . ."

equal the combined surplus of the affiliated corporations. If, however, goodwill is added only for an amount equal to the excess of the stock issued (par value) over the book value (combined stock and surplus) of the acquired stock, there will be no surplus in the consolidated balance sheet at the time the holding company is formed. Surplus will result later from undivided earnings of members of the group subsequent to their combination.

Commonwealth & Southern Corporation, with assets in excess of a billion dollars, showed this item not as an asset or even as goodwill but as a deduction from surplus, which on December 31, 1930, was stated as follows:

CAPITAL AND SPECIAL SURPLUS:	
Capital surplus balance of subsidiary companies	$ 43,515,329
Surplus balance of present subsidiary companies as of dates of control	23,394,739
Capital surplus balance of the Commonwealth & Southern Corporation	575,609,701
	$642,519,769
Less—Excess amount at which subsidiary company securities are carried by parent company over the par or stated value of such securities of subsidiary companies	630,112,957
	$ 12,406,812
EARNED SURPLUS	9,548,255

In later years the net amount only was shown.

A company might arbitrarily add this intangible item of goodwill to some tangible asset. The likely method for such concealment would be by an addition to the Property account. Good accounting practice, however, would forbid any increases in valuation in the process of transferring figures from the accounts to the balance sheet.

Minority stockholders. The discussion up to this point has ignored the fact that in many cases the holding company does not own all the stock of the subsidiary and so does not have an undivided interest in the net assets of that subsidiary. The interest of the minority stockholders will be shown on the liability side of the consolidated balance sheet and should equal the par or stated value of this minority stock plus a fraction of the subsidiary's surplus proportionate to the portion of the total stock outstanding which is minority stock.

An illustration of balance sheet consolidation. For those unfamiliar with accounting technique, an examination of the methods used in assembling a relatively simple case may be useful. The first accompanying statement gives the details of the indi-

STATEMENT I

DETAILED BALANCE SHEETS OF HOLDING COMPANY (*A*) AND TWO OPERATING SUBIDIARY COMPANIES (*B* AND *C*)
December 31, 1941

	(1) Company A	(2) Company B	(3) Company C	(4) Combined	(5) Eliminations	(6) Cleared
Assets:						
Cash	$150,200	$ 66,800	$ 46,100	$ 263,100	.....	$ 263,100
Inventories	.....	311,600	198,400	510,000	.....	510,000
Accounts Receivable Special	.....	12,000	15,000	27,000	$ 27,000	.....
Prepaid and Deferred Charges	20,000	38,700	19,200	77,900	.....	77,900
Advances to Subsidiaries	60,000	.....	.....	60,000	60,000	.....
Plant and Equipment	.....	275,000	154,800	429,800	.....	429,800
Investments in Company *B* (stock at par)	175,000	.....	.....	175,000	175,000	.....
Investments in Company *C* (stock at par)	200,000	.....	.....	200,000	200,000	.....
Investments in Company *A* (stock at par)	.....	25,000	.....	25,000	25,000	.....
Investments in Company *B* (bonds at par)	30,000	.....	.....	30,000	30,000	.....
Total	$635,200	$729,100	$433,500	$1,797,800	$517,000	$1,280,800
Liabilities:						
Current Liabilities	$ 54,000	$265,000	$152,100	$ 471,100	.....	$ 471,100
Owing to Company *C*	.....	15,000	.....	15,000	$ 15,000	.....
Owing to Company *B*	.....	.....	12,000	12,000	12,000	.....
Advances from Company *A*	.....	25,000	35,000	60,000	60,000	.....
Bonds Payable	.....	50,000	.....	50,000	30,000	20,000
Capital Stock	500,000	300,000	200,000	1,000,000	400,000	600,000
Surplus	81,200	74,100	34,400	189,700	.....	189,700
Totals	$635,200	$729,100	$433,500	$1,797,800	$517,000	$1,280,800

STATEMENT II

GENERAL BALANCE SHEET OF COMPANY *A* AND SUBSIDIARIES *B* AND *C* COMBINED
(Without Elimination of Intercompany Items)

December 31, 1941

Assets:		
Cash		$ 263,100
Inventories		510,000
Accounts Receivable Special		27,000
Prepaid and Deferred Charges		77,900
Advances to Subsidiaries		60,000
Plant and Equipment		429,800
Investments in Stocks and Bonds of Affiliated Companies		430,000
Totals Assets		$1,797,800
Liabilities:		
Current Liabilities		$ 471,100
Advances and Intercompany Obligations		87,000
Bonds Payable		50,000
Capital Stock Outstanding:		
Company *A*	$500,000	
Company *B*	300,000	
Company *C*	200,000	1,000,000
Combined Surplus		189,700
Total Liabilities		$1,797,800

STATEMENT III

CONSOLIDATED BALANCE SHEET OF COMPANY *A* AND ITS SUBSIDIARIES

December 31, 1941

Assets			*Liabilities*		
Cash		$ 263,100	Current Liabilities		$ 471,100
Inventories		510,000	Bonded Debt of Company *B*	$50,000	
Prepaid and Deferred Charges		77,900	Less Bonds Held by Company *A*	30,000	20,000
Plant and Equipment		429,800	Minority Stockholders' Interest in Subsidiaries (par of stock $125,000, surplus $30,875)		155,875
			Capital Stock Issued	$500,000	
			Less 250 Shares Held by Subsidiary Companies	25,000	475,000
			Surplus		158,825
		$1,280,800			$1,280,800

AMERICAN POWER & LIGHT COMPANY AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEET (CONDENSED)

December 31, 1940

Assets

Plant & Equipment (including intangibles)		$781,397,856
Less net adjustment*		15,490,351
Balance		$765,907,505
Investments & Funds		1,196,562
Current Assets:		
Cash	$22,295,479	
Special Deposits	3,416,678	
Temporary Investments	16,094,281	
Receivables	11,629,479	
Materials and Supplies	5,658,032	
Other Current Assets	972,661	
Total		60,066,611
Unamortized Discount & Expense		14,548,755
Reacquired Subsidiary Preferred Stock		1,583,464
Miscellaneous Assets		1,064,741
Total		$844,367,638

Liabilities

Capital Stock:	
American Power & Light Co.	
$6—preferred	$ 79,300,926
$5—preferred	97,844,400
Common	37,434,351
Subsidiaries:	
Preferred	111,622,200
Common	424,697
Total capital stock	$326,626,574
Long-term Debt:	
American Power & Light Co.	46,261,000
Subsidiaries	312,438,750
Current Liabilities	30,213,999
Deferred Credits	1,595,943
Reserves for Retirement & Depletion	67,342,210
Other Reserves	4,996,876
Contributions in Aid of Construction	892,653
Miscellaneous Liabilities	397,184
Undeclared Cumulative Subsidiary Preferred Dividends (held by public)	8,233,332
Minority Interest in Surplus of Subsidiaries	196,083
Capital Surplus	36,026
Earned Surplus	45,137,008
Total	$844,367,638

* Arising from elimination of intercompany-held securities including balance of surplus of subsidiaries at dates of acquisition.

vidual companies' statements with the intercompany obligations stated separately. The second statement brings together in a single balance sheet the information obtained without eliminating any intercompany relations. The last statement repeats the information, making the customary eliminations.[18]

The consolidated balance sheet of the American Power & Light Company with all intercompany accounts eliminated may now be presented for comparison with the holding company balance sheet given above (page 484). Whereas the latter resembled the report of an investment company, the former appears like that of most public utilities, differing chiefly in its more complex capitalization.

Consolidated capital structures. To show the proportions of the consolidated capital structure of the whole holding company system, a separation between subsidiary and holding company securities is necessary. This division is illustrated in the accompanying table showing the structures of three large public utility holding company systems as they appeared in 1940.

CONSOLIDATED CAPITAL STRUCTURE PROPORTIONS OF UTILITY HOLDING COMPANIES—1940

	American Gas & Electric Co.	*American Power & Light Co.*	*North American Company*
Subsidiaries:			
Bonds	45.4%	42.8%	41.8%
Preferred stock	14.3	15.3	14.9
Minority interest	...	0.1	2.3
Holding Company:			
Bonds	6.6	6.3	9.7
Preferred stock	8.1	24.3*	9.0
Common equity	25.6	11.2	22.3
Total	100.0%	100.0%	100.0%
Total structure (millions—$)	437	731	724

* Exclusive of preferred dividend accumulation.

The first charge upon earnings is the interest upon the debt of the operating subsidiaries, after which their preferred dividends are paid, the balance being left for subsidiary common stock. This common usually forms the bulk of the assets of the holding company. A portion, usually a small one, of the income at this point belongs to the minority common stockholders. The remainder, going to the holding company, is the basis for the inter-

[18] These statements are from R. J. Bennett's *Corporation Accounting* (New York: Ronald Press Co., 1916), pp. 458, 460, and 461, with slight changes.

est, preferred dividends, and common earnings of its securities. Because such distributions are possible only when the subsidiaries' common stocks show earnings, the holding company securities are junior, as a class, to the bonds and preferred stocks of the subsidiaries. Whether funded debt for the holding company itself will be speculative in nature or not will depend upon the stability of earnings and the amounts of prior claims in the form of subsidiary charges. When, as in the case of holding companies such as the Consolidated Edison Company of New York and the American Telephone and Telegraph Company, these claims are not large and the equity of the holding company is very substantial, the bonds of the latter will rate highly. They may even conform to the standards usually set for the financing of an operating company.

Consolidated earnings statements. A fully consolidated earnings statement would, like the consolidated balance sheet, eliminate all intercompany items and show the operations of all controlled companies merged. Recognition that subsidiaries' earnings may not always be consolidated and the difficulties of consolidated statements are reflected in the rules of the Securities and Exchange Commission (Regulation S-X, Article 4), which do not require consolidation. They lay down the general principle:

> For majority-owned subsidiaries not consolidated with the registrant there may be filed statements in which such subsidiaries are consolidated or combined in one or more groups pursuant to principles of inclusion or exclusion which will clearly exhibit the financial condition and results of operations of the group or groups. If it is essential to a properly summarized presentation of the facts, such consolidated or combined statement shall be filed.

Various other rules are designed to insure clarity, such as that any change in the companies consolidated and differences between the investment in subsidiaries and the valuation of the net assets which represent that investment on the books of the subsidiary, shall be fully set forth in the report of the holding company.

The practice of partial consolidation is most likely to appear in industrial holding company systems—for holdings in minor corporations, or units with activities very unlike the main business, or holdings in jointly controlled subsidiaries.[19] It is also

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[19] Thus, prior to 1936, General Motors Corporation included in its Income account its proportion of the undivided profits and losses of certain companies

the practice not to consolidate a subsidiary in receivership or bankruptcy. While such halfway consolidation of accounts may be open to objection at times, there are cases where it is most fitting to treat even a wholly owned subsidiary as an investment. A clear-cut case is that of the National Bank of Detroit. Formed after the bank moratorium, as a result of the closing of the leading Detroit banks, one-half of the $25,000,000 capital was taken by the Reconstruction Finance Corporation in the form of preferred stock, and the balance, in the form of common stock, was underwritten by General Motors Corporation. Since less than a fourth of this common was taken by the public, the corporation purchased a very substantial part of the total. Regardless of whether or not this stock represented a controlling interest, an attempt to consolidate the bank's assets and liabilities in the statements of the automobile manufacturer have made for confusion rather than for clarity.

The consolidated income report will show more accurately than the capital structure proportions the exact current position of the various groups of securities. The reason for this is partly the ordinary one, namely, that earnings are the primary determinant of value, and partly that in cases of unsatisfactory accounting the balance sheet is more likely to be doubtful in meaning than is the Income account. An illustration of the holding company consolidated form of Income account may be had in the statement of the American Power & Light Company, whose balance sheet appears on page 496.

The figures showing operating results are subject to the analysis procedure customary for the type of business involved, in this case that of an electric utility. The difference lies in the form of capital structure. The average position of the subsidiary charges is studied by dividing the available net income first by the interest charges and then by the sum of the interest and preferred dividends. The resulting measurements of coverage may not be truly representative because some subsidiaries may be much better and some much poorer than this combined result shows. Again, intermediary holding companies may be interposed between the operating subsidiaries and the holding company being analyzed. The bonds of such an intermediary would be weaker than the average preferred stock of the subsidiaries

in which substantial interests were held. Beginning in 1936, only dividends were included in income. Any net losses, however, were reflected in a reduction of the Investment account.

AMERICAN POWER & LIGHT COMPANY AND SUBSIDIARIES

CONSOLIDATED STATEMENT OF INCOME
For the Twelve Months Ended December 31, 1940
(Intercompany Items Eliminated)

Subsidiaries	
Operating Revenues	$108,221,998
Operating Expenses, Excluding Direct Taxes	41,862,950
Direct Taxes	17,762,464
Retirement & Depletion Allowance	10,720,240
Net Revenues from Operation	$ 37,876,344
Other Income	110,552
Gross Income	$ 37,986,896
Interest to Public and Other Deductions	15,764,000
Preferred Dividends to Public (including those unearned)	7,171,742
Balance	$ 15,051,154
Portion Applicable to Minority Interests	54,164
Net Equity of American Power & Light Company	$ 14,996,990
American Power & Light Company	
Balance of Subsidiaries' Income Applicable to American Power & Light Company (as shown above)	$ 14,996,990
Other income	72,124
Total	$ 15,069,114
Expenses, Including Taxes	648,579
Interest to Public and Other Deductions	2,833,623
Balance Applicable to Preferred and Common Stocks	$ 11,586,912
Dividends on Preferred Stocks ($5.25 on $6 stock; $4.37½ on $5 stock)	8,446,991
Balance to Surplus	$ 3,139,921
Consolidated Surplus—Jan. 1, 1940	41,344,588
Miscellaneous credits	1,337,290
Miscellaneous debits	*684,792*
Consolidated Surplus—Dec. 31, 1940	$ 45,137,007

from which the income was derived, via the subsidiaries' common stocks, to pay the interest. So the "times earned" measures for subsidiary charges must be read with caution as to their meaning.

In studying the coverage of the holding company's charges, one must regard them as junior claims; and the "over-all" method of analysis, which combines them with the prior charges of the subsidiaries, gives the most accurate indication of their position.[20] The share of the income attributable to the minority common stock, however, is neither a definite charge nor prior to the holding company's claim. Since it is based on subsidiary

[20] See above, page 195, as to the merits of the "over-all" basis for measuring "times earned."

common stocks of the same sort as yield the holding company its income, it is on a parity with the latter. The most satisfactory method, then, of studying the number of times the holding company interest is covered is to eliminate the minority interests' share from the total net income of the system. The remainder is then divided by the sum of the subsidiaries' interest and preferred dividends and the holding company's interest. Whenever this method is applied, care must be taken to insure that the eliminated minority interest represents subsidiary common stock on a parity with the holding company's interest.[21] The coverage

"TIMES EARNED" FOR THREE LEADING UTILITY HOLDING COMPANIES' CHARGES ON "OVER-ALL" BASIS

AFTER DEDUCTING DEPRECIATION AND TAXES

1940

	American Gas & Electric	*American Power & Light*	*North American*
Subsidiaries:			
Interest	3.25	2.37	3.57
Preferred dividends	2.12	1.63	2.47
Holding Company:			
Interest	1.96	1.45	1.95
Preferred dividends	1.77	1.05	1.65

for the holding company's preferred dividends is obtained by simply increasing the divisor in the preceding formula to include such dividends. Results based upon this method of analysis are shown in the table on this page for the three utility holding companies whose capital structure proportions were given above.

Such indexes of safety as those shown in this table should be merely the first step to a more thorough analysis, especially when invidious intercompany comparisons are to be made. Equal "times earned" figures, even on an over-all basis, do not necessarily mean equally strong credit positions because of such factors as the following:

1. Differences in stability of earning power may arise from differences in the character of the demand.

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[21] *Moody's* reported the "times interest earned" for Purity Bakeries Corporation bond interest as 1.68 and 2.44 for 1932 and 1933, respectively, combining bond interest and the minority interest in earnings as charges:

	1932	1933
Total Income	$1,134,838	$1,553,761
Interest, etc.	411,767	397,929
Minority Interest	262,185	238,860

The reason for this unusual treatment was that the minority interest was almost entirely preferred stock of a subsidiary.

2. A system with a favorable growth trend should find such a trend helpful in offsetting the influence of subnormal business in depression.

3. In particular years, a system may show heavy charges incurred in financing property the earning power of which takes time to develop.

4. Different systems may vary in the likelihood of their suffering from rate reductions because of property valuation or other factors.

5. Allowance must be made for the conservatism of the system in reporting earnings. Generous maintenance and depreciation policies may result in a comparative understatement of strength.

6. Weakness or strength may be concealed in those stock holdings which are not a part of the consolidated picture. Failure to consolidate may be due to holdings that are a minority interest or are less than the arbitrary percentage which the holding company requires before making the subsidiary a part of the consolidated picture.[22]

7. A mixture of weak and strong subsidiaries may result in an understatement of the position of the holding company's securities because of its ability to allow an insolvent subsidiary to go into receivership without allowing it to drain resources from the rest of the system.[23] Thus, a holding company with one profitable subsidiary and one losing subsidiary might show no earnings on a consolidated basis. Yet if it were willing to abandon the weaker unit to its fate, the stronger unit might supply ample funds to care for the holding company's charges.

This last point brings out the most important weakness of the unsupported consolidated report. Details on subsidiaries' conditions and operations may be essential for determining the true position of the holding company and for preventing an unduly pessimistic conclusion from the effect of a few unprofitable subsidiaries, the harmful results of which can be isolated by virtue of their separate incorporation. Just as the consolidated statements represent a distinct advance over the simple reports which

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[22] Important minority holdings affect the analysis of the North American Company and the United Gas Improvement Company.

[23] Unless, like Armour & Co. (Ill.), it has guaranteed subsidiary obligations, as that company has the bonds and preferred stock of Armour & Co. (Del.). The same liability may result indirectly from a fixed lease of subsidiary property, which may be found in real estate subsidiaries, or a contract to purchase its product.

treated the holding company as merely an investment company, so reports which contain added data relative to the individual subsidiaries should be regarded as the next important requirement for a full and adequate standard of information.[24]

Summary. In addition to the special problems incident to analyzing the statements of a business in any given field of enterprise, the holding company form of organization superimposes its own peculiar financial and legal characteristics. Three types of information are likely to be helpful in studying such a situation. (1) The pure holding company statements, which treat the corporation as a mere investor in stocks, give some information as to current position, capital structure, and the usual amounts of income collected and the form it takes. (2) Chief reliance, however, is placed upon the consolidated statements, which show the whole system of corporations as a single unit. Such consolidation of accounts eliminates earnings arising from intercompany relations, and is designed to bring out both strength and weakness which might otherwise be cloaked under the accounts of a separate subsidiary corporation. (3) Because the liabilities and troubles of each corporation can be shut off by these separate corporate entities, a third type of information is sometimes necessary: that of separate subsidiary reports permitting the investor to note the possibilities of isolating and dropping or reorganizing unprofitable units which make the composite picture unattractive. Such individual reports may be invaluable in clarifying the situation when the various properties are of unlike character.

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[24] Some holding companies now recognize this need by including subsidiary reports. Examples in recent years have been the American Power & Light Company (1929), the Engineers Public Service Company, the National Power & Light Company, the Standard Gas & Electric Company, and the Greyhound Corporation. The United Gas Improvement Company has included in its annual report summaries of the earnings of other companies in which it has less than a majority of the voting common stock.

SELECTED REFERENCE MATERIAL

Selected Reference Material

These references, though not always dealing directly with the subject of statement analysis, offer material valuable in the analysis of financial statements. The list is for supplementary reference work and is not intended to serve as a complete bibliography.

PART I

American Institute of Accountants, *Accounting Terminology.* American Institute Publishing Co., Inc., New York, 1931.

————, *Examination of Financial Statements by Independent Public Accountants.* American Institute of Accountants, New York, 1936.

Badger, R. E., and H. G. Guthmann, *Investment Principles and Practices* (3rd ed.). Prentice-Hall, Inc., New York, 1941.

Bliss, James H., *Financial and Operating Ratios in Management.* Ronald Press Co., New York, 1923.

Budd, T. A., and E. N. Wright, *The Interpretation of Accounts.* Prentice-Hall, Inc., New York, 1927.

Crum, W. L., *Corporate Earning Power.* Stanford University Press, Stanford University, California, 1929.

Daniels, Mortimer B., *Financial Statements.* American Accounting Association, Chicago, 1939.

Dewing, A. S., *The Financial Policy of Corporations* (4th rev. ed.). Ronald Press Co., New York, 1941.

Ettinger, R. P., and D. E. Golieb, *Credits and Collections* (rev. ed. in collaboration with H. M. Diamond). Prentice-Hall, Inc., New York, 1929.

Finney, H. A., *Principles of Accounting* (3 vols., *Introductory, Intermediate* and *Advanced*). Prentice-Hall, Inc., New York, 1941.

Foulke, Roy A., *The Commercial Paper Market.* Bankers Publishing Co., New York, 1931.

————, *Behind the Scenes of Business* (rev. ed.). Dun & Bradstreet, Inc., New York, 1937.

Gerstenberg, C. W., *Financial Organization and Management of Business* (2nd rev. ed.). Prentice-Hall, Inc., New York, 1939.

Gilman, Stephen, *Analyzing Financial Statements* (rev. ed.). Ronald Press Co., New York, 1934.

Graham, Benj., and D. L. Dodd, *Security Analysis* (2nd ed.). McGraw-Hill Book Co., New York, 1940.

————, and Spencer B. Meredith, *The Interpretation of Financial Statements.* Harper & Brothers, New York, 1937.

Gregory, H. E., *Accounting Reports in Business Management.* Ronald Press Co., New York, 1928.

Guthmann, H. G., and H. E. Dougall, *Corporate Financial Policy.* Prentice-Hall, Inc., New York, 1941.

Hayes, M. V., *Accounting for Executive Control.* Harper & Brothers, New York, 1929.

Kavanaugh, Thos. S., *Bank Credit Methods and Practice* (3rd ed.). Bankers Publishing Co., New York, 1924.

Kester, Roy B., *Accounting Theory and Practice* (3rd ed.). Ronald Press Co., New York, 1930.

————, *Advanced Accounting* (3rd ed.). Ronald Press Co., New York, 1933.

————, and H. A. Inghram (editors), *Corporate Financial Statements* (Proceedings of the Accounting Institute, 1940). Columbia University Press, New York, 1940.

Lincoln, E. E., *Applied Business Finance* (5th ed.). McGraw-Hill Book Co., New York, 1941.

Marple, R. P., *Capital Surplus and Corporate Net Worth.* Ronald Press Co., New York, 1936.

Maze, C. L., and John G. Glover, *How to Analyze Costs.* Ronald Press Co., New York, 1929.

McKinsey, James O., *Managerial Accounting.* University of Chicago Press, Chicago, 1924.

Mitchell, Walter L., Jr., *Standard Ratios for Retailing.* Dun & Bradstreet, Inc., New York, 1940.

Montgomery, R. H. (editor), *Financial Handbook* (2nd ed.). Ronald Press Co., New York, 1933.

Munn, Glenn G., *Bank Credit.* McGraw-Hill Book Co., New York, 1925.

Myer, John N., *Financial Statement Analysis.* Prentice-Hall, Inc., New York, 1941.

Paton, W. A. (editor), *Accountants' Handbook* (2nd ed.). Ronald Press Co., New York, 1932.

————, *Advanced Accounting.* The Macmillan Co., New York, 1941.

————, and A. C. Littleton, *An Introduction to Corporate Accounting Standards.* American Accounting Assn., Chicago, 1940.

Prudden, R. F., *The Bank Credit Investigator.* Bankers Publishing Co., New York, 1922.

Ripley, W. Z., *Main Street and Wall Street.* Little, Brown and Co., Boston, 1927.

Rorem, C. R., and H. D. Kerrigan, *Accounting Method.* McGraw-Hill Book Co., New York, 1942.

Schluter, W. C., *Credit Analysis.* Prentice-Hall, Inc., New York, 1925.

Stockwell, H. G., *How to Read a Financial Statement.* Ronald Press Co., New York, 1925.

————, *How to Read a Profit and Loss Statement.* Ronald Press Co., New York, 1927.

Strain, Myron M., *Industrial Balance Sheets.* Harper & Brothers, New York, 1929.

Wall, Alexander, *Analytical Credits.* Bobbs-Merrill Co., Indianapolis, 1921.

————, *The Banker's Credit Manual* (rev. ed.). Bobbs-Merrill Co., Indianapolis, 1924.

————, and R. W. Duning, *Ratio Analysis of Financial Statements.* Harper & Brothers, New York, 1928.

PART II

Railroad Statements (Chapters XI and XII)

Adams, Henry C., *American Railway Accounting.* Henry Holt & Co., New York, 1918.

Bogen, Jules I., *Analysis of Railroad Securities.* Ronald Press Co., New York, 1928.

Bureau of Railway Economics, *Railway Revenues and Expenses* (monthly publication). Washington, D. C.

Cleveland, F. A., and F. W. Powell, *Railroad Finance.* D. Appleton & Co., New York, 1912.

Daggett, Stuart, *Principles of Inland Transportation* (3rd ed.). Harper & Brothers, New York, 1941.

Interstate Commerce Commission, *Classification of Income, Profit and Loss, and General Balance Sheet Accounts for Steam Roads.* United States Government Printing Office, Washington, D. C., 1914.

Locklin, D. Philip, *Economics of Transportation* (rev. ed.). Business Publications, Inc., Chicago, 1938.

Miller, Sidney L., *Inland Transportation.* McGraw-Hill Book Co., New York, 1933.

Moody's Manual of Investments, "Railroads" (annual). Moody's Investors Service, New York.

Moulton, H. G., and associates, *The American Transportation Problem.* Brookings Institution, Washington, D. C., 1933.

Ripley, Wm. Z., *Railroads: Finance and Organization.* Longmans, Green & Co., New York, 1915.

Sakolski, A. M., *American Railroad Economics.* Macmillan Co., New York, 1913.

Wermuth, Chas. E., *Railroad Accounts and Statistics.* Prentice-Hall, Inc., New York, 1924.

Woodlock, Thomas F., *Anatomy of a Railroad Report and Ton-Mile Cost.* Doubleday, Page & Co., New York, 1900.

Public Utilities (Chapter XIII)

American Gas Association, *Annual Statistics of the Manufactured Gas Industry.* New York.

————, *Annual Statistics of the Natural Gas Industry.* New York.

Annual reports of various state commissions.

Childs, John F., and Francis Woodbridge, *A Practical Introduction to Public Utility Security Analysis.* Barron's Publishing Co., New York, 1940.

Doolittle, F. W., *Cost of Urban Transportation.* American Electric Railway Association, New York, 1916.

Dorau, H. B., *Materials for the Study of Public Utility Economics.* The Macmillan Co., New York, 1930.

Federal Communications Commission, *Statistics of the Communication Industry in the United States.* Washington, D. C.

Federal Power Commission, *Annual Reports.* Washington, D. C.

————, *Statistics of Electric Utilities in the United States* (annual).

————, *Uniform System of Accounts Prescribed for Public Utilities and Licensees.* Washington, D. C., 1937.

Glaeser, M. G., *Outlines of Public Utility Economics.* The Macmillan Co., New York, 1927.

Jones, Eliot, and T. C. Bigham, *Principles of Public Utilities.* The Macmillan Co., New York, 1931.

Moody's Manual of Investments, "Public Utilities" (annual). Moody's Investors Service, New York.

Nash, L. R., *Economics of Public Utilities* (2nd ed.). McGraw-Hill Book Co., New York, 1931.

National Association of Railroad and Utilities Commissioners, Report of Special Committee on *Depreciation.* State Law Reporting Co., 30 Vesey St., New York, 1938.

Thompson, C. W., and Wendell R. Smith, *Public Utility Economics.* McGraw-Hill Book Co., New York, 1941.

Wilson, G. L., Herring, J. M., and R. B. Eutsler, *Public Utility Industries.* McGraw-Hill Book Co., New York, 1936.

Mercantile and Manufacturing Corporations (Chapter XIV)

Epstein, Ralph C., *A Source-Book for the Study of Industrial Profits.* United States Department of Commerce, Washington, D. C., 1932.

————, *Industrial Profits in the United States.* National Bureau of Economic Research. New York, 1934.

Fitzpatrick, P. J., *Symptoms of Industrial Failures as Revealed by an Analysis of the Financial Statements of the Failed Companies, 1920–1929.* The Catholic University of America, Washington, D. C., 1931.

Kraft, C., and L. P. Starkweather, *Analysis of Industrial Securities.* Ronald Press Co., New York, 1930.

Moody's Manual of Investments, "Industrials" (annual). Moody's Investors Service, New York.

Sloan, L. H., *Corporation Profits.* Harper & Brothers, New York, 1929.

Young, R., *Industrial Credits.* Harper & Brothers, New York, 1927.

Mining Statements (Chapter XV)

Emmons, W. H., *General Economic Geology.* McGraw-Hill Book Co., New York, 1922.

Finlay, James R., *The Cost of Mining* (3rd ed.). McGraw-Hill Book Co., New York, 1920.

Hesse, A. W., *The Principles of Coal Property Valuation.* John Wiley & Sons, Inc., New York, 1930.

Hoover, Herbert C., *Principles of Mining.* McGraw-Hill Book Co., New York, 1909.

Hoover, T. J., *The Economics of Mining* (Non-Ferrous Metals). Stanford University Press, Stanford University, Cal., 1933.

Leith, C. K., *Economic Aspects of Geology.* Henry Holt & Co., New York, 1921.

Mines Register. Atlas Publishing Co., New York. (Describes non-ferrous metal mining companies in western hemisphere. Successor to *The Mines Handbook.* Issued at irregular intervals; latest, vol. 20, 1940.)

Pickering, J. C., *Engineering Analysis of a Mining Share.* McGraw-Hill Book Co., New York, 1917.

Pogue, Joseph E., *The Economics of Petroleum.* John Wiley & Sons, New York, 1921.

Roush, G. A., *The Mineral Industry, Its Statistics, Technology and Trade* (annual). McGraw-Hill Book Co., New York.

United States Department of Interior, Bureau of Mines, *Mineral Resources of the United States:* Part I, "Metals"; Part II, "Non-metals"; through 1931.

————, *Minerals Yearbook,* beginning 1932–1933 (annual).

————, miscellaneous bulletins (see list of publications).

United States Department of Interior, Geological Survey. Publishes various reports and professional papers. See list of publications.

Voskuil, Walter H., *Minerals in Modern Industry.* John Wiley & Sons, New York, 1930. (See pp. 338–341 for "Literature on Minerals.")

Bank Statements (Chapter XVI)

American Bankers Association, *Commercial Bank Management Studies.* American Bankers Association, New York.

————————, Research Council, *The Earning Power of Banks.* American Bankers Association, New York, 1939.

Annual reports of the banking departments in the various states.

Atkins, Paul M., *Bank Bond Investment and Secondary Reserve Management.* Bankers Publishing Co., New York, 1940.

Bradford, F. A., *Money and Banking* (4th ed.). Longmans, Green & Co., New York, 1940.

Federal Deposit Insurance Corporation, *Annual Reports.* Washington, D. C.

Garcia, F. L., *How to Analyze a Bank Statement.* Bankers Publishing Co., Boston, 1935.

Harr, Luther, and W. C. Harris, *Banking Theory and Practice* (2nd ed.). McGraw-Hill Book Co., New York, 1936.

Hunt, Pearson, *Portfolio Policies of Commercial Banks in the United States 1920–1939.* Harvard University Graduate School of Business Administration, Boston, 1940.

Phillips, C. A., *Bank Credit.* The Macmillan Co., New York, 1920.

Steiner, Wm. H., and Eli Shapiro, *Money and Banking* (rev. ed.). Henry Holt & Co., New York, 1941.

Stronck, H. N., *Bank Administration.* Rand McNally & Co., Chicago, 1929.

————————, *Bank Management Controls.* Rand McNally & Co., Chicago, 1941.

Trant, James B., *Bank Administration.* McGraw-Hill Book Co., New York, 1931.

United States Treasury Department, *Annual Reports of Comptroller of Currency.* Washington, D. C.

Westerfield, Ray B., *Money, Credit and Banking.* Ronald Press Co., New York, 1938.

Whitsett, J. M., *Banking Operations in Ohio, 1920–1940.* Ohio State University Bureau of Business Research, Columbus, 1941.

Insurance Companies (Chapter XVII)

Annual reports of the insurance departments of the various states.

Bailey, Henry H., *Specialized Accounting Systems,* Chaps. 7, 8. John Wiley & Sons, New York, 1941.

Best's Insurance Reports (annual), 3 parts: 1. "Life"; 2. "Casualty, Surety, and Miscellaneous"; 3. "Fire and Marine." Alfred M. Best Co., New York.

Flitcraft's Compend (annual). Flitcraft Life Insurance Works, Oak Park, Illinois.

Huebner, S. S., *Life Insurance* (3rd ed.). D. Appleton-Century Co., New York, 1935.

Kulp, C. A., *Casualty Insurance.* Ronald Press Co., New York, 1928.

MacLean, Joseph B., *Life Insurance* (4th ed.). McGraw-Hill Book Co., New York, 1935.

Magee, John H., *Property Insurance.* Richard D. Irwin, Inc., Chicago, 1940.

Mowbray, A. H., *Insurance.* McGraw-Hill Book Co., New York, 1930.

Riegel, Robert, and H. J. Loman, *Insurance Principles and Practice* (rev. ed.). Prentice-Hall, Inc., New York, 1929.

Spectator Insurance Year Book (annual), 4 parts: 1. "Life"; 2. "Casualty, Surety, Miscellaneous"; 3. "Fire and Marine"; 4. "Business by States of Casualty Companies." Chilton Co. (Inc.), Philadelphia.

Wiegand, W. B., *Fire Insurance Accounting.* Ronald Press Co., New York, 1926.

Holding Companies (Chapter XVIII)

Bennett, R. J., *Corporation Accounting,* Chaps. 31 and 32. Ronald Press Co., New York, 1920.

Bonbright, James C., and Gardiner C. Means, *The Holding Company.* McGraw-Hill Book Co., New York, 1932.

Finney, H. A., *Consolidated Statements for Holding Companies and Subsidiaries.* Prentice-Hall, Inc., New York, 1923.

———, *Principles of Accounting (Advanced)*, Chaps. 47–54. Prentice-Hall, Inc., New York, 1934.

Guthmann, H. G., and H. E. Dougall, *Corporate Financial Policy,* Chap. 25. Prentice-Hall, Inc., New York, 1940.

Haney, Lewis H., *Business Organization and Combination* (3rd ed.), Chap. 15. Macmillan Co., New York, 1934.

Newlove, G. H., *Consolidated Balance Sheets.* Ronald Press Co., New York, 1926.

Securities and Exchange Commission, *Uniform System of Accounts for Public Utility Holding Companies.* U. S. Government Printing Office, Washington, D. C., 1938.

Simons, A. J., *Holding Companies.* Pitman & Sons, London, 1927.

Waterman, Merwin H., *Financial Policies of Public Utility Holding Companies.* Bureau of Business Research, University of Michigan, Ann Arbor, 1932.

PROBLEMS

PROBLEMS FOR CHAPTER II

(Miscellaneous problems will be found at page 566)

1. The Jewel Tea Co., Inc., published a balance sheet showing on the lefthand side the amount of each asset per employee and the "Total value of the property needed to provide a job for each member of the Jewel staff . . . $2,875.89." The righthand side of the statement is given below:

		Amount per Employee
HOW THAT PROPERTY WAS OBTAINED		
Money owed to:		
People for green coffee, bulk tea and rice, and other materials; for groceries, meats, and dairy products; for services to Jewel, etc.	$281.92	
Governments—Federal, state, and local—for taxes	143.72	
The Jewel staff for their cash bonds and savings deposits held in trust and invested as shown under "Property needed"	138.38	
Miscellaneous—for items of expense not paid	2.13	
Total money owed		$ 566.15
Money saved by Jewel for emergencies such as automobile accident and fire losses, floods, etc.; improvements in equipment; and development of the business		201.81
Invested and risked by the 3,894 stockholders who own the Jewel business, to provide jobs for the staff and to earn dividends for themselves		1,416.20
(There is one person employed on the staff for each 80 shares of capital stock outstanding.)		
Money earned and saved by Jewel which in time of depression insures not only security of the investment of stockholders, but also security of jobs for the staff and continuity of service to customers		691.73
Total money supplied by stockholders and owed to others to provide a job for each member of the Jewel staff		$2,875.89

(a) Select commonly used titles for the above items and redraft the righthand side of the statement.

(b) To whom is the statement addressed?

(c) Do you think it desirable that more statements of this kind be published?

2. Prepare a balance sheet in report form, using standard titles, from the following data:

C. R. Wilson paid $2,000.00 for a plot of ground on which he erected a store building at a cost of $7,000.00. The Security Savings

Bank holds a $5,000.00 mortgage against the property. He has a checking account at the First National Bank with a balance of $482.50 but he owes the bank $750.00 on an unsecured note and $15.00 unpaid interest. He also owes a total of $350.00 on open account to various wholesale companies. He has claims against customers amounting to $475.30, all of which he believes collectible. His other property consists of the following items valued at the amounts indicated:

Stock-in-Trade	$5,500.00
Delivery Truck	600.00
Cash on Hand	74.20
Store Fixtures	3,500.00

3. Illustrate how the two notes listed below should appear in the maker's balance sheet so as to indicate most accurately the true facts:

1. On the date of issue;
2. At the end of 6 months;

Accept the amounts as stated to be correct.

a. Non-interest bearing note for $1,000.00 due in 1 year, discounted at 5% on date of issue. Proceeds $952.38.
b. Note at 5% for $952.38 due in 1 year. Proceeds $952.38. Interest for 1 year $47.62.

(Adapted from Wisconsin C.P.A. Exam.)

4. The following amounts are taken from the books of a certain company. Set down all balances which constitute a part of the company's net worth and give the total net worth.

Various Assets	$288,000	
Various Liabilities		$ 85,000
Capital Stock		130,000
Paid-in Surplus		20,000
Earned Surplus	7,000	
Loss on Sale of Treasury Stock	2,000	
Reserve for Working Capital		10,000
Reserve for Property Taxes		1,500
Reserve for Bad Debts		3,500
Reserve for Sinking Fund		25,000
Reserve for Depreciation		22,000
Totals	$297,000	$297,000

5. The net worth section of a corporation balance sheet shows the following accounts:

Preferred Stock, 6% Cumulative	$300,000
Preferred Stock, 6% Noncumulative	200,000
Common Stock, par 100	600,000
Unappropriated Surplus	72,000

(a) What is the amount of dividends that would be payable to each class of stock if the entire surplus were distributed? Both preferred issues participate at an equal rate with the common after all stock has received 6%. The company began business just two years previous to the date of the balance sheet and has paid no dividends.
(b) Same as (a) above except that surplus is assumed to be $106,000.

6. Reserves have been classified as:

Valuation Reserves.
Liability Reserves.
Proprietorship Reserves.

Indicate without comment in which class you would place the following by writing "V" (Valuation), "L" (Liability), or "P" (Proprietorship) to the right of the numbers on a separate sheet of paper:

1. Reserve for depreciation.
2. Reserve for sinking fund.
3. Reserve for extension of plant.
4. Reserve for property taxes.
5. Reserve for doubtful accounts.
6. Reserve for self-insurance.
7. Reserve for pensions due to aged employees.
8. Reserve for cash discounts on sales.
9. Reserve for estimated income taxes.
10. Reserve for personal injury suit (unfavorable decision expected).
11. Reserve for contingencies (provision for possible but improbable future losses).
12. Reserve for retirement of bonds issued.
13. Special reserve against a future market decline in inventories.
14. Reserve for unrealized profit in branch inventories.
15. Reserve for obsolescence.
16. Reserve for working capital.
17. Reserve for depletion.
18. Reserve for appreciation per appraisal.
19. Book value of bonds over market value reserve.
20. Secret reserve created by excessive depreciation charges.

7. Construct a skeleton balance sheet for an industrial concern inserting the following items in their respective proper places:

1. Federal taxes amounting to $58,000.00 proposed to be assessed but disputed and still in process of negotiation.
2. Sinking fund cash, $10,210.00.
3. Sinking fund reserve, $85,000.00.

4. Company's own bonds purchased with sinking fund cash for $56,710.92; par value, $75,000.00.
5. Appropriated from surplus as "Insurance Reserve," $65,000.00. (Company carries its own insurance.)
6. Reserve for accidents, $10,000.00, created by a charge to operating expense. (Claims arising from accidents aggregate $100,000.00.)
7. Stock subscriptions unpaid aggregating $75,000.00. These are due three months from the balance sheet date.
8. The common stock is "no par." Part has been paid in at $5.00, part at $7.50 and part at $10.00 per share.
9. $50,000.00 of bonds outstanding are due one month following the balance sheet date.

(A.I.A. Examination)

8. A corporation presents the following condensed statement as of the close of the year:

Cash	$ 90,000	Dividends Payable	$ .....
Other Assets	1,510,000	Other Liabilities	500,000
		Common Stock	500,000
		6% Preferred Stock	300,000
		8% Preferred Stock	200,000
		Surplus	100,000
	$1,600,000		$1,600,000

The 6% stock is cumulative, the 8% stock is noncumulative, and both participate equally in the remaining surplus profits by being entitled to an extra dividend equal to the excess of any common dividend rate over and above 6% per annum. The balance in Surplus represents the excess of the profits for the current year over operating losses of the two preceding years. You may assume that the maximum dividends are to be declared.

A. Compute the book value per share for each class of stock in the following cases:

1. Current year's dividends unpaid.
2. Dividends unpaid for two years.
3. Dividends unpaid for three years.

B. What dividends could legally be declared to the various classes of stockholders, assuming that the 6% stock is nonparticipating, the 8% stock is participating on the basis stated and no dividends are in arrears?

Given: A (1) is computed below in order to illustrate the method and form which may be used.

	6% *Preferred*	8% *Preferred*	*Common*
Capital Stock	$300,000	$200,000	$500,000
6%, 8% and 6% for Current Year	18,000	16,000	30,000
3.6% to All for Remaining Surplus	10,800	7,200	18,000
Total Book Values	$328,800	$223,200	$548,000
Per Share Book Values	109.60	111.60	109.60

(Adapted from A.I.A. Exam.)

CHAPTER III

1. The information given below was taken from the books of J. H. Craft. Two years ago, when he started the business, he had no inventory on hand, as his initial investment was in the form of cash.

	Current Year	*Previous Year*
Goods Sold	$53,000	$42,000
Goods Bought	30,000	28,000
Operating Expenses	10,000	9,000
End Inventories	15,000	10,000

Mr. Craft prepared the following summary:

Total Income	$53,000	$42,000
Total Costs	40,000	37,000
Net Income	$13,000	$ 5,000

Were the profits computed correctly for the two years? If not, show how the calculations should be made.

2. The directors of a certain corporation submitted a statement to its bank in which the net income for the year was shown to be $115,000.

An accounting firm was engaged by the bank to audit the books of account and records of this corporation for the purpose of verifying the net income as shown by the statement.

The audit discloses the following facts which were not taken into consideration:

(a) There was no provision for depreciation, amounting to $27,500;
(b) Dividends of $12,500 on preferred stock were payable on the day following the closing of the books;
(c) Machinery, manufactured by the company for its own use, had been charged to plant account at market prices;
(d) In accordance with the terms of a trust deed, under a bond issue, $15,000 should have been credited to a sinking fund; and
(e) There was included in the net income, reported by the directors, $18,000 derived from transactions apart from the usual business operations of the company.

State in what respects the net income, as reported by the directors, is incorrect and explain how each of the above items should be treated on the statements of the corporation.

(Adapted from A.I.A. Exam.)

3. THE DAYTON RUBBER MANUFACTURING COMPANY

PROFIT AND LOSS STATEMENT

(1) For Year Ended Oct. 31, 1937

(2)	Net Sales		$8,429,841.18
	Cost of Sales		5,860,977.06
	Gross Profit		$2,568,864.12
	Expenses:		
	Selling	$1,201,365.51	
	Administrative and General	346,137.32	1,547,502.83
	Operating Profit		$1,021,361.29
	Income Charges and Credits:		
	Interest Paid and Discounts Allowed	$172,685.84	
	Other Items—Net	18,529.58	191,215.42
	Profit before Inventory Write Down, Federal Income, Excess Profit, and Undistributed Profits Taxes		$ 830,145.87
(3)	Inventory Write Down (To reduce values of inventories on hand to cost, or market, whichever lower as of October 30, 1937)		220,528.16
	Profit before Federal Income, Excess Profits, and Undistributed Profits Taxes		609,617.71
	Federal Income Taxes:		
	Normal Income	$98,080.80	
	Excess Profits	10,082.21	
	Undistributed Profits	53,987.73	162,150.74
	Net Profit		$ 447,466.97
(4)	Provision for Reserve for Loss on Purchase Commitments (To provide reserve for difference between cost and market values of October 30, 1937 of future raw material commitments)		112,632.45
	Net to Surplus		$ 334,834.52

Notes:

(5) The Company at November 1, 1936 adopted the policy of providing for customers' cash discounts by establishing a reserve to provide for such expenses. The amount so provided during the year was $10,838.10 in excess of the discounts allowed. As a result of the adoption of this procedure profits for the year are this amount less than would have been indicated under the former accounting method.

(6) Depreciation on appreciated values amounting to $29,616.15 has been charged to surplus by appreciation.

Various items of the statement above have been numbered. Answer the following questions pertaining to these items:

(1) Is there anything unusual about the period covered by the statement?

(2) What probably accounts for the difference between this figure and gross sales and would the inclusion of the latter give additional value to the statement?
(3) How is the loss ordinarily handled, and what can be said in favor of the company's method of showing it?
(4) Is this item properly deductible after rather than before the net profit figure is obtained? Explain.
(5) Is this information of sufficient importance to justify such a long footnote? Discuss the advantages and disadvantages of handling cash discounts by the reserve method.
(6) What is the meaning of this statement?

4. An owner of a chain of three drug stores submitted comparative profit and loss statements to a person who is considering purchasing the three stores. The prospective purchaser looked over the statements and they appeared all right to him with the exception of the gross profit figures. He asks you to examine that part of the statements given below. In your opinion have the statements been properly prepared?

	January	*February*	*March*
Store #1			
Sales	$4,138.97	$3,631.85	$4,284.99
Less Cost of Sales	2,855.89	2,505.98	2,956.64
Gross Profit	$1,283.08	$1,125.87	$1,328.35
Store #2			
Sales	$4,438.20	$3,774.09	$4,154.68
Less Cost of Sales	3,026.42	2,604.12	2,866.73
Gross Profit	$1,375.78	$1,169.97	$1,287.95
Store #3			
Sales	$3,262.18	$3,201.85	$3,701.59
Less Cost of Sales	2,250.91	2,209.28	2,554.10
Gross Profit	$1,011.27	$ 992.57	$1,147.49

(Adapted from Wisconsin C.P.A. Exam.)

5. Mr. Ward has offered to purchase Mr. Long's business at its present worth plus three years' net earnings and Mr. Long has accepted. Long has on his books "Goodwill," "Merchandise Inventory (at cost before deducting the usual discounts)," "Organization Expense," and "Discount on Bonds Sold," which Ward claims should be adjusted before present worth is computed.

Also, Long has excluded from his computation of net income "Interest on Notes and Accounts Payable," and "Cost of Successful Suit to Defend Patent" on the ground that they are not part of the usual operating expenses and so should not be considered in a transaction of this kind. To this Ward also objects.

You are asked to settle the questions and they have agreed to abide by your decision. State your recommendations.

(Wisconsin C.P.A. Exam.)

6. The following statement was presented by a credit union. Comment on the form.

PROFIT AND LOSS

Expenses:	
Interest Paid	$ 32.50
Other Expenses	170.33
Cash Over and Short	329.00
Guaranty Fund	229.15
Reserve Fund	221.84
Dividends	694.76
Total	$1,677.58
Income:	
Interest Received	$1,191.54
Fines	73.06
Other Income	13.68
Entrance Fees	70.00
Cash Over and Short	329.30
Total	$1,677.58

CHAPTER IV

1. Explain the possible significance of the changes in the following balances taken from comparative balance sheets of a company:

	On a Certain Date	*Six Months Later*
Accounts Receivable	$300,000	$200,000
Notes Receivable	100,000	275,000

2. (a) What is meant by the Natural Business year (special year) in an industry?

(b) Prepare a comparison of Working Capital statement from the following post-closing trial balances for the Showhow Company at the close of two different months and select the one which in your judgment reflects the end of the natural business year.

	June 30		*December 31*	
Cash	$ 42,816		$ 11,262	
Notes Receivable	5,000		21,000	
Notes Receivable Discounted		$ 4,000		$ 16,000
Accounts Receivable	37,149		62,374	
Reserve for Bad Debts		1,850		3,100
Mdse. Inventories	49,368		96,985	
Plant and Equipment	131,640		131,640	
Reserve for Depreciation		26,201		27,482
Goodwill	100,000		100,000	
Prepaid Expenses	400		375	
Notes Payable		15,000		20,000
Accounts Payable		21,577		58,653
Bonds Payable		75,000		75,000
Capital Stock		100,000		100,000
Surplus		122,745		123,401
	$366,373	$366,373	$423,636	$423,636

(c) State (do not discuss) three advantages of preparing financial statements at the end of the natural business year.

(Adapted from Wisconsin C.P.A. Exam.)

3. The current assets of a company are 150% of its current liabilities. Indicate by using the letters "I," "D," and "N" whether the percentage would be increased, decreased, or not affected by the following transactions:

1. The account of a trade creditor is paid.
2. Fixed equipment is sold at its estimated scrap value.
3. A bank loan is obtained.
4. A customer who was unable to pay his account gave his 90-day note to the company.
5. Cash was paid for goods bought for resale.
6. A dividend payable in cash was declared.
7. A stock dividend is distributed.
8. Uncollectible accounts were charged off.
9. An adjustment is made increasing the merchandise inventory and showing the liability for goods purchased but not received.
10. Cash surrender value of life insurance was treated as a current asset. The company decided not to include it in that section and made the necessary adjustment.

4. You are called in to make a special investigation for one of your clients who is in the business of selling an article of merchandise at retail. During the past years he has sold entirely on a cash on delivery basis but has decided to sell on the installment plan. You are asked to determine the working capital that will be required to finance the business on the installment plan. The article sells for $150.00. The down payment is to be $15.00 and installments thereafter are to be paid at the rate of $15.00 per month. Each article costs your client $90.00. During the past year the selling expenses were $30.00 per article sold, the overhead charges $15.00 and the net profit $15.00. Your client must pay for the article at the time he sells it. Based on past sales, the volume for the coming year is estimated to be as follows:

	Quantity Sold		*Quantity Sold*
January	75	July	200
February	125	August	150
March	150	September	150
April	200	October	150
May	400	November	150
June	400	December	150

Prepare a schedule with column headings as given below, showing for each month information similar to that worked out for January. The last column should indicate the maximum working capital requirements.

WORKING CAPITAL REQUIREMENTS (ESTIMATED)

Month	*Quantity Sold*	*Cash Receipts*	*Cash Payments*	*Monthly Excess of*		*Total Cash Deficiency*
				Receipts	*Payments*	
Jan.	75	$1,125	$10,125		$9,000	$9,000

(Adapted from Wisconsin C.P.A. Exam.)

CHAPTER V

1. Which of the two following concerns shows the better working capital position and why?

Company	*M*	*N*
Current Assets	$800,000	$100,000
Current Liabilities	740,000	40,000
Net Current Assets	$ 60,000	$ 60,000

2. Compute the working capital turnover of the Busy Company for each of the two years shown below:

	Last Year	*This Year*
Net Sales	$1,000,000	$1,200,000
Current Assets	300,000	300,000
Current Liabilities	200,000	290,000

In your opinion did the change in the working capital turnovers signify an improvement? Explain.

3. A corporation which is liquidating has assets and liabilities as follows:

Assets		*Liabilities*	
Cash	$56,000	Accounts Payable	$40,000
		Notes Payable	30,000
		Dividends Payable	10,000

The dividends were declared before the company became insolvent and while there was a credit balance in surplus of $12,000. Show how the $56,000 of cash should be distributed.

4. The Chocolate Manufacturing Company has issued preferred stock under an agreement to maintain tangible net assets to an amount not less than 250% of the preferred stock outstanding, and also to maintain current assets at not less than 200% of the current liabilities, with the net working capital to be maintained at not less than 150% of the preferred stock outstanding. The Company submits the following Balance Sheet.

Cash	$ 25,000	
Notes & Accounts Receivable—Net	75,000	
Inventories	100,000	
Total Current Assets	$200,000	
Fixed Assets—Net	150,000	
Goodwill	50,000	
Total Assets		$400,000
Notes Payable (Current Bank Loans)	$ 20,000	
Accounts Payable	30,000	
Bonds Issued	50,000	
Total Liabilities		100,000
Preferred Stock	$100,000	
Common Stock	100,000	
Surplus	100,000	
Total Proprietorship		$300,000

As one representing the interests of the preferred stockholders you ascertain that the bonds were issued during the past year and that the proceeds were used to liquidate current accounts payable. Also that $100,000 of cash was paid to banks a short time before the statement was prepared. Show by means of ratios, the condition before these transactions occurred and also at date of balance sheet. Comment briefly on your findings.

(Adapted from Wisconsin C.P.A. Exam.)

5. The *Y* Corporation shows the following balances in its accounts with banks:

First National	Debit Balance	$20,000
Second National	Overdraft	5,000
Fifth National	Debit Balance	10,000
Total agreeing with cash account		$25,000

State how you would show these balances on its balance sheet and explain why.

In what circumstances would you modify your decision?

(Adapted from A.I.A. Exam.)

6. The Galloway Company presented its balance sheet in two parts. The first part appeared as follows:

WORKING CAPITAL SECTION

Cash on Hand	$ 1,432.17	Accounts Payable	$116,792.10
Cash in Bank	18,719.67	Notes Payable	170,000.00
Cash in Sinking Fund	3,000.00	Reserve for Bad Debts	6,470.09
Inventories	175,257.94	Accrued Taxes	2,791.74
Accounts Receivable	210,867.93	Accrued Interest	3,127.60
Trade Acceptances	81,917.78	Accrued Wages	4,127.80
Notes Receivable	85,645.20		
Cash Surrender Value of Life Insurance	70,942.81		
Office Supplies	2,372.40		
U. S. Bonds and Other Investments	83,000.00	Working Capital	429,846.57
	$733,155.90		$733,155.90

You are called upon to make an analysis of the above. Upon inquiry you receive the following additional data:

1. Employee's "I.O.U.'s" amounting to $300 have been counted as cash.
2. Checks issued to trade creditors for a total of $7,243.00 have been charged against accounts payable but have not been deducted from the bank balance.
3. The company is in the manufacturing business. It has on hand Finished Goods of $86,427.13; Goods in Process, $23,912.70; and Raw Materials, $64,918.11; total, $175,257.94, valued at cost.
4. In Accounts Receivable there are charges of $4,218.74 representing goods shipped out on consignment which have not been sold. The goods were produced at a cost of $3,627.80.
5. $40,000 of Accounts Receivable have been assigned to a finance company. The Galloway Company has an equity in these of $5,000 and has included this amount in its receivables.
6. $25,000 of the Trade Acceptances were received from customers who were unable to pay their accounts when due.
7. The company sold $60,000 of its Notes Receivable to the local bank, making the usual endorsement to transfer title. The company credited its Notes Receivable account by $60,000. The bank still holds $35,000 of these notes.
8. The company owns two $500 Government bonds purchased at par, and 100% of the capital stock of another small manufacturing company for which it paid $82,000.
9. Of the Notes Payable, $130,000 are due to banks and $40,000 to trade creditors.

10. The company has made no entry for a declared but unpaid dividend of $50,000.
11. Only property taxes are included in Accrued Taxes. The estimated income taxes accrued amount to $17,230.

In what way would the above affect the working capital section of the company's statement?

CHAPTER VI

1. The net worth section of the Ardo Corporation's balance sheet shows the following items:

Capital Stock	$300,000	
Less: In treasury	50,000	$250,000
Surplus		220,000
		$470,000

Upon investigation the following facts are found:

1. The company is authorized to issue 4,000 shares of stock with a par value of $100 per share.
2. The total premium on stock sold amounted to $30,000.
3. The company, on the basis of appraisal figures, wrote up its fixed assets $80,000 and credited that amount to the surplus account.
4. The company acquired 500 shares of its own capital stock at a cost of $40,000.
5. The company was incorporated and transacts its business in a state which by statute provides that a corporation shall not purchase its own shares

> . . . when its net assets are less than the sum of its stated capital, its paid-in surplus, any surplus arising from unrealized appreciation in value or revaluation of its assets and any surplus arising from surrender to the corporation of any of its shares, or when by doing so its net assets would be reduced below such sum . . .

In what way would you present the net worth section of the company's balance sheet in order to give more complete information?

2. Comment on the practice of reducing the amount of Capital Stock Outstanding, thus creating a Capital Surplus, and then writing down the assets against such surplus. Assuming that the assets written down remain in the possession of the company and were previously carried at actual cost, indicate in your comments the immediate and the ultimate effect of such revision of capital structure.

(Wisconsin C.P.A. Exam.)

3. Place the numbers of the following on a separate sheet of paper and to the right of each write "T" or "F," thus indicating whether each is a true or false statement.

1. Any company that makes a profit of over $100,000 annually must of necessity have goodwill.
2. The fact that a company has goodwill is in itself sufficient justification for including the item in the balance sheet.
3. It is all right in some cases for a company to carry a goodwill account even though it has no goodwill.
4. The method of calculating goodwill by taking the sum of the earnings for a given number of years is as good a method as can be used.
5. Company *A* and Company *B* earned the same average profits during the past three years; consequently the goodwill of *A* is equal to that of *B*.
6. Organization expenses should not be carried as goodwill.
7. Every concern that has a large number of customers may be said to possess goodwill.
8. If one is calculating goodwill he should use a lower rate of interest in capitalizing the excess earnings than the rate that is used in figuring a return on the tangible investment.
9. Some patents should be written off in less than seventeen years.
10. The word "amortization" more accurately describes the write-off of patent values than does the term "depreciation."
11. The patent account may be properly increased by the cost of law suits incurred in successfully protecting the patent.
12. As a copyright is granted for a term of 28 years it should as a general rule be carried in the balance sheet of a company for that length of time.
13. The cost of some franchises need not be written off.
14. A company may have the legal right to use a trademark even though it is not registered.
15. A leasehold for 99 years should be treated as real property.
16. As intangibles frequently have little or no value at a forced sale they should be omitted from published statements.

4. The following were taken from a description in verse of the balance sheet statement:

"Fixed assets are valued according to cost,
But you have to settle their worth.
Is it more? Is it less? We leave you to guess,
If you can—can you value the Earth?"

* * * * * *

"One asset is omitted—and its worth I want to know,
That asset is the value of the men who run the show!"

Do these lines reveal some limitations of the average balance sheet?

5. A company has the following after-closing trial balance. The stock received in connection with item (5) was resold at par by the company.

	Debit	*Credit*
1. Sundry Assets	$250,000	
2. Sundry Liabilities		$105,000
3. Capital Stock		100,000
4. Surplus		12,000
5. Reserve for Donated Treasury Stock		5,000
6. Reserve for Bad Debts		4,000
7. Reserve for Depletion		3,000
8. Reserve for Depreciation		6,000
9. Reserve for Redemption of Bonds (Required by trust indenture)		10,000
10. Premium on Stock		5,000
	$250,000	$250,000

On a separate sheet of paper give the number of the above accounts which represent:

(a) Amounts legally available for dividends.
(b) Capital surplus.
(c) Restricted surplus.
(d) Valuation reserve.
(e) Net worth.

(Adapted from Ohio C.P.A. Exam).

6. The following ratios, turnovers, and calculations are used in analyzing the statements of business concerns:

1. Working capital ratio.
2. Acid test ratio.
3. Net worth to total liabilities.
4. Book value per share.
5. Earnings per share.
6. Merchandise turnover.
7. Pledged assets to secured liabilities.
8. Sales to fixed assets.
9. Sales to receivables.
10. Per cent of gross profit.
11. Net income to sales.
12. Net working capital.
13. Net income to proprietorship.
14. Sales returns to sales.

On a separate sheet of paper write the letter which precedes each question below and to the right of it place the number or numbers of those ratios or calculations listed above which would be especially significant in an attempt to answer the question.

(a) Is there a tendency toward overinvestment in permanent assets?
(b) Is there a narrow margin between cost of goods sold and sales?
(c) Are secured creditors adequately protected?
(d) Are the owners getting a fair return?
(e) Are short-time obligations likely to be paid when due?
(f) Are current collections good?
(g) Is there any evidence that goods are not of the quality expected by customers?
(h) Is there overinvestment in inventory?
(i) Does the market value of the stock of the company appear too high?
(j) What capital is free for current use?
(k) What is the amount available for stockholders out of each dollar's worth of sales?

7. The A B Public Utility Corporation requires $5,000,000 of additional capital on which it expects to earn a return of 6% per annum. The management is considering two ways of raising the money. One is by selling common stock only, and the other by issuing the following securities:

Bonds	$2,500,000 at 5%
Preferred Stock	1,500,000 at 6%
Common Stock	1,000,000

Compare the rate of return to common stockholders under the two plans. What term is commonly applied to the position of the common stockholder under a capitalization similar to the second plan above, and what are the advantages and disadvantages of such a position?

8. Calculate the turnover of net worth for each company below:

	Company X	*Company Y*
Net Sales	$900,000	$1,000,000
Total Assets	600,000	700,000
Total Liabilities	300,000	500,000

Does the higher turnover show which company used its assets with the greater efficiency? Explain.

CHAPTER VII

1. The annual report of the Caterpillar Tractor Co. contains the following statement:

NET CURRENT ASSETS:	
Cash	$ 2,271,375.84
Notes and Accounts receivable	10,161,538.77
Inventories	22,769,013.50
	$35,202,428.11
Less Current Liabilities	5,324,072.06
Net Current Assets	$29,878,356.05

Net current assets increased $4,772,031.63 during the year. This increase was derived from sources as indicated in the following summary:

Net Current Assets, January 1, 19—			$25,106,324.42
Add:			
Profit for the Year before provision for Federal taxes		$12,429,462.14	
Costs and Losses Which Did Not Require Cash Outlay During the Year:			
Depreciation		2,186,061.10	
Loss on Properties Sold or Scrapped		157,640.09	14,773,163.33
			$39,879,487.75
Deduct:			
Cash Dividends:			
Total Dividends	$9,705,958.75		
Less Paid in Preferred Stock	5,646,720.00	$ 4,059,238.75	
Provision for Federal Taxes		2,260,772.48	
Net Additions to Plant Assets and Miscellaneous Properties, etc.		3,681,120.47	10,001,131.70
Net Current Assets, December 31, 19—			$29,878,356.05

(a) What is the name which is generally applied to a statement of this kind and in what way does the above differ from the usual form?

(b) Are we to assume that a business can increase its current assets by merely writing off depreciation or by selling its properties at a loss? Explain why these items are added to the beginning balance in the summary.

(c) State the advantages and disadvantages in furnishing stockholders with a statement of this kind.

(d) What other terms are commonly used for what is here called "Net Current Assets"? Some writers in accounting and finance believe that the term used may prevent some confusion. Do you agree?

2. The Puzzle Manufacturing Company presents the following balance sheet together with the other facts herein below stated.

Cash	$526,000	
Notes and Accounts Receivable—Net	254,000	
Inventories	371,581	
Fixed Assets—Net	930,251	
Prepaid Expenses	7,168	
Total Assets		$2,089,000
Notes and Accounts Payable	$218,000	
Bonds Issued	500,000	
Accrued Taxes, etc.	21,000	
Total Liabilities		739,000
Common Stock ($100 par)	$750,000	
Surplus	600,000	
Total Proprietary Interest		$1,350,000

Net profit of $162,800 earned during the year just closed is included in the above Surplus. Normal profits average $80,000 annually.

The directors are undecided as to whether they should declare a 10% cash dividend or a 10% stock dividend and have asked you to explain the immediate and the ultimate effect of each action so they may act intelligently.

(a) Show the immediate effects of each action by giving the new balances of all accounts changed.
(b) State the book value per share of stock in each case.
(c) State the long-time advantages and disadvantages of each plan.

(Adapted from Wisconsin C.P.A. Exam.)

3. The following information was reported by the *A* Corporation:

Operations	*First Year*	*Second Year*	
Total Sales	$520,000	$490,000	
Returns and Allowances	30,000	60,000	
Net Sales	$490,000	$430,000	
Cost of Goods Sold	392,000	387,000	
Gross Margin	$ 98,000	$ 43,000	
Selling Expenses	7,840	4,300	
Depreciation	6,000	8,000	
Other Expenses	87,100	78,000	
Net Loss	$ 2,940	$ 47,300	
Assets December 31			
Cash on Hand and in Banks	$ 36,000	$ 20,000	
Accounts Receivable	180,000	300,000	
Goods on Hand	20,000	120,000	
Prepaid Advertising	1,600	800	
Unexpired Insurance	400	1,200	
Land	16,000	16,000	
Building (Less Depr. Res.)	50,000	88,000	
Total Assets	$304,000	$546,000	
Liabilities and Capital December 31			
Accounts Payable	$ 15,800	$140,000	
Owed to Banks	4,900	10,000	
Mortgage Bonds	30,000	50,000	
Capital Stock	200,000	376,000	
Surplus	53,300	30,000	(Dr. Bal.)
Totals	$304,000	$546,000	

A dividend of $36,000 was distributed on January 10 of the second year to stockholders of record as of the previous December 31.

On a sheet of paper write down the figures appearing in parentheses and to the right of each place the amount or other information called for.

THE *A* CORPORATION

STATEMENT OF NEW ASSETS RECEIVED AND THEIR APPLICATION
During the Second Year

Assets Provided		
By Issue of Bonds	(1)	
By Sale of Stock	(2)	
Charges Not Requiring Cash Outlay	(3)	(4)
Assets Applied		
Purchase of Fixed Assets	(5)	
Dividends Paid	(6)	
Lost on Operations	(7)	(8)
Increase in Working Capital		(9)

The ratio of current assets to current liabilities at the end of the first year was approximately (10) to 1.

A year later the ratio was about (11) to 1.

The trend is clearly shown to be (12) (favorable) (unfavorable)

At the end of the first year there were approximately (13) months' net sales uncollected compared with (14) months' a year later, indicating that credit and collection methods have been (15) (efficient) (inefficient)

The amount of cash received from customers in the second year was (16)

Merchandise purchased during the second year amounted to (17)

The payment of the dividend was (18) (legal) (illegal) because (19)

General conclusions as to the management of the company are (20)

CHAPTER VIII

1. THE SWIFT & COMPANY SALES DOLLAR

Paid to Producers (For Cattle, Calves, Hogs, Sheep, Lambs Dairy and Poultry Products, etc.)		76.0 cents
Paid to Employees		10.6
Paid to Manufacturers of Supplies		4.1
Paid to Railroad and Trucking Companies		3.4
Paid to Various Other Agencies:		
Banks and Bondholders	.2 cents	
Federal, State, and Local Governments (Taxes)	.9	

Miscellaneous—Rent, Telegraph, Telephone, Advertising, Pensions, Insurance, and Other Small Items	2.5	
		3.6 cents
Depreciation (to be paid to manufacturers of new equipment)		.8
		98.5 cents
Balance Remaining with Swift & Company as Earnings		1.5
Total		100.0 cents

On sales of $831,000,000, agricultural producers received $631,000,000; employees received $88,000,000; and after all other agencies had been compensated for their services, there remained for the shareholders of the company 1.5 cents on the dollar of sales or a total sum of $12,100,000. Expressed in another way, for every dollar the shareholders earned for their services in supplying the funds, the plants, and the organization that is Swift & Company, employees received over $7 and agricultural producers, over $50.

* * * * * *

Study carefully the foregoing before answering the following questions:

(a) How does the above statement differ from the ordinary form of report?
(b) How do you account for the fact that agricultural producers received over fifty times the amount made available to shareholders?
(c) If all earnings were distributed to stockholders would they receive a dividend of 1.5%?
(d) In what sense may it be said that depreciation is to be paid to manufacturers of new equipment?
(e) Does the depreciation charge make certain that cash will be on hand when the new equipment is purchased?

2. (a) The Hawley Company began business four years ago. Each year 3% of credit sales has been credited to its Reserve of Bad Debts. The following facts are shown by the books of the company:

Year	*Sales on Account*	*Accounts Charged off*
First	$100,000	$2,700
Second	150,000	3,100
Third	200,000	3,700
Fourth	300,000	5,500

Does the periodic addition to the Reserve for Bad Debts appear reasonable?

(b) The following officers own all of the stock of the Bango Corporation. Each devoted his entire time to the business and receives the compensation indicated.

Name	*Official Title*	*Shares Owned*	*Salary*
C. R. Andrews	Pres.	180	$38,000
T. A. Brausch	Vice-Pres.	105	22,000
R. M. Campbell	Sec.	119	25,000
L. O. Andrews	Treas.	71	15,000

The company reports a net profit of $67,000 for the past year. Would you question this figure? Explain.

3. *M*, a wholesale dealer in heavy merchandise, is unable to reconcile the percentage of net profits, as shown by his annual accounts, with the percentages arbitrarily added to cost prices, and asks your assistance in an effort to ascertain the reason therefor.

You investigate and find, first, that effective precautions are taken against theft of material and funds, and that there are adequate checks against shipping merchandise unbilled.

You then obtain the following information from the books of account and the records:

(1) Twenty-five per cent has been added to cost prices in order to obtain an average gross profit of 20% on sales.

(2) Expenses are estimated to amount to a total of 9% on sales, namely, 1% selling, 1½% office, 3½% delivery, 2% general, and 1% executive salaries.

(3) The accounts for the last completed year showed the following:

Net Sales		$2,490,000
Cost of Sales		1,980,000
Gross Profit		$ 510,000
Expenses:		
Selling	$ 23,600	
Delivery	165,100	
Office	37,300	
General	59,000	
Executive	25,000	310,000
Net Profit		$ 200,000

(4) An analysis of the sales for an average month during the year gives the following details, each invoice representing a separate delivery to a customer:

Sales:	*Numbers of Invoices*	*Amount of Sales*
Under $ 6	1,020	$ 2,648
From 6 to $ 10	324	2,679
" 10 " 20	428	6,174
" 20 " 50	583	19,440
" 50 " 100	667	52,630
" 100 " 200	781	102,475
" 200 " 300	225	55,210
Over 300	112	47,000
Average for One Month During the Year	4,140	$288,256

Prepare a statement accounting, so far as possible, for the difference between the estimated and the actual profits, giving the main facts, but avoiding unnecessary details, and indicating what should be done to obtain better operating results.

(A.I.A. Exam.)

4. The following schedules and statements refer to the business of Robert J. Ralston. Following these statements and schedules are ten groups of sentences. In each of these ten groups of sentences there is one sentence that is correct. Select the one sentence in each group that you think is correct and place its number on a sheet of paper to the right of the letter which precedes each group.

SCHEDULE A

CONDENSED BALANCE SHEETS AS OF DEC. 31

	Year 1.	2.	3.	4.
Cash	$ 6,000	$ 1,000	$ 5,000	$ 2,000
Accounts Receivable	17,000	20,000	18,000	20,000
Notes Receivable	1,000	11,000	15,000	26,000
Inventories	80,000	94,000	95,000	102,000
Fixed Assets	46,000	45,000	43,000	41,000
	$150,000	$171,000	$176,000	$191,000
Notes Payable		$ 13,000		$ 23,000
Accounts Payable	$ 38,000	40,000	$ 35,000	35,000
Mortgage			16,000	16,000
Total Liabilities	$ 38,000	$ 53,000	$ 51,000	$ 74,000
Net Worth	112,000	118,000	125,000	117,000
	$150,000	$171,000	$176,000	$191,000

SCHEDULE B

CONDENSED PROFIT AND LOSS STATEMENT FOR YEAR

Sales	$200,000	$150,000	$180,000	$200,000	
Cost of Goods Sold	160,000	105,000	138,600	150,000	
Gross Margin	$ 40,000	$ 45,000	$ 41,400	$ 50,000	
Selling Expense	20,000	27,000	27,000	36,000	
Net Trading Profit	$ 20,000	$ 18,000	$ 14,400	$ 14,000	
Admin. Expense	16,000	12,000	9,000	16,000	
Net Oper. Profit	$ 4,000	$ 6,000	$ 5,400	$ 2,000	Loss
Financial Income	0	0	5,200	0	
Financial Expense	0	0	3,600	6,000	
Net Financial Inc.	0	0	1,600	6,000	Exp.
Net Profit	$ 4,000	$ 6,000	$ 7,000	$ 8,000	Loss

SCHEDULE C

COMPARATIVE % BALANCE SHEET

	Year 1.	2.	3.	4.
Cash	4.0	0.6	2.8	1.1
Receivables	12.0	18.1	18.8	24.1
Inventories	53.3	55.0	54.0	53.3
Fixed Assets	30.7	26.3	24.4	21.5
	100.0	100.0	100.0	100.0
Notes Payable	...	7.6	...	12.0
Accounts Payable	25.3	23.4	19.9	18.4
Mortgage	...	...	9.1	8.3
Total Liabilities	25.3	31.0	29.0	38.7
Proprietorship	74.7	69.0	71.0	61.3
	100.0	100.0	100.0	100.0

SCHEDULE D

COMPARATIVE % PROFIT AND LOSS STATEMENT

Sales	100.0	100.0	100.0	100.0
Cost of Goods Sold	80.0	70.0	77.0	75.0
Gross Margin	20.0	30.0	23.0	25.0
Selling Expense	10.0	18.0	15.0	18.0
Net Trading Profit	10.0	12.0	8.0	7.0
Admin. Expense	8.0	8.0	5.0	8.0
Net Oper. Profit	2.0	4.0	3.0	1.0 Loss
Financial Income	0	0	2.9	...
Financial Expense	0	0	2.0	3.0
Net Fin. Income	0	0	.9	3.0 Exp.
Net Profit	2.0	4.0	3.0	4.0 Loss

SCHEDULE E

COMPARATIVE RATIOS

1. Current Ratio	2.7	2.3	3.8	2.6
2. Current Ratio minus Inv.	0.6	0.6	1.1	0.8
3. Mdse. Turnover	2.0	1.21	1.47	1.53
4. Receivables Turnover	11.1	6.12	5.62	5.06
5. Fixed Asset Turnover	4.3	3.30	4.09	4.8
6. Return on Investment	3.57	5.08	5.6	6.8 Loss

a. Examine the Total Assets—Schedule A.

1. These totals indicate that the business was becoming increasingly prosperous.
2. These totals have no particular significance in themselves.
3. These totals indicate a better current ratio at the end of the last year than at the end of the first year.

4. These totals indicate a better cash position at the end of the last year than at the end of the first year.
5. These totals indicate that the business was tieing up too much capital in assets.

b. Examine the Liabilities—Schedule A. Note the mortgage given in the third year.
1. This mortgage was placed in order to relieve the pressure of accounts and notes payable.
2. This item has no particular significance.
3. This mortgage was necessary to purchase fixed assets.
4. This mortgage was given to increase the proprietorship interest.
5. This mortgage was placed in order to improve the accounts receivable turnover.

c. Examine the Selling Expenses—Schedule B and Schedule D.
1. These figures indicate an improving efficiency.
2. These figures have no significance in themselves.
3. These figures are a warning of inefficient management.
4. The increase in selling expense is probably not an abnormal increase.
5. The gross margin will be seriously affected by these figures.

d. Examine the Receivables—Schedule A, and the Receivables Turnover—Schedule E.
1. These indicate an increasingly inefficient collection policy.
2. These have no particular significance in themselves.
3. These indicate that the concern is actually insolvent.
4. These indicate an insufficient supply of cash.
5. These indicate that the management has wisely built up the total current assets.

e. Examine the Return on Investment—Schedule E.
1. These figures show a high degree of skilled management.
2. There is no significance in these figures.
3. These figures show an improved cash position.
4. The apparent improvement up to the last year is not real, since the increase is tied up in doubtful accounts receivable.
5. These figures indicate that the business has too many notes receivable.

f. Examine the figures on inventories shown in the various schedules.
1. These show that the business is becoming more prosperous.
2. These figures have no significance.
3. The inventories constitute a normal portion of the total assets.
4. There is improvement shown in the third and fourth years as compared with the second year.
5. These indicate that the business will soon become actually insolvent.

g. Examine the Fixed Assets Turnover—Schedule E, and the item "Fixed Assets" in Schedule A.

1. The most efficient use of fixed assets was made in the second year.
2. These figures have no significance.
3. The most efficient use of fixed assets was in the fourth year.
4. The falling off of fixed assets is directly responsible for the loss of the fourth year.
5. The falling off of fixed assets should result in a lower merchandise turnover.

h. Examine the Notes and Accounts Payable—Schedule A.
1. These figures indicate a conservative policy of paying bills promptly.
2. These figures have no significance.
3. These figures suggest that the company is wisely substituting notes payable for accounts payable.
4. These figures suggest that because of poor collections the concern is being forced to substitute notes payable for open accounts.
5. These figures indicate that the company is actually insolvent.

i. Examine the Current Ratio—Schedule E, and the individual Assets and Liabilities—Schedules A and C.
1. The improvement of the third year is due to skillful management.
2. These items have no particular significance in themselves.
3. The apparent improvement of the third year is not a real improvement.
4. These figures indicate an improvement in proprietorship interest.
5. These figures indicate that the business is actually insolvent.

j. A study of the various schedules indicates:
1. The business should purchase new fixed assets and launch upon a program of expansion.
2. Vital information is lacking and no conclusions can be drawn.
3. The business is hopelessly insolvent.
4. The business should be more lenient in its collection policy and seek to obtain a greater volume of sales.
5. The business should tighten down on its collection policy and seek to reduce both receivables and payables.

CHAPTER IX

1. Two companies *M* and *N*, have the same net worth and have had the same average profits for the past four years as is indicated below:

	Net Profits	
Year	*Co. M*	*Co. N*
First	$10,000	$14,000
Second	11,500	12,300
Third	12,200	10,000
Fourth	13,000	10,400
Total Profits	$46,700	$46,700

State which of the two concerns has the greater goodwill, if any, and give your reason.

2. A public utility company has outstanding general mortgage bonds and debentures on which the annual interest requirements are $400,000 and $300,000 respectively. Its last annual report shows earnings for the year of $900,000 after deducting all expenses except the above interest.

A, *B*, and *C* are interested in the company and have calculated the number of times the interest is covered by the earnings, but with varying results.

A says that the general mortgage interest was earned $2\frac{1}{4}$ times and the debenture interest $1\frac{3}{5}$ times.

B is in agreement with *A* as far as the mortgage interest is concerned but he believes that the coverage on the debenture interest is $1\frac{2}{7}$ times.

C, however, maintains that the coverage on both obligations should be stated the same, *ie.*, $1\frac{2}{3}$ times.

Account for the different results obtained and give reasons for agreeing or not agreeing with each. In your opinion is the interest coverage satisfactory for a public utility?

3. A corporation has been in business for many years and both business and plant facilities have been continually expanded. It has regularly made good profits and accumulated a large surplus which is shown without explanation on the balance sheet as a single item.

At an annual meeting the stockholders complain that their dividends have not been commensurate with the prosperity of the corporation as shown by the annual statements, and the president explains vaguely that while most of the surplus is legally available for dividends, there are practical reasons why it cannot be distributed at the present time.

Assuming that the president's explanation is correct, state some possible reasons why the surplus cannot be distributed.

(Adapted from A.I.A. Exam.)

4. Prepare a statement from the following information taken from a corporation's books which will show the rate of earnings on the common stock:

Nonparticipating 6% Preferred Stock Authorized	$100,000.00
Preferred Stock Unissued	60,000.00
Common Stock Issued	110,000.00
Treasury Stock Common	35,000.00
Surplus at the Beginning of the Year	32,872.00
Dividends Paid at the Beginning of the Year	6,900.00
Earnings for the Period	16,500.00

5. The following comparative balance sheets and income accounts of the *A B* Company are submitted to you for scrutiny and comment.

Reporting thereupon, what points would you consider of most importance for the attention of the management? State how you would emphasize these in your report. Suggest any changes in policy or remedies for existing conditions that appear desirable. What additional information would you require before rendering your report? Do any essential facts appear to have been omitted?

THE *A B* COMPANY

COMPARATIVE BALANCE SHEETS

January 1, 1942 and 1941

Assets	1942		1941	
Fixed:				
Buildings (cost)	$1,100,000		$1,000,000	
Plant and Machinery (cost)	1,750,000		1,500,000	
		$2,850,000		$2,500,000
Deferred:				
Experimental Work		500,000		100,000
Current:				
Inventories—				
Raw Materials	500,000		400,000	
Finished Goods	275,000		250,000	
Supplies	60,000		50,000	
Accounts Receivable, Trade	900,000		1,000,000	
Accounts Receivable, Officers	80,000		20,000	
Cash	200,000		300,000	
		2,015,000		2,020,000
		$5,365,000		$4,620,000
Liabilities				
Capital Stock		$2,000,000		$2,000,000
Current:				
Notes Payable to Banks	$1,000,000		$ 500,000	
Accounts Payable, Trade	615,000		620,000	
Dividend Payable	100,000			
		1,715,000		1,120,000
Surplus:				
Balance, Jan. 1, 1941, and 1940	$1,500,000			$1,500,000
Income for Year 1941	250,000			
	1,750,000			
Less Dividend	100,000			
		1,650,000		
		$5,365,000		$4,620,000

COMPARATIVE INCOME ACCOUNTS FOR THE YEAR ENDED

December 31, 1941 and 1940

	1941		1940	
Sales		$9,000,000		$8,000,000
Cost of Sales:				
Raw Materials:				
Inventories, Beginning of Years	$ 400,000		$ 300,000	
Purchases	4,850,000		3,850,000	
	5,250,000		4,150,000	
Inventories, End of Years	500,000		400,000	
	4,750,000		3,750,000	
Direct Labor	2,200,000		2,000,000	
Factory Overhead, Including Supplies	1,550,000		1,800,000	
		8,500,000		7,550,000
Manufacturing Profit		500,000		450,000
Selling Expenses	180,000		160,000	
General and Administrative Expenses	70,000		90,000	
		250,000		250,000
Net Income		$ 250,000		$ 200,000

(A.I.A. Exam.)

CHAPTER X

1. The following statement of manufacturing costs was used to show an increase in unit costs of materials and labor for the last half year as compared to the first half year. In your opinion do the figures support the conclusion stated?

	January 1 to July 1		*July 1 to December 31*	
Raw Materials	$300,000	50%	$402,800	53%
Direct Labor	150,000	25%	205,200	27%
Overhead	150,000	25%	152,000	20%
Total	$600,000	100%	$760,000	100%

2. (a) State briefly what information you would expect to obtain from the following ratios, viz.:

(1) Net Sales to Gross Fixed Assets
(2) Net Sales to Receivables
(3) Cost of Goods Sold to Inventories
(4) Net Worth to Total Assets
(5) Current Assets to Current Liabilities
(6) Cash to Current Liabilities
(7) Net Income to Net Worth

(b) When does the information become really useful?

(A.I.A. Exam.)

3. State your reasoned objections to the form and the substance (a) of the various numbered parts of the following certificate and (b) of the certificate as a whole:

AUDITORS' CERTIFICATE

(1) We have audited the books, accounts and records of Adam & Smith, Inc., as at December 31, 19— and (2) certify that, (3) subject to the realization of the accounts receivable and the inventories, (4) the attached balance sheet is a true and correct statement of the company's financial position for the year. (5) We further certify that the accompanying profit-and-loss account as at December 31, 19— is (6) true and correct according to the books.

JONES, BROWN & COMPANY

(A.I.A. Exam.)

4. Give reasons why you agree or disagree with the following:

I remember when my father was interested in banking. Accountants would bring to him audit reports consisting of thirty or more typewritten pages. He would look at the auditor and say: "Young man, this is all Greek to me. All I want is six figures: (1) gross sales, (2) net profits, (3) amount charged to depreciation, (4) amount owed, (5) cash inventory and property value and (6) cash in the bank. Give me these for a few years back on one sheet of paper, and I will give you my answer in two minutes." I have often thought of my father's wisdom in this statement. I have seen the companies with which I am connected, and those for which our organization is doing work, actually waste hundreds of thousands of dollars on auditors' reports.

CHAPTER XI

1. There are some analysts who believe that the operating ratio has of itself little or no significance in the study of the earning power of railroads. Do the following figures support this view? Explain.

	Railroad			
	R		S	
(Assume same mileage owned and operated)				
Gross Operating Revenues	$25,000,000	100%	$25,000,000	100%
Maintenance of Way and Equipment	8,750,000	35%	5,000,000	20%
Transportation and Other Operating Expenses	8,750,000	35%	12,500,000	50%
Total Operating Expenses	17,500,000	70%	17,500,000	70%

2. The Committee on Public Relations of the Eastern Railroads published the following figures which show how the gross earnings of the Class I railways were spent in 1936 and in 1916.

Item	1936	1916
Railway Operating Revenues	$4,052,734,139	$3,596,865,766
Spent for:		
Labor	1,738,026,186	1,365,776,046
Locomotive Fuel	236,932,279	250,544,862
Other Materials and Supplies	666,308,947	545,199,066
Loss and Damage, Injuries to Persons, Insurance and Pensions	93,924,689	76,890,767
Depreciation and Retirements	196,232,955	119,785,157
Taxes	319,752,721	157,113,372
Equipment and Joint Facility Rentals	134,209,247	41,471,979
Total Expenses and Taxes	$3,385,387,024	$2,556,781,249
Balance Remaining (net railway operating income)	667,347,115	1,040,084,517
Rate of Return	2.59%	5.90%

(a) What are Class I railways?
(b) How does the form and content of this statement differ from the regular Income Account as published by the roads?
(c) Comment on the significant changes between the two periods.
(d) The stated "Rate of Return" is a return on what presumably?

3. The Pere Marquette Railway Company in their annual report dated April 15, 1936, summarized the income for the last calendar year as follows:

RESULTS FOR THE YEAR

1. Operating Revenues	$28,478,081.95
(Increase $3,880,892.07, or 15.78%)	
2. Operating Expenses	21,137,287.29
(Increase $1,711,327.33, or 8.81%)	
Net Operating Revenue	$ 7,340,794.66
(Increase $2,169,564.74, or 41.95%)	
3. Taxes and Uncollectible Railway Revenues	1,216,381.84
(Increase $37,884.89, or 3.21%)	
Railway Operating Income	$ 6,124,412.82
(Increase $2,131,679.85, or 53.39%)	
4. Net Equipment and Joint Facility Rents	1,296,216.17
(Increase $78,148.54, or 5.69%)	
Net Railway Operating Income	$ 4,828,196.65
(Increase $2,209,828.39, or 84.40%)	
5. Miscellaneous Income	366,719.11
(Decrease $53,770.77, or 12.79%)	
Total Gross Income	$ 5,194,915.76
(Increase $2,156,057.62, or 70.95%)	
6. Rentals and Other Payments	172,394.83
(Decrease $17,031.00, or 8.99%)	
Income for Year Available for Interest	$ 5,022,520.93
(Increase $2,173,088.62, or 76.26%)	
7. Interest (67.58% of amount available)	3,394,272.33
(Decrease $70,785.13, or 2.04%)	
Net Income for Year Applicable to Dividends	$ 1,628,248.60
(Compared with a deficit of $615,625.15 last year)	

(a) In a statement prepared in detail which of the items numbered above would likely be expanded and what would be the nature of the accounts added? Answer by number without repeating the titles given.
(b) Is this a comparative statement?
(c) Do you believe a condensed statement of this kind is of value to stockholders who are supplied with a detailed income account?
(d) Was there an increase or decrease in the operating ratio?

4. Define the following terms used in the analysis of railroad statements:

(a) Ton-Miles.
(b) Fixed Charges.
(c) Railway Operating Revenues.
(d) Maintenance.
(e) Traffic Density.
(f) Per Cent Operating Revenue from Freight.
(g) L. C. L.
(h) Average Freight Haul.
(i) I. C. C. Reports.
(j) Rolling Stock.
(k) Funded Debt per Mile.
(l) Capitalization per Mile.

CHAPTER XII

1. The general form and content of the railway balance sheet is indicated below. Compare this statement with the industrial balance sheet: (1) by stating whether each item appearing under the group headings is ordinarily so classified in the industrial balance sheet, and (2) by discussing the general arrangement of the groups.

Assets

Investments:
- Investment in Road and Equipment
- Improvements on Leased Railway Property
- Miscellaneous Physical Property
- Investments in Affiliated Companies

Current Assets:
- Cash
- Loans and Bills Receivable
- Traffic & Car-Service Balances Receivable
- Material and Supplies

Liabilities

Capital Stock:
- Common
- Preferred

Long Term Debt:
- Ceneral Mortgage
- Equipment Trust Obligations

Current Liabilities:
- Audited Accounts and Wages Payable
- Interest Matured Unpaid
- Unmatured Interest Accrued
- Tax Liability

Deferred Assets:
Working Fund Advances
Insurance and Other Funds

Unadjusted Debits:
Rents and Insurance Premiums Paid in Advance
Discount on Funded Debt
Discount on Stock

Deferred Liabilities:
Employees' Pension Fund

Unadjusted Credits:
Insurance & Casualty Reserves
Accrued Depreciation

Corporate Surplus:
Appropriated Surplus
Profit and Loss

2. Which of the two railroads whose condensed statements appear below is in the stronger financial position? Give reasons for your answer.

	Railroad (000 omitted)			
Assets	X		Y	
	Amount	Per Cent	Amount	Per Cent
Investment in Road & Equip.	$710,482	92.1	$321,540	70.7
Improvements on Leased Prop.	320	.0	31,700	7.0
Investments in Affiliated Co.	25,750	3.3	43,000	9.4
Other Investments	650	.1	38,516	8.5
Cash	7,850	1.0	6,704	1.5
Accounts Receivable	8,230	1.1	4,098	.9
Material and Supplies	12,418	1.6	7,553	1.6
Deferred Assets	2,605	.3	822	.2
Unadjusted Debits	3,719	.5	785	.2
Totals	$772,024	100.0	$454,718	100.0
Liabilities				
Preferred Stock	$119,175	15.4	$ 69,700	15.3
Common Stock	130,000	16.8	80,400	17.7
Funded Debt	465,870	60.4	131,654	28.9
Accounts Payable	13,730	1.8	6,297	1.4
Loans & Bills Payable	2,500	.3		
Other Current Liabilities	11,632	1.5	3,241	.7
Accrued Depreciation	5,583	.7	58,720	12.9
Other Unadjusted Credits	12,774	1.7	542	.1
Appropriated Surplus	2,310	.3	92,560	20.4
Profit and Loss	8,450	1.1	11,604	2.6
Totals	$772,024	100.0	$454,718	100.0

3. Class I railways had, on a certain date, outstanding securities in the hands of the public as follows:

Capital Stock	$ 7,001,705,892
Funded Debt	11,340,591,537
Total	$18,342,297,429

(a) In your opinion do these figures reveal a satisfactory situation for the industry as a whole?

(b) The total property investment accounts of the roads at the time was reported at $25,714,360,369. How do you account for the difference in the total figures, and does this difference suggest that the proportions of capital stock and funded debt may be an incomplete test to use in analysis work?
(c) Assuming the correctness of the figures above would you say that the industry is heavily loaded with "watered stock"?

CHAPTER XIII

1. The following is part of the information which is supplied by an investment service company to its subscribers in its analysis of public utilities. State briefly the meaning of the ratios and terms used.
(a) Current Assets ÷ Current Liabilities
(b) Gross Revenue ÷ Net Worth
(c) Gross Revenue ÷ Fixed Assets
(d) Net for Common.
(e) Net Profit ÷ Gross Revenue
(f) Net Profit ÷ Net Worth
(g) Depreciation ÷ Fixed Assets
(h) Depreciation ÷ Gross Operating Revenue
(i) Times Bond Interest Earned
(j) Times Preferred Dividends Earned

2. The following items appeared as deferred charges in the balance sheets of various public utilities. Do you consider them to be proper deferred charges from the standpoint of conventional accounting, disregarding the fact that the treatment shown may be permitted by the regulatory body having jurisdiction? Give reasons.

1. Abandoned Street Railway Properties ($747,824 being amortized)		$1,432,978
2. Sundry Work in Progress		37,455
3. Miscellaneous Items in Suspense. Items being written off over a period of years and charges pending disposition.		647,804
4. Undistributed Clearing Accounts		185,671
5. Unadjusted Insurance Claims	$68,000	
Less: Reserve	24,000	44,000
6. Unexpired Taxes		557,332
7. Renovation Expenses (being amortized)		283,417
8. Organization Expense		845,650
9. Public Service Commission Audit and Appraisal Expense—Unamortized		417,919
10. Commission and Selling Expense on Preferred Stock		356,413
11. Transmission Pipe Line Expenditures Being Amortized over Life of Gas Contracts		814,160
12. Unamortized Discount on Funded Debt		167,370

3. A. The accountants' certificate which accompanied the published statements of a public utility company contained the following paragraph:

The investments in subsidiaries are carried at company's valuations which do not purport to represent realizable values at December 31, 1936, as to which we express no opinion. The corporate deficit as of December 31, 1935, was charged to capital surplus at the end of that year in accordance with approval by stockholders. Interest paid on convertible obligations in 1936 in the form of Scrip Certificates, aggregating approximately $10,711,000 (of which approximately $2,745,000 was applicable to 1936) was charged to capital surplus. Debt discount and expense on bonds still outstanding was charged to capital surplus in prior periods.

1. These comments were made by the accounting firm for what purpose?
2. Do you have any criticism of the company's method of handling the items mentioned? Explain.

B. The same as A above except that the following is substituted for the quoted paragraph:

The company under the retirement method has provided for retirement losses currently realized and in addition has provided a reserve for future retirements. This method does not contemplate a full provision for accrued depreciation as determined by the age and estimated service life of the properties.

C. Does the following appear to be a sound rule?

The remaining unamortized expense of issue of the original bonds and the expense of the exchange are both expenses attributable to the issuance of the new bonds and should be treated as a part of the cost of obtaining the loan. They should accordingly be amortized annually throughout the term of the bonds delivered in exchange for those retired.

(*Great Western Power Co. of Calif.* vs. *Commissioner*, 56 S. ct. 576)

4. Study carefully the following footnote to the balance sheet of the Wisconsin Public Service Corporation and Subsidiary Company, as it is typical of the explanations various companies make in giving the basis of valuation of their property accounts:

Fixed assets, as stated, include the ledger amount ($30,935,100.09 at date of acquisition) of properties, including intangibles, acquired as entireties. These properties were recorded at ledger amounts which, less approximately $2,344,000.00 retirement reserves taken over and merged with the retirement reserve of the Corporation, were $764,142.10 in excess of the net ledger amounts as reflected on the books of the predecessor companies and $1,982,015.08 in excess of their aggregate cost to the Corporation and/or values assigned to securities issued in connection with their acquisition. The amount of $1,982,-

015.08 was credited to capital surplus. The balance of fixed assets is stated at cost with the exception of appreciation, reflected on the books of the Corporation in 1907 in the amount of $675,168.37 through a charge to property, plant and equipment and concurrent credit to surplus which was immediately distributed as a stock dividend. The consolidated retirement reserve includes the reserve of the subsidiary company which at date of acquisition amounted to $375,997.85.

Since large sections of the total properties of the Corporation were acquired as entireties and not appraised as of the date of acquisition it is impossible to determine the cost to the Corporation of intangibles included in such purchases and reflected above in property, plant and equipment.

(a) What might account for the increasing number and length of notations and footnotes similar to the above being published in financial reports? Do you believe such disclosures are desirable?

(b) Would you consider it likely that the fixed property accounts of any large utility company would be carried at present sale or replacement value?

(c) The footnote quoted illustrates the practical difficulty utilities encounter in explaining in a few words the basis of valuation of fixed assets. The explanations themselves may not be clear to every one who happens to read the company's report. Suppose such a reader wants to know, for instance, the net ledger amounts of the properties acquired as entireties as reflected on the books of the predecessor companies. What would your answer be?

(d) Do you think the $1,982,015.08 was a proper credit to capital surplus?

(e) Was the write-up of $675,168.37 and the distribution of a stock dividend of the same amount in accordance with good accounting practice?

5. Examine the statement below and answer the questions which follow. Each question is preceded by a letter which also designates the item in the statement to which the question refers.

CENTRAL STATES ELECTRIC CORPORATION
AND WHOLLY OWNED SUBSIDIARIES

CONSOLIDATED SURPLUS ACCOUNT (g)

Year 193—

Balance, January 1, 19—	$13,497,619.43	
Deduct Deficiency of Cash Income for the Year, per Income Account	2,312,257.68	(a)
	$11,185,361.75	
Deduct Losses Realized on Sale of Securities (net), etc.	2,913,288.18	(b)
	$ 8,272,073.57	

Add:			
Profit Arising from Purchase of Debentures During Year	$800,544.01	(c)	
Credit Arising Through Issuance of Common Stock in Payment of Interest on Optional 5½% Debentures, Series Due 1954	950.85	(d)	
		801,494.86	
		$ 9,073,568.43	
Transferred to Reserve for Contingencies		210,000.00	(e)
Balance, December 31, 19— (consisting of balance of credits accumulated from valuation of stock dividends received), carried to Balance Sheet		$ 8,863,568.43	(f)

(a) It might be inferred from the words "Cash Income" that the income account was prepared on the cash basis rather than the accrual basis. Assuming that you had the Company's Balance Sheet and Income Account before you, explain how you would determine which basis was used.
(b) Would you say that this item represents securities issued by Central States Electric Corporation?
(c) Same as (b) above.
(d) Has this item any special significance?
(e) What is probably the purpose of this Reserve?
(f) In your opinion does this balance represent true surplus? Explain fully.
(g) State briefly the purpose of this kind of statement.

CHAPTER XIV

1. The following condensed statement was prepared by the bookkeeper of the Duwell Manufacturing Company.

ANNUAL STATEMENT

Assets		*Liabilities*	
Real Estate	$ 70,000	Capital Stock	$100,000
Cash	16,000	Mortgage Bonds	100,000
Goodwill	50,000	Reserves	23,000
Equipment	85,000	Due Banks	25,000
Inventories	65,000	Trade Creditors	52,000
Receivables	48,000	Surplus	34,000
	$334,000		$334,000

(a) How do you account for the fact that the Cash is less than the Surplus?
(b) What improvements in the form of the statement could you suggest to the bookkeeper?

(c) The directors wish to declare a 10% dividend. Would you recommend that it be paid in cash or stock?
(d) Would you say that the company was over- or undercapitalized?
(e) Would you consider the bonds a good investment?
(f) How would you calculate the book value of each share of stock?
(g) Would you rather buy a share of stock than one of the bonds? What additional information would you ask for before making a final decision?
(h) What significant ratios can be calculated from the data supplied?
(i) Indicate which items would be increased or decreased by the following transactions:
  (1) Distribution of a 10% stock dividend.
  (2) Payment of 5% interest on bonds.
  (3) Creation of a $4,000 reserve for bad debts.

2. Analyze the following balance sheet fully and show your familiarity with the application of principles by explaining completely the significance of the various ratios obtained. A definite decision should be made as to the general credit standing of the corporation.

THE RADICAL CORPORATION

BALANCE SHEET, JANUARY 1, 19—

Assets		*Liabilities & Capital*	
Cash	$ 85,000	Notes Payable	$ 100,000
Accounts Receivable	225,000	Accounts Payable	200,000
Inventory	400,000	Other Current Liab.	10,000
Plant & Equipment	750,000	Bonds Payable	500,000
Goodwill	600,000	Capital Stock	1,000,000
Misc. Assets	40,000	Surplus	290,000
	$2,100,000		$2,100,000

Sales for Year	$2,000,000
Cost of Sales	1,200,000
Net Profit	300,000
Dividends Paid	70,000
Terms of Sale	"net 30 days"

(Wisconsin C.P.A. Exam.)

3. On a separate sheet of paper write down the number of each of the following and place your answer to the right of it.

Examination of the statements of a business reveals the changes listed below. Indicate by letter "F" and "U" whether you would ordinarily consider each a favorable or an unfavorable tendency.

1. Per cent of fixed assets to total assets decreased.
2. Per cent of inventories to total current assets increased.
3. Per cent of cost of goods sold to net sales decreased.
4. Per cent of sales returns and allowances to net sales decreased.

5. Per cent of current assets to current liabilities decreased.
6. Net working capital increased.
7. Creditors are furnishing a larger proportion of the total investment.

CHAPTER XV

1. BLANK MINING COMPANY

PROFIT AND LOSS STATEMENT

December 31, 19—

Gross Returns from Ores Shipped to Smelter		$418,731.72
Deduct—Metals in Process (estimated)		75,203.42
Gross Smelter Returns Accounted for		$343,528.30
Deduct—Mining Costs and Expenses		
Labor and Materials, Mining	$171,937.16	
Labor and Materials, Repairs, Betterments	189,053.23	
Insurance—Fire Liability	22,209.62	
Taxes—State, City, County	2,971.41	
Dismantling and Moving Unused Property	6,451.35	392,622.77
Balance		$ 49,094.47
Add—Miscellaneous Items		
Receivership Costs and Expenses	$67,667.45	
Legal, Traveling, Auditing	11,790.97	
Transfer Agents and Registrars	3,806.74	
Depreciation	30,388.03	113,653.19
Total		$162,747.66
Deduct		
Miscellaneous Income	$ 5,363.52	
Interest	23,073.16	28,436.68
Balance		$134,310.98
Deduct—Metals in Process (above)		75,203.42
		$59,107.56

The above statement, accompanied by an accountant's certificate, was published in the annual report of a certain mining company. Shortly thereafter a large city newspaper ran an article in the financial section stating that the company "shows a balance after deduction of all charges, of $59,107 for the year."

(a) What criticism or other comments have you to offer?
(b) Recast the statement in more intelligible form. Segregate nonoperating items and show after computing ordinary gain or loss. Assume that the following amounts are nonoperating: $6,451.35 $67,667.45 $3,806.74 $5,363.52 $23,073.16. Also assume that the initial inventory and the final inventory were equal ($75,203.42).

2. The Deep Well Oil Company published the following as a balance sheet:

1. Capital Stock Authorized		$110,000.00
2. Capital Stock Unissued	$ 99,399.70	
3. Preferred Stock Subscribed		100.00
4. Subscriptions Receivable	75,000	
10. Oil Leases	9,999.97	
12. Preorganization Expense	470.00	
13. Incorporation Expense	55.70	
14. General Expense	75.33	
15. Office Expense	87.65	
16. Field Expense	75.00	
30. W. B. Ladd		171.22
31. C. B. Garnett		75.00
32. H. C. Beeler		75.00
Cash	182.87	
	$110,421.22	$110,421.22

Criticize the statement.

3. A mining company shows the following balances:

Unappropriated Surplus	$150,000.00
Sinking Fund Reserve	50,000.00
Reserve for Depletion	100,000.00
Reserve for Possible Underdepletion	25,000.00

The Sinking Fund Reserve has been created in accordance with the agreement with the bondholders of the company. There is only one class of stock outstanding. Assuming that there are no net worth accounts, other than those listed above, state what amount is legally available for dividends.

4. The directors of the *D* Mining Company plan to issue bonds of the company in order to raise needed funds. They wish to state in a circular advertising the bonds the amount of "net profits available for interest charges." They want to know if depletion must be deducted before such a statement can be properly made.

Write a letter to the directors advising them what the proper treatment would be, giving reasons for your opinion.

5. The President's report to stockholders of the Barnsdall Oil Company included the following:

Effective as of December 31, 1937, your Company acquired the entire capital stock of the Greta Oil Corporation, a Delaware corporation. The acquisition was made on the basis of 54,570 shares of Barnsdall Oil Company stock, and, in addition, Barnsdall assumed liabilities of the Greta Oil Corporation amounting to $1,132,856.73.

In appraising the properties, $486,688.05 was considered "tangible" and charged to "Property Account." Following our conservative policy, $1,780,836.51 was charged to "Lease Purchases." The assumption of such a large amount of current liabilities and the unusually heavy charge to earnings for lease purchases in the last few days of the year necessarily affected the balance sheet as well as the net earnings.

Explain how the present and future financial statements of the company will be affected by this transaction. In what other way might the amount deducted from current earnings have been treated?

6. The Black Coal Company showed the following balance sheet immediately after the organization of the corporation:

Assets		*Net Worth*	
Coal Lands	$400,000	Capital Stock	$500,000
Other Assets	200,000	Surplus	100,000
	$600,000		$600,000

It was estimated that there were 4,000,000 tons of coal in the lands. During the first year of operations, 1,000,000 tons were mined and 800,000 tons were sold at a profit of 50 cents a ton after deducting all costs.

Present a condensed balance sheet of the company as of the end of the year.

7. Early income tax laws and Supreme Court decisions did not allow companies to deduct depletion in computing taxable net income. That depletion has attained recognition is evidenced by the following statement made in 1927 by the Supreme Court in U. S. *v.* Ludey, 274 U. S. 295, page 302:

The depletion charge permitted as a deduction from the gross income in determining the taxable income of mines for any year represents the reduction in the mineral contents of the reserves from which the product is taken. The reserves are recognized as wasting assets. The depletion effected by operation is likened to the using up of raw material in making the product of a manufacturing establishment. As the cost of the raw material must be deducted from the gross income before the net income can be determined, so the estimated cost of the part of the reserve used up is allowed. The fact that the reserve is hidden from sight presents difficulties in making an estimate of the amount of the deposits. The actual quantity can rarely be measured. It must be approximated. And because the quantity originally in the reserve is not actually known, the percentage of the whole withdrawn in any year, and hence the appropriate depletion charge, is necessarily a rough estimate. But Congress concluded, in the light of experience, that it was better to act upon a rough estimate than to ignore the fact of depletion.

(a) Do you believe that the above is a good statement of the nature of depletion?
(b) Some have said that depletion is similar to depreciation, while others have said that it is more like a gradual sale of an interest in property. Which one of these theories is supported by the decision quoted?
(c) The term "reserve" is used in many different ways in accounting. What is the meaning of "reserves" as used above?
(d) Since, as stated, the depletion charge is necessarily a rough estimate there are some who maintain that the annual provision for depletion should be in excess of that which would be obtained by using estimated quantities. Do you agree with this position?

CHAPTER XVI

1. A certain writer accounts for the main items in a bank's statement in the following manner. Study carefully the various steps and assumptions made and explain why you agree or disagree.

Many people think that a bank is simply an institution with some capital subscribed by stockholders, which invites the people of the community to deposit with it their surplus cash; that this cash constitutes the total deposits of the bank, and that it is lent to other people in the community who can use it to advantage when otherwise it would lie idle. The picture is not quite as simple. On the other hand it is by no means as mysterious as some suppose.

Imagine a new farming community in a cattle range section of the United States, which has no bank and decides to establish one. Leading representatives of the community, which we shall call Rangerville, get together and contribute $100,000 as capital for such an institution, putting up cash. The citizens of the community give the bank a send-off by depositing $400,000, their entire savings, also in cash. The balance sheet of the new bank at this stage would stand as follows:

Assets		*Liabilities*	
Cash	$500,000	Capital	$100,000
		Deposits	400,000
Total	$500,000	Total	$500,000

. . . But the bank knows—as the goldsmiths discovered hundreds of years before—that it does not have to keep all the money deposited with it, for all depositors do not call for their money at one time. Moreover, if one depositor makes payment to another by check, the person receiving the check usually is satisfied to redeposit it in the bank. Actual withdrawals of cash and deposits of cash likewise tend to equalize one another.

The bank, therefore, decides to lend half the cash deposited with it to members of the community with good security to offer.

. . . Now assume that the borrowers take the cash from the bank, spending

it in the community in wages, in buying cattle, in numerous other ways. Then assume that those with whom they spend it, finding themselves with more cash than they had before, decide that they, too, will become bank depositors, and promptly bring back the $250,000 to the bank. The balance sheet now assumes the following form:

Assets		*Liabilities*	
Cash	$500,000	Capital	$100,000
Loans	250,000	Deposits	650,000
Total	$750,000	Total	$750,000

Here is something new in the situation. There is an expansion of the bank figures on both sides of the balance sheet. The community is now using $750,000, whereas there was only $500,000 altogether in the town when the bank opened. Through its ability to create credit the bank has made it possible for money to increase its usefulness by fifty per cent.

As a matter of fact, it seldom happens that the borrower withdraws his loan in cash. What usually happens is that he simply receives a deposit credit for the amount borrowed against which credit he can draw checks at his convenience. The effect on the balance sheet is the same in either case.

2. Prepare a statement of condition of the Farmers Bank from the following figures (Surplus must be supplied):

Capital Stock	$ 300,000
Undivided Profits	113,344
Collateral Loans	4,335,442
Cashiers Checks	100,589
U. S. Gov. Securities	149,530
Dividends Unpaid	120
Savings Deposits	3,569,219
Savings Cash	189,663
Savings Securities	1,111,605
Savings Loans—Real Estate	1,914,050
Savings Loans—Collateral	353,901
Bills Discounted	7,297,970
Demand Loans	484,725
Overdrafts	2,793
Other Securities	1,249,835
Banking House	500,000
Certified Checks	217,546
Trust Deposits	214,721
Reserved for Interest, Taxes, etc.	97,453
Due to Banks and Bankers	277,315
Cash on Hand	387,213
General Deposits	9,476,593
Certificates of Deposit	4,421,543
Due from Reserve Agents	1,429,640
Due from Banks and Bankers	73,820
Checks and Exchanges	252,234

(Adapted from Conn. C.P.A. Exam.)

3. The following information is obtained from the books of a bank:

	January 1	*December 31*
Total Resources	$825,000	$883,000
Total Deposits and all other liabilities	765,000	823,200
Outstanding Shares of Stock	400	410

The stock issued during the period was sold at par ($100).
Dividends amounting to $6,000 were paid in September.

Prepare a statement showing the profit or loss for the year.

4. The following items appeared in the report of condition of a National Bank. Classify each as an asset, liability, or capital account by placing the letter "A," "L," or "C" to the right of its number on a separate sheet of paper:

1. Bank premises owned.
2. Real estate owned other than bank premises.
3. Time deposits of individuals, partnerships, and corporations.
4. Mortgages or other liens on bank premises.
5. Capital stock.
6. Loans and discounts (including overdrafts).
7. Undivided profits.
8. Demand deposits of individuals, partnerships, and corporations.
9. Deposits of United States Government.
10. Acceptances executed by or for account of this bank and outstanding.
11. Customers' liability to this bank on acceptances outstanding.
12. Other assets.
13. Deposits of States and political subdivisions.
14. Deposits of banks.
15. Other deposits (certified and cashier's checks, etc.).
16. U. S. Government obligations, direct and guaranteed.
17. Obligations of States and political subdivisions.
18. Other bonds, notes, and debentures.
19. Bills payable and rediscounts.
20. Reserve for undeclared dividends.
21. Corporate stocks, including stock of Federal Reserve Bank.
22. Cash balances with other banks.
23. Cash items in process of collection.
24. Surplus.
25. Furniture and fixtures.

5. The following statement was taken from a financial report of the Merchandise National Bank of Chicago.

INCOME AND EXPENSES

FOR YEAR ENDED DECEMBER 31, 1937, COMPARED WITH 1936

	1937	1937 Percent Increase	1936
INCOME			
Interest on Loans	$247,101.52	70%	$145,138.25
Interest on Investments	222,134.92	2%	218,337.40
Exchange Charges	48,465.38	36%	35,632.55
Service Fees	117,247.41	30%	89,868.27
Dividends on Federal Reserve Bank Stock	1,720.65	21%	1,425.00
Operating Income	$636,669.88	30%	$490,401.47
EXPENSES			
Salaries	$201,759.47	53%	$131,720.83
Rent	44,058.51	40%	31,690.50
Telephone, Telegraph, Postage	13,783.75	25%	11,061.63
Advertising, Stationery, and other Expenses	81,432.52	40%	58,524.96
Taxes and Insurance	28,065.67	-14%	32,740.71
Interest on Deposits	79,979.38	28%	62,550.00
Depreciation on Furniture and Fixtures	13,020.00	-19%	16,000.00
Operating Expenses	$462,099.30	34%	$344,288.63
Profit from Operations	174,570.58	19%	146,112.84
Loss from Sale of Securities—Net	8,104.35	-107%	*113,745.99
TOTAL PROFITS FOR YEAR—added to Undivided Profits, as shown below	$166,466.23	-36%	$259,858.83

* Profit.

(a) Assuming that the figures presented are fairly representative of banks in general, what is the main source of income to banks? The chief expense?

(b) Why is the interest income so much greater than the interest expense?

(c) Did service fees in 1937 constitute 30% of the operating income? Show how this percentage was calculated.

(d) If the first five figures in the per cent column are added, and then divided by five, the result is nearly 32%. Why is not this figure used instead of the 30% shown opposite the total operating income?

(e) Summarize the main changes in the income and expenses for the two periods. Is the per cent column helpful in preparing such a summary?

(f) The capital stock and surplus of the bank at December 31, 1937, were equal and their total exactly $1,000,000.00.

(1) Is it unusual for banks to have such a large surplus compared with capital stock? Would it be unusual for industrial companies?

(2) If the total profits for 1937 were distributed what would be the rate of dividend?

There are some who explain the high rates of dividends possible in the banking business by saying that for each dollar received on deposit the bank can expand its interest bearing loans about ten dollars. From your study of the figures above would you say that high dividend rates might be accounted for otherwise?

(g) Is it customary for banks to publish their income and expenses?

CHAPTER XVII

1. ANNUAL STATEMENT

BLANK LIFE INSURANCE COMPANY

Ledger Assets, January 1		$68,526,710.62
Income		
Premiums—New Business	$ 3,665,962.39	
Renewals	7,294,291.50	
Total Premium Income	$10,960,253.89	
Interest Income and Rents	3,432,806.12	
Policy Dividends Left with Co.	69,377.70	
Miscellaneous	257,836.49	
Total Income		$14,720,274.20
Total		$83,246,984.82
Disbursements		
Death Claims Paid	$ 2,162,002.39	
Annuities and Matured Endowments	1,111,770.67	
Dividends and Surrender Values	5,045,250.84	
TOTAL PAID POLICYHOLDERS	$ 8,319,023.90	
Salaries, all Officers & Home Office Empl.	598,494.28	
Medical Examinations & Inspections	129,016.35	
Taxes and Insurance Department Fees	371,297.70	
Commissions, New Business & Renewals	2,174,987.26	
Rent, Advertising, Postage, Printing, Supplies, Furniture, Legal, Branch Office, and Miscellaneous Expense	1,373,086.38	
Total Disbursements		$12,965,905.87
Balance, December 31		$70,281,078.95

Ledger Assets

Real Estate Owned:		
Home Office Building	$ 1,427,421.83	
Other Real Estate	7,395,898.17	
First Mortgage Real Estate Loans:		
On Farm Property	15,704,030.84	
On City Property	9,418,515.38	
Loans to Policyholders	17,041,853.19	
State, County, Municipal & School Bonds	7,280,293.21	
United States Government Bonds	10,189,260.00	
Cash in Banks	1,300,203.05	
Collateral Loans	22,209.52	
Agents' Balances:		
Debit, $236,527.28; Credit, $42,367.41	194,159.87	
Bills Receivable and Miscellaneous	307,233.89	
Total Ledger Assets, Dec. 31		$70,281,078.95

Other Assets

Accrued Interest on Investments	$ 1,894,103.19
Net Premiums in Course of Collection and Deferred	2,033,048.00
Total Resources	$74,208,230.14

Deduct

Agents' Balances	$ 236,527.28	
Policy Loans, Deferred & Uncollected Premiums in Excess of Reserve and Misc.	10,000.00	
Bills Receivable	307,233.89	
Book Value Real Estate Over Market Value	63,830.96	
Amortized Value Bonds Over Market Value	105,819.47	
Book Value of Other Assets Over Market Val.	18,534.33	
Total		$ 741,945.93
Admitted Assets		$73,466,284.21

Liabilities

Legal Reserve		$61,152,166.00
Reserve for Annuities and Installment Settlements		1,628,210.00
Incompleted Policy Claims		385,407.52
Interest, Rent, and Premiums Paid in Advance		405,799.32
Set Aside for Taxes		225,000.00
For Other Accrued Expenses		77,960.96
Assigned Surplus to Policyholders	$ 724,995.34	
Assigned for Depreciation of Assets	1,000,000.00	
Paid-Up Capital	1,000,000.00	
Unassigned Surplus	6,866,745.07	
Total Admitted Surplus Assets to Protect Policyholders		$ 9,591,740.41
Total		$73,466,284.21

Answer the following questions relative to the above statement:

(a) How do you account for the unusual form of the statement?

(b) Would you say that the form and contents are essentially the same as that of the Charge and Discharge statement frequently used by executors, trustees, and receivers and outlined below?

I Charge Myself With:

Assets taken over
Liabilities incurred
Gains on realization of assets
Income received

I Credit Myself With:

Liabilities paid
Losses on disposal of assets
Other losses
Expenses paid
Distributions

Leaving a balance of

Per schedule of assets on hand

(c) It might be inferred from the statement that "Disbursements" is the antonym of "Income." Do you agree? Would you consider the policy dividends left with the company in the amount of $69,377.70 to be true income to the company?
(d) Why are not the "Other Assets" included in the section entitled "Ledger Assets"?
(e) What is the basis of valuation of the company's bonds as included in the total of $73,466,284.21 for Admitted Assets? Is it the usual basis?
(f) Are all the items listed under "Liabilities" real liabilities?
(g) Note that the company has more of its assets invested in loans to policyholders than in any other single account. Is it likely that the company will experience a considerable amount of losses from this source? Why or why not?
(h) Is the Blank Life Insurance Company a mutual company?

2. The following is part of a report published by an insurance reporting service and mailed out by a life insurance company to its policyholders. Is it possible to prepare a complete statement of condition from the data supplied? Comment on the various items mentioned in the report, and give your estimate of the value of the report in general.

Total admitted assets as of December 31, 19—, had increased to $4,812,551.31, a gain for the year. All of these funds have been invested in securities of the highest type, which are well diversified, liquid in nature, and yield a fair return.

Cash in office and banks amounts to $63,180.07, while the company has bonds of $506,046.88, consisting of United States Government, state, county, municipal, railroad, industrial, and miscellaneous bonds, and in addition has high-grade stocks of $59,000. From the foregoing items it will be observed that this company is in an excellent liquid position, having such large holdings of cash and readily marketable securities it could quickly meet any contingency that might arise.

In choice and well-selected first mortgage loans on real estate the company has invested $1,916,167.34. All of these mortgage loans have been made on a most conservative basis, which in no instance exceeded 50% of a fair appraised value of the properties. Real estate, including the company's practical and attractive home office building, is conservatively carried on the low valuation of $954,503.43. On the present increasing real estate market there can be no question that this company will have handsome profits on their real estate holdings, especially in view of the fact that much of this real estate was secured through foreclosure, and at a figure far below its actual worth.

To its policyholders on the sole security of their policy contracts, but in no instance in excess of the cash value, the company has made loans amounting to $914,388.94. This is a material reduction over the previous year (19—), and shows plainly that policyholders have the proper appreciation of having this company's protection free of debt. While policy loans yield a high rate of interest and are therefore desirable from the company's standpoint, this company has generously worked out a plan whereby partial repayment can be made, which automatically decreases the interest charges and increases the protection under the policies. We recommend that policyholders having these loans immediately avail themselves of this plan.

Interest and rents due and accrued on the company's investments total $178,812.25, while uncollected and deferred premiums are carried at $112,-380.61. These uncollected premiums are offset by legal reserves.

Legal reserves maintained to mature its policy contracts as they become due is calculated at $3,858,758.20 and the reserve basis is very strong. The company has a double indemnity reserve of $5,940.69, and a disability reserve of $102,517.12. For supplementary contracts there is a reserve of $76,388.87.

Premiums paid in advance amount to $15,412.71, and the company has set aside $25,000 to cover federal and state taxes estimated to be payable during the coming year (19—). Liabilities of the casualty department amount to $19,826.96.

Voluntarily this company has set aside $25,000 for any possible fluctuation in mortality, and has put up $82,243.01 to care for any depreciation in its assets. Over and above that it has a general contingency reserve of $50,000, this is most conservative practice and bespeaks great credit on the officers.

After the company had made liberal provisions to care for any and all possible liability it still had a net surplus of $225,000, and capital stock fully paid in of $300,000. This taken together with its contingency reserves produces a surplus as regards policyholders of $682,243.01, which is very large in proportion to the company's liabilities and is more than ample to care for any possible contingencies, this places the company in the strongest possible financial condition.

3. A life insurance company shows the following items in its published annual statement:

Income (Receipts) during the year	$23,250,000
Disbursements for the year	18,400,000
Ledger assets at the beginning of the year	75,500,000
Nonledger assets at the end of the year	3,800,000
Nonadmitted assets at the end of the year	490,000
Total of liabilities and paid-up capital at the end of the year	79,750,000

What is the total admitted surplus at the end of the year?

4. A casualty insurance company showed the following items in its annual report:

Interest and Rents	
Received during the year	$ 357,013.11
Due and accrued December 31 of previous year	110,304.15
Due and accrued December 31 of current year	87,009.37
Underwriting Expenses	
Paid during the year	$3,367,237.18
Unpaid December 31 of previous year	398,607.09
Unpaid December 31 of current year	537,065.00

Prepare statements showing the interest and rents earned during the year and the underwriting expenses incurred during the year.

5. The annual report of a life insurance company contained the following statement:

Bonds are carried on the books on what is termed the amortization basis, which produces a fixed rate of income throughout the term of the bond. This involves an adjustment in the book value each year—in some cases an increase, in other cases a decrease. The Company has also made a practice, in compliance with conservative principles, of marking down real estate values by an annual depreciation charge even though the market value may be greater.

(a) Illustrate with assumed figures the amortization basis of carrying bonds and explain how this method produces a fixed rate of income.
(b) Do you consider the amortization basis a good method for a life insurance company to follow in valuing its bonds? Give reasons for your answer.
(c) In your opinion, is the company overly conservative in charging off depreciation on real estate where the market value is greater than the resulting book value?

6. Comment on the following:

———————— INSURANCE COMPANY

CONDENSED STATEMENT AS OF DECEMBED 31, 1941

Income

Total Assets at Close of Business Dec. 31, 1940		$117,967.26
Total Income for Year 1941		28,994.39
	(Red)	$146,961.65

Disbursements

Losses & Loss Adjustment Expenses	$ 10,890.76
Management and Directors' Fees	6,000.00
Printing, Advertising, Office Expense	5,748.19
Car Account and Establishing Agencies	1,231.14
Auto Purchase Account	1,815.00
Agency Commissions	5,563.55
	$ 31,248.64

Assets

Reserve for Losses	$ 10,193.83	
Reserve for Unearned Premiums	9,874.60	
Reserve for Security Value Fluctuation	8,500.00	
Bills Receivable (nonadmitted)	15,668.93	
Surplus	71,475.65	
	$115,713.01	
	(Red)	$146,961.65

(Statement issued by a small insurance company.)

CHAPTER XVIII

1. (a) A holding company purchased 80% of the stock of a subsidiary company, paying $130,000.00 for it. The subsidiary had a capital stock of $100,000.00 and a surplus account of $40,000.00. At what amount should the minority interest and the goodwill appear in a consolidated balance sheet to be made immediately after the purchase of the stock?

(b) State the amount of goodwill and minority interest in a consolidated balance sheet prepared at the end of the year if during the first year after purchase the subsidiary makes a profit of $10,000.00. Assume that no dividends are distributed by the subsidiary. If only the holding company balance sheet is prepared, at what amount will the investment in the subsidiary be carried?

2. A parent company acquired 90% of the stock of a subsidiary company at a cost of $150,000.00. Shortly thereafter the subsidiary distributed a dividend of $20,000.00. At the end of the year it reported a profit of $12,000.00. The parent company shows $18,000.00 income from the subsidiary in its profit and loss statement for the same period. Is the parent company's statement of income correct? Explain.

3. The S company has capital and surplus of $60,000.00 and $30,000.00 respectively. All of its stock is purchased by the H company for $80,000.00. Suggest several ways of showing the excess of book value over the purchase price on a consolidated balance sheet.

4. Company S has 3,000 shares of stock outstanding, 2,700 shares being owned by the H company. A consolidated statement is prepared at a time when the inventory of company S contains goods sold to it by the H company at a profit of $6,000.00. How would you show the inventory on a consolidated balance sheet?

5. Explain the meaning of the following item listed as an asset by the Cities Service Company:

Company's proportion of undistributed surpluses (less deficits) of subsidiary companies from all sources (inclusive of $1,750,070.18 special surplus reserve transferred by one company from replacement reserve)	155,561,518.79	
Deduct surplus of subsidiary companies at respective dates of acquisition	18,938,680.74	136,622,838.05

6. The following represents a condensed summary of parts of comparative consolidated statements of The North American Company contained in a prospectus distributed by an investment house.

CONSOLIDATED BALANCE SHEET

Assets

Property and Plant		$673,954,256
Cash & Securities on Deposit with Trustees		1,884,449
Investments		142,574,198
Current and Working Assets:		
Cash	$16,387,237	
U. S. Government Securities	5,039,375	
Notes and Bills Receivable	583,987	
Accounts Receivable	12,939,368	
Material and Supplies	9,871,730	44,821,697
Prepaid Accounts		1,712,212
Discount and Expense on Securities		13,400,009
		$878,346,821

Liabilities

Preferred Stock	$ 30,333,900
Common Stock	65,954,140
Dividends Payable in Common Stock	1,742,409
Preferred Stock of Subsidiaries	138,794,633
Minority Interests in Capital and Surplus of Subsidiaries	15,601,563
Funded Debt of The North American Company	25,000,000
Funded Debt of Subsidiaries	286,552,713

Current Liabilities:		
Notes and Bills Payable	$13,022,243	
Accounts Payable	3,139,946	
Sundry Current Liabilities	4,568,290	20,730,479
Accrued Liabilities		16,816,319
Reserves:		
Depreciation Reserves		92,595,058
Reserve for Contingencies		12,000,000
Other Reserves		15,958,639
Capital Surplus		31,208,866
Undivided Profits		121,058,102
		$878,346,821

CONSOLIDATED INCOME STATEMENT
TWELVE MONTHS

Gross Earnings		$112,595,410
Operating Expenses, Maintenance, & Taxes		59,246,167
Net Income from Operation		$ 53,349,243
Other Net Income:		
Dividends		$ 7,513,122
Interest		329,567
Other Income less Miscellaneous Credits		(82,741)
Total		$ 61,109,191
Deductions:		
Interest Charges	$16,220,799	
Preferred Dividends of Subsidiaries	8,369,830	
Minority Interests	1,479,880	$ 26,070,509
Balance for Depreciation, Dividends, and Surplus		$ 35,038,682
Appropriations for Depreciation Reserves		13,661,317
Balance for Dividends and Surplus		$ 21,377,365

(a) List all liability items in the order in which they would be paid, assuming complete liquidation of the parent and subsidiary companies. Failure to convey a clear picture of the priority of the various interests has been said to be a shortcoming of the consolidated balance sheet. Do you agree?

(b) Why is it proper to show Dividends Payable in Common Stock as indicated, rather than as a current liability?

(c) What probably are the main items included under Accrued Liabilities and do you consider them to be current liabilities or otherwise?

(d) Calculate the current ratio. Is the result unfavorable? Would it have greater significance in the case of a manufacturing company?

(e) Why do you suppose the Investments of $142,574,198 were not eliminated in the preparation of the consolidated balance sheet?

(f) Would you treat the minority interests as a liability or as a part of the net worth in the consolidated balance sheet? Explain.

(g) What was the approximate rate of depreciation for the year, and how does it compare with the provision made by other electric utility companies? Would you consider the annual charge for depreciation to be an operating or a nonoperating expense?
(h) Would you assume that the dividends income of $7,513,122 represents the amount of dividends received from subsidiary companies?
(i) Explain the item of Minority Interests shown in the income statement.
(j) What item in the income statement would you say included the amortization of bond discount and expense?
(k) What information in addition to that given above should be obtained by a prospective investor in the company?

7. The Holding Company purchased 90 per cent of the common stock of the Subsidiary Company to which it had previously made a loan of $100,000. Present a consolidated balance sheet as of the date of acquisition from the following statements prepared as of the same date:

HOLDING COMPANY

Miscellaneous Assets	$160,000
Investment in Subsidiary Co.	240,000
Advances to Subsidiary Co.	100,000
Total assets	$500,000
Liabilities	$150,000
Capital Stock	225,000
Surplus	125,000
Total Liabilities and Capital	$500,000

SUBSIDIARY COMPANY

Total assets	$400,000
Advances from Holding Co.	$100,000
Other liabilities	50,000
Capital stock	150,000
Surplus	100,000
Total liabilities and capital	$400,000

Miscellaneous Problems

1. A certain joint-stock land bank, in one year, sold lands for $1,090,901, which were carried on its books at $1,828,658. The book figures represented original loans plus costs of foreclosure. During the same year it bought and retired $2,381,000 in face value of its own bonds. Assuming that the bonds were purchased at an average price of 50 per cent of par, did the bank better its financial position by these transactions?

2. A. J. Barley has $10,000 on deposit in a checking account, which he would like to invest. Would you recommend that he buy the notes of the corporation below bearing rates of 3%, 3½% and 4% for maturities of 1 year, 2 years, and 5 years respectively. Mr. Barley is particularly interested in safety of principal.

WISCONSIN BUILDING AND LOAN FINANCE CORPORATION

BALANCE SHEET
December 31, 1937

Assets			*Liabilities*		
Cash in Banks		$ 7,709.23	Notes Payable collateralized by pledged mortgage loans	$600,000.00	
Mortgage Loans:			Other Notes Payable	110,000.00	
Pledged	$609,700.00		Dividends Payable	3,222.53	$713,222.53
Not Pledged	230,467.00	840,167.00			
Stock Loans		16,000.00			
			Capital		
			Capital Stock	$144,000.00	
			Surplus	4,833.70	
			Guaranty Fund	1,820.00	150,653.70
			Total Liabilities and Capital		
Total Assets		$863,876.23			$863,876.23

I have audited the books and records of the Wisconsin Building and Loan Finance Corporation for the year ended December 31, 1937, and hereby certify that the above balance sheet is in accord with the books of account, and, in my opinion, correctly states its financial position as at December 31, 1937. Accrued interest is not reflected in the above balance sheet as the books are kept on a cash basis.

(Signed by a Certified Public Accountant)

The corporation makes loans only to building and loan associations. The loans are secured by mortgages on real estate owned by the borrowing associations and do not exceed 50 per cent of the appraised values. Appraisals are made by a committee of the corporation and also by the Wisconsin State Banking Department, and the lower of the two is taken as the basis. The corporation proposes to issue a note for $10,000 to Mr. Barley to be secured by a pledge of specific mortgages.

3. The statements and questions presented below all pertain to savings and loan associations.

(a) The following condensed report was presented by an association. Comment on the form and contents.

THE SAFEWAY SAVINGS & LOAN ASSOCIATION

PROFIT AND LOSS ACCOUNT
December 31, 1941

Expenses:	
Interest Paid	$ 32.50
Dividends Paid	2,418.73
Cash Over and Short	329.00
Other Expenses	1,927.81
Advertising	180.00
Repairs	322.84
Legal Reserve	400.00
Undivided Profits	130.00
	$5,840.88
Receipts:	
Interest	$3,260.42
Rents	1,760.20
Fines	73.06
Profit on Sale of Real Estate	417.90
Cash Over and Short	329.30
	$5,840.88

(b) Explain the following statement:

It is in the order of listing of Liabilities and Ownership Equity that the Standard Form Reports digress materially from the "common rule" order of listing. A review of the items as listed in the (Statement of Condition) discloses that those items representing "Ownership Equity," namely Shareholders' (Capital) Accounts and Reserve (earmarked net ownership) Accounts have been widely separated and the direct Liability accounts interposed. (*Savings and Loan Accounting*, page 9, American Savings and Loan Institute.)

(c) Why does the Statement of Condition always balance?

(d) What is the Statement of Undivided Profits and what is its purpose?

(e) For what main purposes are financial statements prepared by savings and loan associations?

(f) What suggestions have you for making financial statements of savings and loan associations more readily understood by the layman?

(g) A savings and loan association showed the following item in its statement of condition: RESERVE FOR INCOME COLLECTED IN ADVANCE together with an explanatory note that "This is a reserve account which substantially strengthens the Association." How does this account strengthen the association?

(h) Which is ordinarily a good sign: a high or low percentage of reserve for uncollected interest to mortgage loans? Explain the reason for your answer.

4. Comment on the following statements taken from the sources indicated:

(a) "To say: The company made $10,000,000 but had to spend $8,000,000 of it for taxes, is much better than: We were soaked $8,000,000 for taxes but managed to hang on to $2,000,000 anyhow."

"The balance sheet has to come in, of course, and the operating statement with it. But make sure that auditors' explanations are brief and understandable, or relegate them to a separate page which the readers can easily skip."

"Give enough figures. No stockholder on earth can tell anything about a company unless he has an analysis of reserves."

"Companies: Pep Up Your Annual Reports!" by Edward Laird Cady. *Forbes*, Jan. 1, 1938.

(b) "Why did the —— company, in which I hold common stock, cut off the dividend? Its latest report shows a large surplus, so why doesn't it give some of that money to its stockholders now, when they need it most?" The Chicago *Tribune*.

(c) "The stockholders are not entitled to a division of the profits until all the debts have been paid." 94 Kan. 370, 146 Pac. 1014.

(d) "Nor can an insolvent corporation lawfully declare and distribute a dividend since it cannot have any surplus or net earnings as long as it is unable to pay its debts." 11 Ga. 440.

(e) "Money earned as interest, however well secured, or certain to be eventually paid, cannot in fact be distributed as dividends to stockholders, and does not constitute surplus profits." 72 Cal. 199, 13 Pac. 498.

(f) "The Peoples Gas Light & Coke Co., which serves Chicago, last night announced a Thanksgiving present to its stockholders of a value of nearly $3,500,000. As usual, the present is in the form of rights to subscribe to new stock." The Chicago *Tribune.*

5. Are the following statements correct? Answer "Yes" or "No" by number on a separate sheet.

1. As a general rule it is illegal for a corporation to pay dividends out of the par or stated value of its capital stock.
2. Dividends declared but unpaid should be shown as a liability.
3. The Unissued Capital Stock account is classified as an asset.
4. A preferred stockholder may be said to be a part owner of the business.
5. Distributions to preferred stockholders may be treated as a business expense.
6. Where a company has issued common and preferred shares it is all right to show their total only in the balance sheet under the single title "Capital Stock."
7. A person may be a stockholder even though he has not paid in full for his shares.
8. The total authorized capital stock should be indicated in the balance sheet.
9. The book value of a share of stock has no significance, as the market value may be above or below its book value.
10. Under certain circumstances the Subscriptions Receivable account may be shown as a current asset.
11. Dividends on preferred stock, strictly speaking, are not guaranteed.
12. An oil company may legally pay dividends even though its capital is impaired.
13. Treasury stock is stock which has never been issued.
14. Bond interest is generally considered a fixed charge.
15. The Surplus account never has a lefthand balance.
16. A large cash balance indicates that the company has a large surplus.
17. A bond issued by a corporation is in reality a promissory note.
18. Unamortized Discount on Bonds is not a proper balance sheet item.
19. Organization expense should be written off against current earnings.
20. All reserve balances are a part of net worth.
21. The discount on capital stock should be written off as an operating expense.

6. AMERICAN INTERNATIONAL CORPORATION

BALANCE SHEET

Assets			*As Per Books December 31, 1932*	*Giving Effect to Proposed Reduction of Stated Capital and Write-Down of Securities*
Securities Owned:				
Notes and Bonds			$ 7,867,077.78	$ 5,835,891.63
Preferred Stocks			5,018,800.79	2,093,664.50
Bank Stocks			8,544,970.30	3,154,232.00
Common Stocks			12,409,590.55	5,142,212.50
Total			$33,840,439.42*	$16,226,000.63
Cash			1,087,165.08	1,087,165.08
Participation in Time Loan—Secured Less Reserve			127,833.33	127,833.33
Accounts Receivable:				
Trustees Under Employes' Profit Sharing Plan—Less Reserve			177,907.50	177,907.50
Others			375,060.39	375,060.39
Accrued Interest Receivable			117,666.40	117,666.40
Investment in Sociedade Anonyma Marvin —Less Reserve			1.00	1.00
Investment in Proprietary Company—Wholly Owned—Less Reserve			387,243.43	387,243.43
Total			$36,113,316.55	$18,498,877.76
Liabilities				
Accounts Payable			$ 9,543.01	$ 9,543.01
Accrued Interest Payable on Debentures			390,032.19	390,032.19
New York State Taxes Accrued			16,444.80	16,444.80
20-Year 5½% Convertible Gold Debentures, Due January 1, 1949		$24,987,000.00		
Less in Treasury		10,805,000.00	14,182,000.00	14,182,000.00
Deferred Credits			14,085.80	14,085.00
Reserve for Company's Estimate of Maximum Liability for Additional Taxes of Prior Years, Under Protest			300,000.00	300,000.00
Capital:				
Preferred Stock—Authorized 250,000 Shares—none issued				
Common Stock				
Issued	1,060,955 shs	$15,914,325.00		
Less in Treasury	5,369 "	80,535.00		
Outstanding	1,055,586 "		15,833,790.00	1,055,586.00†
Surplus:				
Earned		$ 358,195.00		
Capital		5,009,225.75	5,367,420.75	2,531,185.96
Total			$36,113,316.55	$18,498,877.76

* On December 31, 1932, securities at a cost of $33,840,439.42 had a valuation of $16,226,000.63.

† $1.00 per share for 1,060,955 shares less 5,369 shares in Treasury.

The above illustrates the effect a severe decline in market values of securities may have on the balance sheet of an investment trust.

(a) The proposed write-down of securities will affect what other accounts?

(b) Do you agree with the statement made to stockholders that: "The proposed change does not affect the number of outstanding shares of stock of your corporation or the asset value thereof"?

(c) What other phrase is often used to describe an "After Giving Effect" balance sheet such as is shown here to the right of the book figures?

(d) What is the meaning of the term Stated Capital used in the title of the second column?

(e) What is probably the reason for not completely writing off the investment which is carried at $1.00?

(f) Could the term "leverage stock" be applied to the common stock of this company?

(g) What might account for the company having such a large part of its debentures "in Treasury"?

(h) From your examination of the balance sheet of the American International Corporation what would you say constitutes the chief income and expense items of the company?

7. Two methods of showing the proprietorship of a certain corporation were presented in the June 1937 issue of the *Certified Public Accountant*. Discuss the differences in these two methods and explain why you prefer one above the other. How was the contingent profit of $18,989.12 shown in the second method calculated?

CAPITAL AND SURPLUS

December 31, 19—

(1) Capital Stock and Surplus			
Preferred Stock (7% cumulative, callable, etc.)			
Authorized and Issued 750 Shares of $100.00 Each			$ 75,000.00
Common Stock			
Authorized and Issued 50,000 Shares of No Par Value			133,391.20
Earned Surplus (Exhibit X)		$112,812.86	
Deduct—Cost of Treasury Stock Purchased			
150 Shares of Preferred Stock	$8,250.00		
5,000 Shares of Common Stock	1,100.00	9,350.00	103,462.86
			$311,854.06
(2) Capital Stock and Surplus			
Preferred Stock (7% cumulative, callable, etc.)			
Authorized		$ 75,000.00	
In Treasury		15,000.00	
Outstanding		$ 60,000.00	$ 60,000.00

Common Stock (no par, etc.)			
Authorized	50,000 Shares		
In Treasury	5,000 Shares		
Outstanding	45,000 Shares		120,052.08
Surplus			
Contingent Profit on Treasury Stock Purchased		$ 18,989.12	
Earned Surplus (Exhibit X)		112,812.86	131,801.98
			$311,854.06

8. Data from annual reports of American Type Founders, Inc., are summarized in the table below, the amounts being rounded off to the nearest dollar.

CONSOLIDATED BALANCE-SHEET DATA

Assets	*March 31, 1941*	*March 31, 1940*
Cash in Banks and on Hand	$ 411,104	$ 613,310
Accounts and Notes Receivable Less Reserves	3,998,171	3,580,055
Inventories of Raw Materials, Goods in Process, and Finished Goods	3,047,179	2,761,043
Subtotal	7,456,454	6,954,408
Assets Identified with Munitions Contract Cash Advanced by Customer, Advances to Subcontractors, and Inventories (See Liability Contra)	2,817,235	.....
Total Current Assets	10,273,689	6,954,408
Plant on the Basis of Appraisal of October 4, 1933 with Subsequent Additions at Cost	3,792,967	3,628,472
Less: Allowance for Depreciation	1,408,800	1,197,340
	2,384,167	2,431,132
Supplies and Other Prepaid and Deferred Items	227,720	199,657
Other Assets	193,221	173,287
Total Assets	$13,078,797	$9,758,484
Liabilities		
Note Payable to Bank, Current	100,000	.....
Accounts Payable	498,352	346,640
Accrued Expenses	191,564	171,876
Current Installments on Contract Payable	14,000	14,000
Reserve for Federal Income and Defense Taxes	61,069	.....
Subtotal	864,985	532,516
Liabilities Identified with Munitions Contract, Accounts Payable and Accountability for Advances (See Asset Contra)	2,817,235	.....
Total Current Liabilities (See Note)	3,682,220	532,516
Notes Payable to Bank, Not Due Within One Year	200,000	300,000
Installments on Contract Payable, Not Due Within One Year	49,000	63,000
Reserve for Such Federal Tax As May Be Payable When Installment Profits Are Realized	105,000	72,500
Fifteen-Year 5% Convertible Sinking-Fund Debentures, Due July 15, 1950	914,790	938,500

Note: Required deposit with trustee for purchase of debentures		
July 15, 1940 ..... $18,421		
July 15, 1941 ..... $60,344		
Total Liabilities	$ 4,951,010	$1,906,516
Capital		
Capital Stock, Par $10, Authorized 750,000 Shares; Issued and Outstanding	5,680,964	5,680,963
Capital Surplus	1,686,277	1,711,741
Earned Surplus Since March 31, 1936	760,546	459,264
Total Capital	$ 8,127,787	$7,851,968

Approximately ⅔ of the receivables which are classed as current are installment notes maturing in one to four years.

Notes payable to bank fall due at the rate of $100,000 a year. Payments due within a year from date of balance sheet are classed as current.

Installments on contract payable fall due at the rate of $14,000 a year. Installments falling due within a year from date of balance sheet are classed as current.

The debentures are convertible into common stock at par.

On March 31, 1941 certain executives held stock purchase options on 40,750 shares of common stock at $10 a share, the options expiring July 31, 1941.

The reduction in capital surplus for the year ending March 31, 1941 was caused by the write-off of unimproved property in process of abandonment for tax liens.

The company has a contract with the British Government for the manufacture of munitions. Working capital requirements for the production of munitions under this contract have been financed by cash advances from the British Government.

DATA FROM STATEMENTS OF CONSOLIDATED INCOME AND EARNED SURPLUS

	For the Year Ending	
	March 31, 1941	*March 31, 1940*
Net Sales	$ 8,065,039	$7,608,477
Net Operating Profit	351,249	75,291
Other Income Less Other Deductions	79,664	61,225
Interest on Debentures	46,120	46,925
Provision for Federal Income and Defense Tax ..	83,510	.....
Net Income to Earned Surplus	$ 301,283	$ 89,591
Provision for Depreciation	$ 240,754	$ 268,086

(a) Excluding assets and liabilities identified with the munitions contract, how does the working capital position on March 31, 1941 compare with that on March 31, 1940?

(b) Why is it that cash has decreased more than $200,000 during the year ending March 31, 1941 although the profit for the same period was more than $300,000?

(c) Assuming that working capital of $2,800,000 was needed for the production of munitions under the contract with the British Government, was the working capital adequate for this purpose without the cash advances which were received?

(d) Is the notation as to the amount of deposit required for the purchase of debenture bonds of significance in connection with the analysis of working capital? Explain.
(e) The reserve for such Federal tax as may be payable when installment profits are realized is not classified as a current liability. However, installment notes receivable are treated as current assets. Comment.
(f) Assuming for the two years following March 31, 1941 that the fixed-asset purchases will be equal to provisions for depreciation, that $60,000 a year will be required for purchase of debentures, how much would working capital increase if the annual profit were
    1. $200,000?
    2. $500,000?
(g) Certain of the executives hold options to purchase common stock at $10 a share. The options expire July 31, 1941. From the data in the problem you are asked for an opinion as to whether the executives should exercise their options.
(h) From the data in the problem would you consider the debentures a conservative investment? Explain your answer.

9. Refer to published reports of the company or to the Survey of American Listed Corporations and make a study of the financial condition of Armour and Co. (Ill.) over a period of five years or more. Point out favorable and unfavorable trends. Compare with Swift and Company, Wilson & Co., Inc., and the Cudahy Packing Company.

10. Make a comparative analysis of the provisions for depreciation of three or more companies in the same industry. Refer for data to the published reports of the companies or to the Survey of American Listed Corporations.

11. Make an analysis of the reports of two companies in the same industry over a period of at least five years from the viewpoint of the prospective investor in common stock. Refer to published reports of the companies or to the Survey of American Listed Corporations published by the Securities Exchange Commission for balance-sheet, income, and expense data; and to Moody's or Standard and Poor's Manuals for information as to capitalization, market prices, and dividends. Examples of companies which would be suitable for comparison are:

(a) Philip Morris and Co., Ltd., Incorporated and R. J. Reynolds Tobacco Company.
(b) American Can Co., and Continental Can Company, Inc.

(c) Nash-Kelvinator Corporation and Chrysler Corporation.
(d) Burroughs Adding Machine Company and International Business Machines Corporation.
(e) National Steel Corporation and Inland Steel Company.
(f) The Firestone Tire and Rubber Company and the B. F. Goodrich Company.

Index

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