Mergers and Acquisitions in Indian Cement Industry- A Diagnostic Analysis

THESIS

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by

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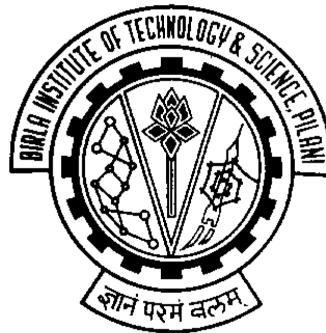
Under the Supervision of
Dr P A Sathyanarayana



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CERTIFICATE

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ABSTRACT

Indian cement sector after liberalization has shown enormous development. The development is reported to have come in line with the Gross Domestic Product (GDP) of the country at a faster pace than GDP in the current decade. When a sector grows with the economic development of the country, and is strongly under the influence of infrastructure sector for which the government is reported to be giving increasing importance, the study of its consolidation gains significance. Mergers and Acquisitions (M&A) has been a tool for many companies for their fast development across many industries around the globe. Indian cement industry has been witnessing M&A after liberalization at an increased pace in different sizes and types. Thus, study of the benefits of M&A in the industry had been taken up to be of immense use to the industry by knowing its impacts on some of the main objectives of M&A's. The study has also been done to be useful for the future M&A activities in the cement industry, which is likely to take place at a brisk pace in next few years.

After the price de-control of Indian cement industry in 1989 and with the economic liberalization adding momentum to it, Indian cement industry had been expanding very fast such that as on March 2010 India is the second largest cement producer in the world. The structure of the industry looks significant as there are 51 manufacturers in India in competition, and still the top four of them controlled by two groups account for 40% of the market share. The factories are located in clusters across India based on the limestone availability for the industry, as it is the basic raw material for the industry.

In the last twenty years big size M&A deals have taken place with all the top four companies involved in it. The deal between Grasim Industries Ltd (GIL) and Larsen and Toubro Ltd (L&T) was one of the biggest in the country across industries. The data of M&A had been taken from Center for Monitoring Indian Economy (CMIE) data base, Securities Exchange Board of India (SEBI) and the annual reports of the companies. The industrial data have been taken from annual reports of the companies, Cement Manufacturers Association (CMA), and CRISIL research.

To understand the impact of M&A in the industry, M&A cases have been taken company wise and studied as the first step. Secondly the overall industry level effect has been studied. For understanding the impact, financial parameters, value additional aspects to the shareholders, operational parameters, and the combined effect of financial and operational parameters on the companies post event had been taken up and studied. Since M&A's involve huge capital outlay in cement sector, how the shareholders react to the event in the industry has also been viewed. In understanding the reaction of shareholders to the announcement of an event, first non cement sector cases have been taken and then cement sector cases have been taken to understand any pattern existing in reactions of shareholders.

After the study, based on the knowledge gained, an event module had been prepared for the Indian cement industry with the hope of making it useful for the future M&A cases.

The study had given beneficial output by way of M&A's having positive impact on the companies in the industry both financially and operationally. The fact that the M&A has a very significant impact of reducing power consumption is an extremely welcome sign as power usage reduction is such a want in India.

With the Indian cement sector expected to grow at 8% in near future and capacities and demand expected to balance out by the year 2013, many more M&A are expected in the industry to cash in on the opportunities and the results of the study is sincerely hoped to be very useful for the Indian cement industry.

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LIST OF ABBREVIATIONS AND SYMBOLS

Abbreviation	Details
ABEL	Ambuja Cement Eastern Ltd
ABG	Aditya Birla Group
ABRL	Ambuja Cement Rajastan Ltd
ACC	ACC Ltd
ACL	Ambuja Cements Ltd
ANOVA	Analysis of Variance
BBIL	Brooke Bond India
BBLIL	Brooke Bond Lipton India
BCG	Boston Consultancy Group
BIFR	Board for Industrial Financial Reconstruction
BSE	Bombay Stock Exchange
CAGR	Compounded Annual Growth Rate
CAR	Cumulative Abnormal Returns
CC	Coal Consumption
CCC	Chettinad Cement Corporation Ltd.
CDC	Commonwealth Development Corporation
CEO	Chief Executive Officer
CMA	Cement Manufacturers Association
CMIE	Center for Monitoring Indian Economy
COCE	Cost of Capital Employed
D/E	Debt Equity ratio
DCBL	Dalmia Cement (Bharat) Ltd
EBIT	Earnings Before Interest and Tax
EIL	Everest Industries Ltd
EPS	Earnings Per Share
ERP	Enterprise Resource Planning
EVA	Economic Value Addition
FDI	Foreign Direct Investment
FI	Financial Institutions
FMCG	Fast Moving Consumer Goods
GACL	Gujarat Ambuja Cements Ltd
GCMMF	Gujarat Cooperative Milk Marketing Federation

Abbreviation	Details
GDP	Gross Domestic Product
GIC	General Insurance Corporation
GIL	Grasim Industries Ltd
GOI	Government of India
GPM	Gross Profit Margin
HBR	Harvard Business Review
HLL	Hindustan Lever Ltd
ICL	India Cements Ltd
ICRA	Information and Credit Rating Agency
IGF	Investor Grievance Forum
IRI	Indian Rayon Industries
JAL	Jaiprakash Associates Ltd
JKCL	JK Cement Ltd
K.Cal/Kg of Clin	Kilo Calories per Kilo gram of Clinker
K.Cal/Kg of Cem	Kilo Calories per Kilo gram of Cement
Kgs/T	Kilograms per Tonne
Kwh	Kilowatt-hour
L&T	Larsen & Toubro Ltd
LBO	Leveraged buy out
LIC	Life Insurance Corporation
LIPL	Lafarge India Private Ltd
M&A	Mergers and Acquisitions
MCL	Madras Cements Ltd
MMF	Multiple merger firms
MS	Market Share
MT	Metric Ton
mt	Million Tonnes
mtpa	Million Tonnes Per Annum
MVA	Market Value Addition
MyCL	Mysore Cements Ltd
NCL	Narmada Cement Ltd
NMMF	Non Multiple merger firms
NPM	Net Profit Margin
NSE	National Stock Exchange
OCLIL	OCL India Ltd
OECD	Organization for Economic Cooperation and Development
OPM	Operating Profit Margin
OR	Operating Rates
P/E	Price Earnings ratio
PC	Power Consumption

Abbreviation	Details
R&D	Research and Development
RCL	Raasi Cements Ltd
RIL	Reliance Industries Ltd
RMC	Ready Mix Concrete
ROCE	Return on Capital Employed
RONW	Return on Net Worth
RPL	Reliance Petrochemicals Ltd
SBI	State Bank of India
SDCCL	Shree Digvijay Cement Company Ltd
SEBI	Securities and Exchange Board of India
SVCL	Sri Vishnu Cement Ltd
T/T	Tonne per Tonne
TOMCO	Tata Oil Mills Company
UTCL	Ultratech Cement Ltd.
UTI	Unit Trust of India
VSF	Viscose Staple Fiber
WB	World Bank
Y-o-Y	Year on Year
ZIL	Zuari Industries Ltd
ZCL	Zuari Cement Ltd
α	Alpha
β	Beta
%/T of clinker	Percentage per Tonne of Clinker

Chapter-I

Introduction

The Indian cement industry is one among the oldest in India and forms part of the six core sectors in the country. The core sectors are ‘Cement’, ‘Electricity’, ‘Refining’, ‘Crude petroleum’, ‘Coal’ and ‘Steel’ [1]. India being a developing country, infrastructure takes an important role in the development and when the fact that one of the main raw material used for infrastructure development is cement, an in-depth study on the industry gains significance.

The Cement production started in India at nearly a hundred years before in the year 1914. The place where it began was in Porbandar with a feeble capacity of 1000 Metric Ton (MT) per annum. Since the inception as on March 2010 the installed capacity stood at approximately 240 Million Tonnes per Annum (mtpa). For the capacity to reach 100mtpa from 1000MT it took nearly 80 years, but from 100mtpa to touch 200 mtpa the time taken was only 10 years. This brings to light the boost that has occurred for the industry and also reflects it has come in the recent past, in less than 20 years [2].

1.1. Main players in the cement Industry:

There are 51 manufacturers in the industry in India and the main players are Ultratech Cement Ltd. (UTCL), Grasim Industries Ltd. (GIL), ACC Ltd. (ACC), Ambuja Cements Ltd. (ACL), India Cements Ltd. (ICL), Jaiprakash Associates Ltd. (JAL), JK Cement Ltd. (JKCL), Madras Cements Ltd. (MCL), Dalmia Cement (Bharat) Ltd. (DCBL), Chettinad Cement Corporation Ltd. (CCC), Lafarge India Private Ltd (LIPL). Of these the first four, namely, UTCL, GIL, ACC and ACL alone have pan India presence [2]. The other main players mentioned are all regional players. Research agencies like CRISIL predicts of more players upgrading to pan India presence by the year 2013 [1].

1.2. Cement industry in India an overview:

The cement plants are located in clusters in the country and the industry is divided in to five regions namely, North, East, West, South and Central zones. Within the regions the plants are located in clusters based on the availability of limestone. Limestone is reported to be a major raw

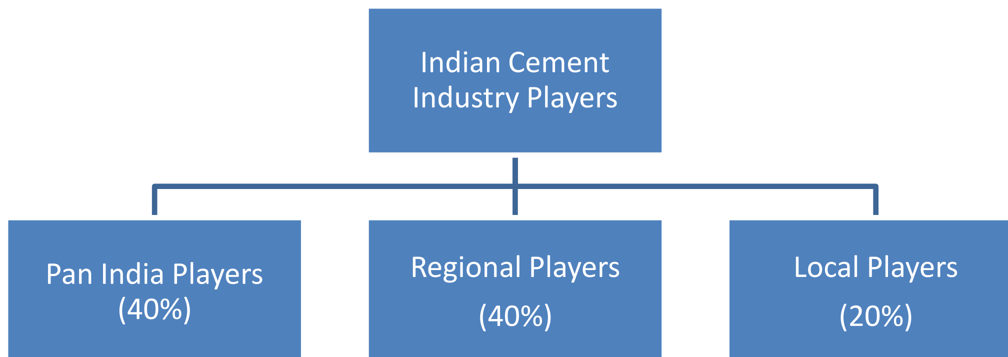
material for the industry and since it is a natural resource available in clusters, the factories are located around the limestone availability areas. Some of the major clusters are Satna (Madhya Pradesh), Chandrapur (Maharashtra), Gulbarga (Karnataka), Yerraguntala and Nalgonda(Andhra Pradesh), Bilaspur (Chattisgarh), Chandoria (Rajasthan), Porbandar, Kach and Jamnagar (Gujarat) [1].

Since cement is a commodity of high volume and low value transportation cost becomes major cost factor due to which the companies try to sell as much as possible at the shortest radius from the factory. In some areas supply is reported to be more than demand and in some areas it is otherwise. When cement availability is high or low depending up on the closeness of the area to the limestone cluster it plays a major role in competition levels in different areas and becomes a very important factor when companies think about consolidation and inorganic growth through M&A's [3].

1.2.1. Structure of the Industry:

The Indian cement industry totally has 160 plants, as on March 2010, situated across the country. The 51 manufacturers in the industry can be divided in to three broad categories like pan India players, regional players and local players. The structure of the manufacturers in the industry can be presented as follows [2] [4].

Fig 1.1: Structure of industry players [1]**:**



Pan India players are the manufacturers who are present almost in all the five regions. The companies that come under this category are ACC and ACL which are basically multinational

giant ‘Holcim’ controlled firms and ‘Aditya Birla Group’ controlled firms namely GIL and UTCL. The combined production capacities of these 2 corporate giants as on March 2010 are as given below:

Table 1.1: Pan India players installed capacities (mtpa):

S. No	**Firm**	**Installed Capacity (mtpa)**
1	Grasim Industries Ltd	22.55
2	Ultratech Cement Ltd	23.1
3	ACC Ltd	26
4	Ambuja Cements Ltd	22
	Total	93.65

[1]

Out of the total industry capacity of 240 mtpa this accounts for almost 40%. They are also leading players in various states they operate and have an influencing role on the prices in the different regions [2] [4].

Table 1.2: The regional players' capacities (mtpa) are:

S. No	Company	Installed capacity (31.3.10) (mtpa)	Regions
1	Binani Cement Ltd	6.08	North and West
2	Birla Corporation Ltd	5.8	North and West
3	CCI Ltd	3.8	South and Central
4	Century Textiles	7.8	West and Central
5	Chettinad Cement Corp. Ltd.	5.6	South
6	Dalmia Cement (Bharat) Ltd	8.5	South
7	Heidelberg Cement India Ltd	3	South and Central
8	India Cements Ltd.	14.05	South and West
9	JK Group	9.9	North and West
10	Jaiprakash Associates Ltd	12.22	North, West and Central
11	Lafarge India P Ltd.	6.5	East
12	Madras Cements Ltd	9.8	South
	Total	93.05	

[2]

These regional players quantity of 93 mtpa works out another 40% of the total capacity of the country and the balance of 20% is produced by the local players who operate locally, mostly within a state or two.

Table 1.3: Major cement producing states of India:

State	Plants (no's)	Major Cluster
Madyapradesh	10	Satna
Andra Pradesh	24	Yeraguntla and Nalgonda
Rajasthan	14	Chandoria
Gujarat	11	Porbandar, Kach, Jamnagar
Tamil Nadu	18	Alathiyur
Maharashtra	7	Chandrapur
Karnataka	7	Gulbarga
Total	91	

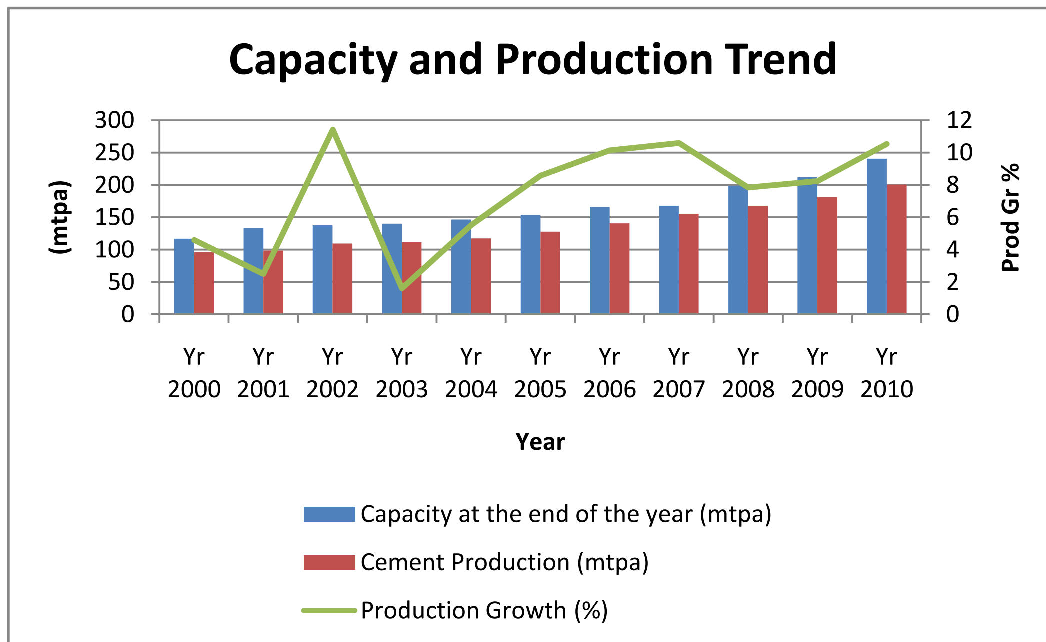
[2]

Table 1.4: Capacity and production trend:

Year (Apr-Mar)	Capacity at the end of the year (mtpa)	Cement Production (mtpa)	Production Growth (%)	CAGR
Yr 2000	116.82	95.95	4.6	**8.54%**
Yr 2001	133.55	98.35	2.5	
Yr 2002	137.53	109.59	11.4	
Yr 2003	140.07	111.35	1.6	
Yr 2004	146.38	117.5	5.5	
Yr 2005	153.59	127.57	8.60	
Yr 2006	165.9	140.5	10.1	
Yr 2007	168	155.4	10.6	
Yr 2008	198.6	167.6	7.9	
Yr 2009	211.81	181.42	8.2	
Yr 2010	240.69	200.54	10.5	

[5]

Fig 1.2: Capacity and Production trend:



[5]

From 'Fig 1.2' it is noticeable that the trend in capacity addition and production are increasing sharply in the current decade. The production trend has been so good that the 'Compounded

Annual Growth Rate (CAGR)' is 8.54%. As referred in 'Table 1.3', among the limestone clusters there are seven major cement producing states which have 91 numbers of cement manufacturing plants.

1.2.2. Demand growth in the near future:

The housing sector has taken the highest percentage of cement consumption, 65%, in the country. With respect to future the infrastructure sector is expected to give real momentum in the coming years of 2011-13 as per Crisil, the research agency. In the next five years, up to 2014, the housing sector portion of cement consumption is expected to be 55% and infrastructure sector share of consumption is expected to touch 30% from the existing level of 17% [3].

Table 1.5: Projection of sector wise share in cement consumption:

Sector	2005-09 (%)	2005-09 (mt)	2010-2014(E) %	2010-2014(E) (mt)
Housing	64	477	55	681
Infrastructure	17	127	30	368
Commercial construction	13	96	11	131
Industrial usage	6	48	4	56
Total		748		1236

(mt- million tonnes, E-Expected) [3].

After facing global recession, the Indian 'Information Technology' sector is witnessing recovery and is expected to give good momentum in both housing sector and commercial construction sector. The government's initiatives in infrastructure plans are the stimulus aspect that help construction sector. The rural income level is likely to rise due to improvement in investment in irrigation development. The growth in infrastructure projects is projected at a CAGR of 33% for the period 2010-2014, which directly leads to higher cement consumption in this period. Some of the projects focused by government are road projects, power projects, and urban infrastructure projects [3].

Table 1.6: Share of cement consumption in projects under infrastructure:

Project	2005-09 % Share	2010-14 % Share
Road	19	20
Power	19	16
Irrigation	31	23
Others	31	41

% share- is the percentage of the total cement consumed by the infrastructure sector [3].

The capital expenditure for increasing business portfolios have been Rs 7.2 trillion by the private sector in the past three years period between, 2005-06 and 2008-09, and is expected to be Rs 10.5 trillion between years 2009-2012. This investment alone, apart from other development needs, is likely to increase cement demand by 5 % in the period referred. Projection of cement demand for the future, calculated using 'bottom up' approach, is expected to grow at a CAGR of 8% up to year 2014 [3].

As at the end of the five year plans implemented by the government, how cement industry stood with installed capacities and production can be seen as given below:

Table 1.7: Cement industry capacity and production at the end of five year plans:

Plan	Year*	Installed Capacity (mtpa)	Production (mtpa)
VII	1989-90	61.74	45.42
VIII	1996-97	66.98	53.61
IX	2001-02	145.9	106.9
X	2006-07	178.55	161.64
XI	2009-10**	240	204

*'Year' corresponds to last year of the respective five year plans, ** corresponds to the previous year to the last year of the XIth five year plan [3] [5].

1.2.3. Capacity addition in cement industry to meet the demand:

Over 50 mtpa of capacity has been added in two years namely 2007-08 and 2008-09.

Table 1.8: Capacity addition trend:

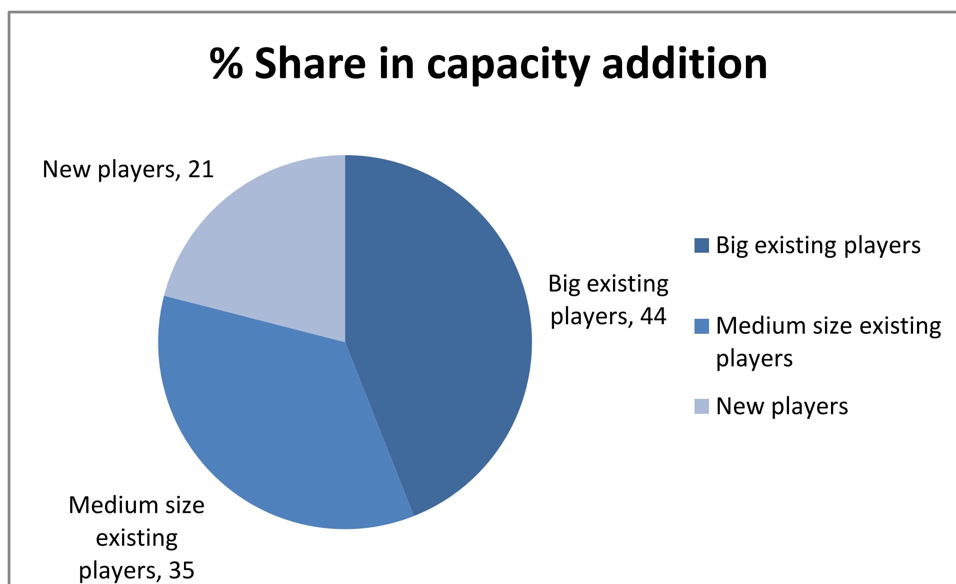
Year	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Capacity addition (mtpa)	7	12	2	31	20	65

Source: [2].

By the year 2014 additional capacities to be added is projected at 150 mtpa. Out of this around 100 mtpa is expected to be added in the short period, by 2013. The capacities are likely to be added across India with major portion of 42% in south India [6].

There is one main difference in the capacity expansion in near future in comparison with the past. It is that the majority of the addition is expected to come from existing players unlike from the new players as it happened in earlier development cycles. The structure of capacity addition in future is projected as follows [7].

Fig 1.3: Existing players share in capacity addition in near future:



[7]

1.2.4. Future structural changes possible:

When the fact that the gestation period for setting up a '1' mtpa plant can be 2 years is considered this structure of capacity addition brings some distinct possibilities in achieving it. When economy predicts good growth and when manufacturers respond with green field expansions then by the time the plants are ready the demand might fluctuate putting pressure on revenues and profitability. One of the ways of capitalizing a good demand situation is by reducing the gestation period with expansion of the existing plants. One more way is the possibility of trying out any plant/plants that can be purchased by acquisition or with merger. The capacity additions planned in the next few years is so hectic that its rate of increase is far higher than the demand growth for cement which may also drive M&A's.

1.2.5. The plant operating rates trend and projections are as follows:

Table 1.9: Average operating rates of Indian cement plants- trend and projection:

Year	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11 E	2011-12 E
Operating rates %	82	89	93	95	88	85	78	82

[8]

Table 1.9 reflects a drop in operational rates to 78% in year 2010, the lowest in the last seven years. This had been due to additional capacities in last three years making supplies higher than demand. For the next year, 2011, it is projected at 82% which is still lower than acceptable levels. For cement companies to make profit and progress by bringing stability in prices the operational rates are expected to be around 90% as can be seen from the performance between years 2005 and 2009.

1.2.6. Restructuring with mergers and acquisitions:

There are three steps which can influence M&A's, namely:

1. Good demand expectation in future driving major players to expand capacities.

2. Due to expansion in capacity in industry out pacing the demand growth in the country, the supply levels can be more than demand; bringing down the prices and profitability due to competition. For example, the prices fell in 2009-10 in two of the regions namely south and west and are likely to fall in other regions in near future.
3. The possibility that due to competition small players may struggle to hold on and make profits in the midst of competition and hence try to sell the companies to a good bidder.

All these envisage the possibility of increase in Mergers and Acquisitions (M&A) activity in Indian cement industry. As companies are on the lookout for expansion in the present context of the industry, M&A's can be a real tool to expand fast. The recent performances from 2005 to 2009 and healthy price trend in that period brings the possibility of good reserves for big players, which makes M&A attractive option to capitalize on the situation.

1.2.7. Indian cement industry's M&A's:

Indian economy has seen real spurt in the number of mergers and acquisitions post liberalization. If we take the current decade there has been an all round growth in M&A activity across almost all industries with increase in Indian companies going across border to acquire or merge with firms outside India, which was next to rare activity before the year 1991. The increase in M&A activity in India in the last 10 years can be seen as given below.

Table 1.10: Details of M&A activity in India (CMIE):

S. No	Year	Acquisitions (no's)	Mergers (no's)	Value (Rs.Cr)
1	1999-00	870	193	32013
2	2000-01	865	350	29218
3	2001-02	827	326	26218
4	2002-03	691	384	20964
5	2003-04	660	316	31127
6	2004-05	665	268	54883
7	2005-06	812	407	87645
8	2006-07	1081	391	238183
9	2007-08	1099	259	93862
10	2008-09	678	160	71654
11	2009-10	566	181	136131

The year which happens to have seen the highest activity is 2006-07. While the numbers have gone up by 20% over previous year the value has increased by 170% to a whopping Rs. 238183 crores. In next year 2007-08 the numbers have been nearly same but the value had come down by more than half which was the period when recession got set at global level. In the next year 2009-10 the notable happening is that, the numbers are low in comparison with 2007-08 in being half of it, but the value is more by 45%. That is, from Rs. 93862 crores it has gone up to Rs. 136131 crores. This shows big deals are coming up which can happen with increased money flow, and the Indian economy is recovering fast [9].

After the financial liberalization in 1991 which happens to be just after the total de-control of cement sector in the year 1989 [1], the cement industry has seen M&A's taking shape. Since 1991 big deals have been involved and have gone through several stages before finalizations. Some of the biggest M&A's in the country running thousands of crores of rupees have come across in Indian cement industry post liberalization. Players from abroad have come in to the country by way taking over performing as well as struggling companies. One of the biggest M&A deals ever seen in India has been that of Grasim Industries Ltd taking over the cement division of Larsen and Toubro Ltd (L&T) [10]. The other big deal has come by way of one of the oldest and biggest Indian cement player, ACC Ltd being taken over by global leader Holcim Ltd of Switzerland [11].

1.3. Significance of the study:

Cement industry is one of the most important components of infrastructure development and the aspect of infrastructure development is likely to play a key role in any developing economy [12]. The structural adjustment of the industry to the economy has been witnessed in the developed economies abroad and is on the way of progressing in India's developing economy. The liberalization in early nineties has started the turnaround for the cement industry with new players coming in and existing players consolidating. These activities have been taking place at fast pace and the investment put in the industry in the period along with the five year plans have been in thousands of crores of rupees. One of the means of consolidation and expansion had been M&A's in the industry. In this context, understanding the mergers and acquisition activities in the industry takes significance.

With the M&A activities, the cement industry is in line with the other industries which are consolidating in the country [13]. Gaining synergy in the operations and making financial prudence with additional capital investments is as important in cement industry as in many other high investment manufacturing sectors [14]. When one of the main expectations of the investors is their value addition and when such addition is also going to support a growing economy, the study of the same and bringing out the salient points which can be useful for the industry gains significance. The present study evaluates the financial and operational aspects of the merging or acquiring firms in the industry apart from evaluating the economic value addition for these firms. The share price reaction in the country with an M&A event announcement has been analyzed taking examples in the recent past [15] [16] [17]. Finally a module has been prepared for the benefit of the industry for future M&A activities.

1.4.Context of the research:

Very often one notices the M&A event taking place across industries in the business world. M&A has taken a position of being part of corporate strategy across industries. Past records throw light on M&A becoming part of India's developing economy across industries. M&A's have started at a brisk pace after early nineties with the industries consolidating with expansions. M&A events have been doing lot of good for the cement industry which has formed part of India's economic growth progress. There is a clear need for study of this aspect for the Indian cement industry. An analysis has been made to understand the financial and operational performance before and after an M&A activity for the firms in the industry. When an industry is expected to support an economy the economic value addition aspect is also analyzed for the firms involved in deals. Before announcing an event like M&A it is good to know the nature of market reaction as the reaction is a reflection of shareholders approval for the event. Thus, one of the objectives has been to understand the shareholders reaction for an M&A event in India in recent past and use the good aspects in the industry for future events.

1.5.The conceptual framework:

a) Mergers: When two firms combine in to one it is a merger of two firms. In a merger one firm's identity may go and the other firm's identity may exist or both the identities may go and a new firm may emerge with a new name. A merger may take place straight after the event or at a later stage after initially the two firms operating separately. There have

been occasions when more than two companies merge to form a single firm [14]. When a subsidiary company gets completely merged with the parent company it is also called ‘Amalgamation’. Some of the classical cases selected in the study are ‘RCL’ merging with ‘ICL’, ‘Dalmia’ merging cement and sugar divisions, ‘ACC’ merging ‘Bargarh’ cement, ‘JIL’ merging the cement division with parent company.

b) Acquisitions: Acquisition is when one firm takes control on another by acquisition of majority stake on the target company or by way of controlling the composition of the ‘board of directors’ of the target firm. With acquisition the ownership gets transferred for both tangible and intangible assets of the target firm. Some of the different methods of acquiring are purchase of new shares, purchase of shares from open market, taking major stake of the share capital with cash, and by taking over with an agreement with existing majority stake holders in a firm. After an acquisition the firms mostly operates as two separate companies both maintaining their identity [14]. ‘Takeover’ of shares for example is a method of acquisition. Some of the classical cases in the study, of acquisition and keeping the target as separate entity are ‘GIL’ acquisition of cement division of L&T, L&T’s acquisition of ‘Narmada Cement Ltd (NCL)’, Holcim’s takeover of ‘ACC’ and ‘ACL’.

In common terms of communication both acquisition and takeover are interchangeably used most of the times.

1.6. Need for the study:

When organizations decide to expand and have decided the method then the next objective is to achieve the plan as per design. As described above Indian cement industry has seen M&A’s taking shape in the last two decades and considering the future growth possibilities is expected to have quite a lot of M&A activities as part of inorganic growth and expansions. With an M&A if success could be achieved it can be a great tool for companies in the industry. This study seeks to explore successfulness of M&A’s in Indian cement industry.

1.7. Scope of the study:

The study is limited to the select sample of cement industry in India which had merger or acquisition activity post liberalization era. It is planned to analyze by comparing the performance

of the companies involved in M&A activity taking three years before event and three years after the event. The first part of the study evaluates from the point of view of the performance in the financial and economic value additions. Then the operational performance of the firms gets analyzed. As the next step combining the financial and operational parameters how the firms have performed synergically is analyzed. Finally, from the study a module is prepared for the benefit of future M&A activities in the industry.

1.8.Objectives of the study:

The primary objectives of this study are to examine the relative benefits expected by adopting mergers and acquisitions (M&A) as strategy by companies in Indian cement industry. The objectives are

- To understand the mergers and acquisition practices in Indian cement Industry.

The study is more specifically intended

- To evaluate financial and operational implications for the companies in the Indian cement industry before and after the M&A's.
- To study the reaction of security prices to announcement of M&A decisions.
- To suggest suitable event module based on the study for better merger practices in Indian cement industry.

(a) Hypothesis of the study

The present study tests the following hypotheses.

- The companies involved in merger or acquisitions achieve better solvency and improved profitability after the merger or acquisition.
- The companies involved in merger or acquisitions achieve better operational efficiency after the Merger or acquisition.
- The companies involved in merger or acquisitions improves shareholders value post event.

(b) Test of hypothesis

The following parameters are selected to test the hypothesis of the study.

Hypothesis- I

(a) Profitability parameters.

(b) Leverage parameters.

Hypothesis- II

(a) Operational efficiency parameters like 'Operational Rates', 'Fuel and Power Consumption' efficiency, and 'Market Share' improvement.

Hypothesis- III

(a) 'Economic Value Addition'', Market Value Addition' and 'Return on Net Worth'.

1.9. Brief view of methodology of the study:

For the first part the analysis has been done for financial and shareholders' value addition parameters. In the second part operational parameters have been used for analysis. A view on share price movement based on M&A event had been done. Finally an event module has been prepared for the industry.

1.9.1. Data Collection:

The M&A's event details have been taken from 'Centre for Monitoring Indian Economy (CMIE)' data base and 'Securities and Exchange Board of India (SEBI)'. For Industry level statistical data, the research agency 'CRISIL' data base and 'Cement Manufacturers Association (CMA)' have been used. Company wise finer data has been taken from the respective companies annual reports. For understanding the importance of 'Logistics' in preparing the event module for business improvement, primary data has been taken with the help of a survey made from the urban and suburban area of Chennai in Tamil Nadu.

1.9.2. Indian share market reaction to M&A event:

Analysis has been made to understand the trend in share price movement based on announcement of an M&A event in India in recent past across sectors and also in the cement industry. For this sample of listed companies has been taken across industries and 'Standard Event Study Methodology' has been used based on the 'Market Model', to understand the share price movement and maturity level of the stock market in India. The 'Cumulative Abnormal

Returns (CAR)' for the samples studied using the regression equation used in the analysis is as given below:

The equation is as follows:

$$R_{it} = \alpha_i + (\beta_i \times R_{mt})$$

Where 'R_{it}' and 'R_{mt}' are period't' returns on security 'i' and market portfolio respectively. 'α_i' and 'β_i' are parameters of the market model. If we take the regression equation between market portfolio and returns for a particular security then 'α_i' is the 'Y' intercept and 'β_i' is the slope of the equation. An event window has been taken three days before the event and three days after the event to read the CAR's. From the readings valuable inputs regarding share returns has been inferred [18].

1.9.3. Analysis of the Parameters:

Operational profit margin % (OPM), Net profit margin % (NPM), Debt to Equity ratio (D/E) and Return on Capital Employed % (ROCE) are the financial parameters considered involving profitability and leverage. The operational parameters considered are Operational rate (OR) %, Power consumption (PC), Coal Consumption (CC). The marketing parameter namely, Market Share (MS) which has a direct effect on Operational rates has also been taken up under operational parameters [19].

In the above mentioned parameters the three years pre event ('merger' or 'take over' as the case may be) and three years' post event has been taken up for each parameter and compared for any significant change. The year of event has been uniformly taken as first year of the post event period.

For the parameters paired't' test has been used to understand the level of significance in performance comparison. The averages of the performances of the three years pre-event and the three years' post-event have been taken for comparison [20].

Since one of the main aspects in M&A is the synergy after the event a comparison has also been made between the first year and third year after the event to see significance in improvement. This has been done for both financial and operational parameters using paired't' test.

The aspect of coal consumption has been presented by different companies in different units. So the aspect of change in consumption has been taken for comparison.

First financial aspects been analyzed taking financial parameters for the samples and then the value addition to shareholders have been analyzed.

The analysis ‘Economic Value Addition’, ‘Market Value Addition’, ‘Return on Net Worth’ analysis has been done to understand the value addition to share holders post event. For this the following formula has been used [14].

1. EVA= Net operating profit after tax adjusting Interest (NOPAT) –the cost of capital employed (COCE).
   Higher EVA indicates better performance.
2. Market Value Added (MVA):
   MVA is calculated as: MVA= (Market value of the company) – (Equity).
   Higher market value indicates better performance.
3. Return on Net Worth (RONW):
   RONW= (Profit after tax)/ (Net Worth).

As the next stage operational parameters have been analyzed and then composite performance analysis has been made for the companies.

1.9.4. Composite performance analysis:

Analysis of the composite performance of the firms has been done by giving ‘weightages’ to the different parameters and finding what has been the composite scores of the samples and the progress in this score has been analyzed during the post event period over pre event period. (The different parameters are given specific weightages as per their importance that could be seen in an industry specific angle and has been detailed in ‘Chapter IV’ under section ‘4.2.4.1’).

In the last stage, in designing a module for the industry to improve the aspect of target location in the cement industry primary data analysis has been done on importance of logistics which forms such an important aspect of cost of cement distribution expense for the manufacturers. This survey had been done both in urban and semi-urban areas of Chennai in Tamil Nadu state using a questionnaire for the survey and collection of data.

1.10. Limitations of the study:

This study is a descriptive analysis of the level of financial and operational performance of the companies leading to value addition of shareholders post event in Indian cement industry.

1. The study is mainly based on secondary data and is bound by the limitations associated with it. The cases of Indian cement industry M&A's in the last fifteen years have been taken and the future dynamics of economic scenario can have different effects on the future events in the industry.
2. The main study is with cement sector and so many factors are limited to this sector and cannot be taken generic for other sectors. For example, the effect of 'Electricity' and 'Coal' are industry specific and the effects seen in cement sector can be different from other manufacturing sectors.
3. The merger and acquisition of manufacturers who are listed and or publish annual reports are alone taken for the study. In India even in an important sector like 'Pharma' there are lots of private companies getting taken over by other listed or non-listed companies and hence the limitation of sampling applies to the study.
4. There is shortage of descriptive data on M&A activities in the cement sector in the country. So the data sources are limited to CMIE data base, CRISIL data base, SEBI data base, Annual reports of the companies, some popular journals like 'ICFAI', 'The Economist', 'Harvard Business Review' and 'CMA'. For example considering the motives for mergers, the motives given in select cases by the management is taken as such and what all factors went across in negotiation and finalization have not been declared to the public by the firms.
5. The number of years taken up has been for three years pre event and post event. In some cases the event had taken place as late as year 2007 and the data had been feasible only for two years post event.
6. All the limitations associated with statistical tools used in the study are applicable.

1.11. Chapter Scheme:

Chapter I:

In the introduction part of the thesis, a brief view of the Indian cement industry, the present context, the need of the study, the objectives of the study and its methodologies, the scope of the study, the significance of the study, and its limitations are brought out.

Chapter II:

In this chapter the literature review has been done to help bring out good knowledge for the study and to know the needed areas for the study and its importance for the Indian cement industry.

Chapter III:

The present context of Indian cement industry and the merger and acquisition activities that had taken place in the last two decades in the industry have been brought out to know the context, need and significance of the study.

Chapter IV:

The research methodology adopted to do the analysis has been presented in the chapter. The different stages and steps used in the methods along with description of the formulas where ever used have been presented.

Chapter V:

The share price reactions and the returns to the shareholders have been studied taking examples from both cement and non-cement sectors. From the readings analysis has been made to bring out if any pattern exists in the nature of returns for the shareholders and the level of maturity of the Indian stock market.

Chapter VI:

In this stage the financial and operational analysis based on the methodologies have been done to bring out the impact of M&A on the performance in the Indian cement industry.

Chapter VII:

From the analysis and knowledge gained from the studies a module had been prepared with an aim of making it useful for the industry for future M&A activities.

Chapter VIII:

The final conclusions, specific contributions and future scope of work had been brought out in the chapter.

After seeing the Indian cement industry's context, the objectives, the significance of the study and a brief view of the methodologies the next stage of literature review have been done.

Chapter-II

Literature Review

Mergers and Acquisitions have been on the upswing after the liberalization in India. There are number of news reports substantiating this period as turning point in Indian economy. The market got opened up across industries and from customer level up to manufacturer or service provider level, as the case may be, everyone was having expectations of changes in systems, products, services available to them. Opening the market invites expansion of business with new opportunities and incentives and Mergers and Acquisitions (M&A) is one of the ways in which companies have expanded. The fact that M&A had been used to expand by industries had been seen globally for more than a century in the developed nations. For India it was the liberalization of nineties, which gave the momentum to M&A across various sectors. From the literature review on different aspects of M&A's it has been aimed to acquire knowledge like, globally what has been the scenario, how the macroeconomic aspects has influence on the activities, how the regulations of the governance in a particular region or state impact M&A events, how India has joined the fray in gaining momentum on M&A's, how India has gained momentum domestically on M&A's and what are the gaps in the research and how this study aims to fulfill the gaps.

2.1. Reviews:

2.1.1. Global level M&A's:

A brief look at the literature on M&A at global level gives light on happenings on a few sectors globally and how mergers came in waves and some of the recent developments by way of divestitures.

Allen N. Berger, made analysis of M&A in USA. For the research work the performance of banking industry was chosen. The analysis was focused on the change in lending behavior of banks post merger. Economic model was used for the study in which samples were taken for a period between the years 1979 to 1994. One of the major findings was that large sized banks when merge reduce loans for small business. In case of acquisition by holding companies large sized companies reflected higher lending to small business after acquisitions [21].

Simon J. Evenett [22] had a detailed study on the cross border mergers among the wave of mergers in 90's. 'Organization for Economic Cooperation and Development (OECD)' countries were taken up for the study as the samples were from these regions. The 90's waves initiated five times more M&A's than the one in the 80's. The service sector topped the M&A numbers in the 90's with the three years namely, 1997-2000, alone having M&A events that was almost half the number of M&A's of the decade amongst the OECD countries. The effect of cross border merger on competition was studied and was found that when cross border M&A's increases in an economy that has high presence of foreign players then it helps in cost cutting and price reduction for the benefit of the consumers. When de-regulations increased in a particular sector then the cross border M&A's increased in that sector, as was evident from the service sector M&A events in late 90's. As far as finance sector, the benefits that have to come from cross border mergers were seen to be offset by the detrimental effects associated with strategic alliances across border. In European region the cross border M&A's had benefited bank customers. The conclusion was that the cross border M&A cannot be branded as 'anti-customer' and has to be seen as case specific. In the study the consolidation aspect of the sector was studied and the nature of FDI's when allowed free flow was also viewed. When FDI's flows it is more to do with M&A and the green field expansions get reduced in a developing economy was one of the noticeable points that had been brought in the study.

Among the different ways of analysis and understanding of M&A's one is the understanding of the merger waves. Since in India the M&A's started only in early nineties, any study of M&A waves needs to be involving global level firms. Humberto R Ribeiro [23] did such an analysis to know what motivates a wave, and tried to know why it happens in waves. The finding was, US was the place where M&A waves were seen to happen initially and after a length of time in many other countries the M&A's events happened to occur in waves. The M&A wave in US happened to be on quite few occasions, like, first wave around year 1900 (1893-1904), second wave around year 1925 (1916-1929), third wave in late sixties and the fourth wave in late eighties. It was observed that the wave may look similar but the reasons were different on each occasion and was based on the economic developments. The first wave was monopoly creation driven with horizontal mergers dominating with 78%. The second wave was in an oligopolistic environment based on new invention and development of radio and automobiles. Firms felt these helped advertising better and the mergers were mostly vertical like controlling distribution

channels. Third wave was 'conglomerate' formation driven with firms going beyond their core businesses and fourth wave was on dismantling diversified business with acquisitions based on high availability of risk financing. By the end of last century the mergers, seen globally, were observed to be strategic and mega in size with year after year M&A values increasing. After the research on the same, the reasons were found to be different but why do the M&A's happen in waves were not clear. It was also observed that the wave phenomenon had been seen in many corporate event activities involving finance like stock re-purchase activities.

2.1.2. Divestitures and cross border mergers:

A report in Harvard Business Review (HBR) by Michael C. Mankins, David Harding, Rolf Magnus Weddigen [24], depicts that a study done taking 20 years period between 1987 and 2007 and involving as many as 742 companies were involved in disinvestment activities by way of divestiture of businesses. It was found that sound timely divestment of business can increase shareholders values. Investment of $100 in share in 1987 improved 10 times by 2007. However a good divestiture improved 18 times for the same period. Thus, the fact that a timely and planned divestiture can be part of strategy to improve shareholders values was one of the findings. The report recommends corporates to have a team set up to plan divestiture by enabling sell non core business and focus on core business depending on the economic environment. It is reflected that it is better to sell of business when it is useful for other firm rather when it becomes too late.

Divestiture benefits were also analyzed by Geoffrey Owen and Trevor Harrison [25] by taking the example of Imperial Chemical Industries (ICI) of Britain. The old conglomerate which diversified and expanded as a strategy in early 80's found itself being in too many areas. In early 90's it found itself to be struggling with the parenting and was hard pressed to take decision on dividing the company in to two and finally did it, namely, as 'New ICI' and 'Zeneca'. As it turned out the two new divisions performance was far better than what they were as one. The old parenting was not there but the two were in different technical requirements. The approaches needed due to new competitions and changes in the economic environment were different and lack of old parenting approach was found helpful. More than lack of synergy it was found that the new environment wanting focused and different approaches was the factor pulling down the performances. Both the divisions wanted different management styles, as one was in pharmaceuticals and other was purely in chemicals. The share prices dropped down not

reflecting good performances by one part of the company namely pharmaceuticals. The businesses under the two new divisions had interlinks and the focus was better after division. Thus the finding was- given a particular need, based on differences in technology and macro environment, division of firms can be profitable and increase shareholders value.

Bruce Wasserstein who is one of the oldest in the merger deals and who received the 'Great Negotiator' award from Harvard Law School in 2007 and who operates at the highest level in Lazard Ltd as CEO in an interview to Thomas A. Stewart and Gardiner Morse [26] of Harvard Business Review has given the importance of basics in merger deals. He pointed out that after takeover the assumption that top layer of the management team should be removed within a year is a misplaced one. The importance is to ensure that the shareholders money when gets invested must be worth it for the risks involved with it. The author says with respect to the target companies, some of the values ascribed to it would involve some premises which cannot be avoided. The criteria to be followed are to have these premises based on practical feasibilities and not on pure assumptions. The other important advice is, during negotiations the emotional aspect of one to one or 'Macho' attitude needs to be substituted by all dimensional approach that covers different aspects of the business as a company has many dimensions.

Pankaj Ghemawat [27] in his report on cross border mergers has given the importance of some industries having to follow multinational but regional policy for expansion. He warns against indiscriminate expansion at global level and presents, regional performances can give far superior results to massive global expansion. The author names it as 'Hub' strategy and takes the example of 'Toyota' of Japan and aluminum smelting industry to substantiate his point. The aluminum smelting industry focuses in 'North American' region and the sales there is more that all other regions of the world. After the 'Hub' strategy to reduce the fixed cost and ease the distribution a 'Platform' strategy has been advocated which supposes the firms to generate business bases within the regional in different countries. Then the 'Mandate' strategy as developed by 'Toyota' which makes these platforms 'specialize' in certain areas which could be used by other 'Hubs' has been brought out. 'Toyota' for its 'Light Commercial Vehicles', for certain parts of its engines, specializes in Asian region and sends it to other hubs.

2.1.3. Effect of regulations at global level:

Conducive economic environment with opportunities and incentives with the help of government's regulations seem to have an impact on M&A activities in that region as seen from some of the studies.

Elena Carletti, Philipp Hartmann and Steven Ongena [28] [29] and later Mikael Collan had observed the effect of competition policy on mergers or acquisitions. Banking firms and non financial firms were taken up for the study. The study focused on developed countries for the period 1987 to 2004. The reaction of the firms' share prices were studied using event methodology. That the shareholders react after evaluating the effect of the merger on competition was one of the findings of the study. Banking industry's share prices was found to perform better when competition laws were strict and non financial firms shares performed better when competition laws were not strict. To a great extent the performance of the banking sector was found to depend on the government's supervisory control on the banking sector. If the controls are high then the investors evaluated the prices at lower level.

Paulo Correa and Frederico Aguiar [30] did research in Brazil and saw a need for state governance control. The study was on the economic and competitive repercussions of M&A's. The finding was that since the developing economies are in transition stage, a balanced merger controls and regulations with antitrust laws that protect consumer welfare and also help economic growth is necessary. The protection of both, the consumers and the economies is needed in different types of merger and acquisitions like horizontal and vertical. Even in taking over of sick firms this was deemed necessary in the report.

Stefano Rossi and Paolo Volpin [31] made study on the nature of merger transformations, based on the investor protection levels in a country. Major countries, 49 numbers, were considered for the study. The level of rules and regulations by the government in a country had a role in the nature of M&A activity in that country was one of the findings. It was found that in countries with high investor protection M&A activities had been higher in numbers. The other finding was that in countries were corporate management and control is poor the firms have become targets for the ones in other countries with good management control. Poor investor protection increases the cross border M&A activity was also one of their findings.

Paula Neto, Antonio Bradao, Antonio Cerqueira [32] studied macroeconomic factors effect on M&A's in a region. Asian region's relation with European region was particularly analyzed. The factors considered were GDP growth in a country, demand supply situation in a country, openness of the economy for foreign investment, exchange rates and market capitalization. The finding was that European M&A's on Asia was more than Asian regions M&A's on European region. However when it came to values it was otherwise. The turning point for increase of European M&A's in Asian region was the year 2002. Amongst the Asian countries Japan topped as the recipient and then came Korea, China and India, in that order. Exchange rates had an impact on the M&A's activities in an area was brought out in the study. For example, in European region many firms had London as their base and this explained higher volumes of M&A's by London based firms, as the currency of many countries are much less in value. With respect to GDP factor there was no significant evidence of it having an effect on M&A's in the country. High market capitalization was found to have positive impact on the M&A's in the country. The factor of openness gave mixed results as some countries like Japan which was not open for foreign firms entering them was actually the highest recipient and Honkong which was highly open also had good number of M&A's by way of FDI. The conclusion was, openness factor and M&A's relation was not consistent.

Whether FDI helps new technology in to a country was seen by Yasar Mahut and Morrisonpaul Catherine [33] using samples from Turkish industrial manufacturing market. The useful input that could be gathered from the study is that FDI had a positive impact on new technology transfer. The facts relating to productivity of the new technology was also done by the author but for our study the usefulness is in inferring that FDI help get new technology transfer.

2.1.4. India picking up momentum:

Since the liberalization in early 90's, India has been picking up momentum in M&A's across sectors.

Nagesh Kumar [34] studied the pattern of M&A deals in the 90's. The study was on patterns of mergers and the composition of mergers industry wise. The study brought out that most of the mergers were horizontal in nature. The study was also done on the size of the deals. The observation was that, in India, FDI's share on M&A's increased with the increase in FDI's.

Table2.1: FDI inflows in late nineties and M&A's share:

Year	FDI Inflows $mn	M&A funds $mn	Share of FDI
1997	3200	1300	40%
1998	2900	1000	34%
1999	1400	500	35%

[34]

The point that came out was, in line with practice in some of the developed countries abroad, in India also FDI had taken a good share of M&A funds. The 'Greenfield' investments were getting reduced with increase in FDI through M&A. The author had taken the case of FMCG sector and had brought out the example of multinational player Unilever's expansion in India using its Indian subsidiary. Following the liberalization Unilever had expanded as below.

- Mar 1993 Acquisition of Kothari General Foods (by Brooke Bond India, BBIL)
- Jun 1993 Merger of Doom Dooma India (Tea Plantations) (BBIL)
- Jun 1993 Merger of Tea Estates India (Tea Plantations) (BBIL)
- Jun 1993 Merger of Brooke Bond India and Lipton India to form Brooke Bond Lipton India (BBLIL)
- Jun 1993 Acquisition of Kissan Products (BBLIL)
- Jul 1993 Acquisition of Cadbury's Dollops (Ice creams) (BBLIL)
- Mar 1994 Acquisition of Tata Oil Mills Company (TOMCO) (HLL)
- May 1994 Acquisition of Merryweather Food Products (BBLIL)
- Dec 1994 Acquisition of Kwality Ice Creams (BBLIL)
- Apr 1995 Acquisition of Milkfood Ice Creams (BBLIL)
- Jan 1996 Merger of BBLIL into HLL
- Jan 1998 Acquisition of Kwality Frozen Foods
- Dec 1999 Acquisition of Rossell Industries Ltd. (Tea plantations) (Unilever)
- Jan 2000 Acquisition of Modern Foods Industries

The finding was; the M&A's were done by FDI by way of taking over domestic firms but contrary to the popular belief they do not necessarily give good inflow of knowledge to the domestic firms. When it is about the patterns of FDI after liberalization through M&A Nagesh Kumar found, in the late nineties between years 1997-2000, 34-40% of the FDI was through M&A (Table 2.1). This, the author felt, reduced the green field expansion done by FDI which was the main route till 1990. With respect to FDI, as M&A was further analyzed, the result came out as; 239 events out of total 256 were towards acquisitions and not mergers. The other notable point made was just three of these 256 deals were vertical. The rest were all horizontal in nature in India. Then, among the acquisitions the composition of the cases sector wise was seen and was

found that most the cases were from Industry sector (74%) and next came service sector (21%). The effect on the domestic players was seen as a danger in the long run and the recommendation by the author was to make amendment in the M&A codes making it come under the preview of anti-trust law governing body. The recommendation was also to review the antitrust laws in India by making it more rigorous to prevent mergers affecting the competitive situation but at the same time help economy grow.

Analysis of the type of mergers in early nineties was also done by Beena [13]. The size and type of mergers between related business and non related business was seen for the period. In the first part of the study the merger waves abroad had been discussed. Later the study also verified the significance of the liberalization effect on the type of mergers in India. In the early part of the nineties it was found that the M&A was done as part of consolidation in many industries as most of the M&A was between related businesses. For example in the year 1994-95, 60% of the events were between related businesses. The asset value of the mergers was also seen to be more with related mergers (83%) over unrelated mergers. Amongst the samples the events were segregated according it being vertical, horizontal or conglomerate and it was observed that in 1994-95 the asset value of horizontal merger was around 50.57%, vertical mergers were 44.32% and conglomerates were just 5.1%.

Arindam K. Bhattacharya and David C. Michael [35] reflect developing countries like India has well grown domestic players that global players cannot hope for an ‘easy buy’ and ‘get easy’ market conditions. Several cases of performance of the current decade were presented to show how locals keep multinationals at bay. The author’s notable point was, the global players have strategies designed decades ago and the same cannot be applied in trying conditions in developing markets now. Cases from India supporting this view were presented as follows.

Table 2.2: Domestic players' performance in India:

Company	2006 Net Revenues $mn	% growth Y-o-Y
Apollo Hospitals Enterprises Ltd	215	23
Bharti Artel Ltd	4162	59
Gujarat Cooperative Milk Marketing federation (GCMMF)	961	13
ICICI Bank	5308	63
The Indian Hotels Company Ltd	347	42
ITC Ltd	2856	26
NIIT Ltd	179	76
SKS Microfinance Ltd	7	169
Titan Industries Ltd	480	44

[35]

The cases from China, Brazil and Mexico have also been presented and one of the findings comes out as, the players develop business model to overcome key obstacles from foreign players. In India GCMMF is one of the biggest dairy companies. The dairy product market had been opened up and there has been severe competition. Still GCMMF has managed to stay ahead of competition as a leader. One of the tools was to adopt latest technology in milk processing. The company had invested sufficient capital to be at par with international players. In the present system the company gets milk from close to 13000 villages in the state. Per day processing is to the tune of 6.5 million liters of milk. The payment system, unlike earlier, had become immediate to the suppliers which the farmers prefer and end up supplying milk proactively to the company. With the use of ERP systems and back office arrangements every day the payment processing is to the tune of 170 million rupees.

2.1.5. Motives of M&A's:

R Srinivasan and Bibek Prasad Mishra [36] made a study to understand the motives for M&A from the point of view of acquirer and the target. They tried to know the motives of 30 firms involved with mergers across industries to know the significance of any special motives being more prevalent. They studied different theories in M&A's like efficiency theory, oligopoly and monopoly theories. 'Efficiency theory'- In this concept it is believed that two managements

cannot be equally efficient and when the two combine to form a single company or if one is totally under the control of other the less efficient management is likely to be lifted by the more efficient team. The areas where this can be applied are financial, operational and managerial. The addition of two companies when they improve their efficiency will give an output more than the two if they were separate is the efficiency theory. Sometimes there has been cases when cases referred to Board for Industrial Financial Reconstruction (BIFR) being taken over by performing companies which has an aspect of efficiency theory applied to it although it can have more factors involved in such an action of taking over a sick company. Monopoly or market power theory- In this angle companies try to gain power with increased market share. When companies are strong enough in the market to have influence in pricing then they get a change to modulate supply according to demand levels. This can give rise to more consistent pricing leading to better revenue levels. When market power exists with increased customer base then with the combined power the company can also exercise good control over suppliers of raw material and get good discounted purchase rates. When such strong players exist they can influence other lesser players to hold to certain price levels and reduce price competition. A reference has been made to the side of deterring some potential competitor from entering the market to avoid competition.

In some industries companies are reported to take over some sick companies with good physical asset values to increase their asset base. ‘Raider theory’- for wealth increase due to share transfer from target firm which is basically focused on financial returns. ‘Valuation theory’- High value firms may be not clearly known to public. There is chance of difference between book value and estimated value of assets. While the initial valuation was based on available inputs, as and when the negotiation goes on, the additional inputs will help have better valuation of the target firm. Using the additional inputs to see if there is a chance for better operational synergy in future is the valuation theory. ‘Empire building theory’- based on motive of the acquirers managers increasing their prowess is the empire building theory. ‘Process theory’- refers to the corporates using mergers as ‘processes’ for increasing their versatility. ‘Disturbance theory’- This corresponds to the adjustments made with the help of mergers due to macro economic reasons. From the study done, by taking the perspective of an acquirer and the target, different cases were found to fit for different motives and there was no common motive for most. There were multiple motives in many of the cases than a case having one motivation theory. An important revelation was that for the same merger deal the acquirer and target had different motives.

Is there change in methods and approaches followed in M&A due to emerging economies was studied by Nirmalya Kumar [37], as the firms in an emerging economy had different objectives when compared to traditional big corporates of developed world. It is reported that from studies done for over four decades, about 50% of mergers had not achieved their objectives but companies continue in their act of M&A's and in developing economies the speed is more than the developed ones. China and India have seen near double digit growths several times in the last 15 years and the corporations involved in these economies had profit margins more than double of the ones in developed economies. Moreover, in these developing economies, in 46% of the cases of M&A's in the year 2008, the funding had been done with internal accruals. Without hoping for immediate cash generation and returns these companies merged with firms from developed economies with a long term perspective. While in slow growing markets of developed economies the best way of increasing margins is by cutting costs, in the case as of developing economies it is about growth and long term plan. Due to this basic difference the developing firms do not adopt old and traditional methods of synergy with mergers, and their approach has become different and worth understanding. The classic example of Hindalco from India was taken by the author to bring out the new approach. It was found that Hindalco trained itself with tiny local acquisitions since year 2000 and finally made acquisition of Novelis of North America. The new approach which Hindalco was seen to apply was in the way it did financial integration, integration of the organizations, process merger and market merger. The finding was; while developed conglomerates adopt M&A to do consolidation and get immediate returns, the developing giants adopt M&A to get new technologies and brands at low costs due to the low levels of equity share prices, as in the case of global crisis, and use it for the future growth of the firms.

2.1.6. M&A process study:

Approaches to M&A and its execution had always been an area of importance given the fact that timeliness as well as correctness plays a role.

Aiello Robert J., and Watkins Michael D., [38] gave a report on the aspects of smooth acquisitions. Leveraged buyout (LBO) found the method had good returns, more than the cost of capital with respect to their investment in buying out firms. Between the year 1984 and 1994, 80% of these reported higher returns than their cost of capital. However the record of overall

M&A's up to early nineties in developed economies, was reverse. In addition the fact that financial acquirers before buying focus their calculations on returns rather than on operational synergy plays a role in getting right targets. From the analysis some finer points on smooth acquisition process had been brought out. Screening potential deals, planning, negotiation, finalisation of terms and execution are the stages recommended . Under each stage the finer points that help make the acquisition smooth had been brought about. In the screeing stage instead of looking at firms that attract, there needs to be an analysis of practically all oportunities and needs to be fixed on a strategic perspective and not on an emotional need. In planning stage to evaluate and keep a valuable price for the deal in the mind and not reveal it early and fix the rate early is recommended in the report. The is also an advice to be close and friendly with the target and check for it having the 'must haves' which will help success. In the negotiation stage due diligence on all aspects of the company without rushing up with details has been recommended. During finalisation of terms competition can be expected from other bidders and so to reduce pressure on wrong price at a level higher than it is worth for, knowledge of alternative targets helps to balance negotiations. The final stage is to execute the plan with open offers, swift movements in arrangements etc. Knowledge of good deal also helps acquirers to do their future deals with other targets in a confident way.

Rosabath Moss Kanter [39] had brought out the growing importance of smoothness in deals from the view point of going cross border for expansion which involves different cultures. The report brings out the truth that cultural adjustment by the leaders matters more than the geographical closeness. Further it is highlighted that friendly association from the beginning of a deal is important as this helps in productive integration in future.

Syam Babu M [40] has made an analysis on different processes posible in M&A's. 'Income approach' reflecting what is the present value of the likely future cash flows of the target firm at a discounted rate is one approach. The next approach refered has been 'Asset approach'in which the net value of assets and liabilities after adjusting to market values has been used. Third approach presented has been 'Market approach', which refers to what was the market value of firms similar to target firm. The last approach 'Synergy approach' is to calculate the likely performance after merger and compare it with past performance before the merger for a few years.

2.1.7. Indians going abroad:

After consolidation of several industries in the nineties, by early this century it became a time of crossing borders for business expansion.

Pradhan, Jaya Prakash and Abraham, Vinoj [41] studied the overseas mergers undertaken by Indian companies' overseas mergers and its ways and types. The finding was that service sector lead by way of number of overseas mergers. Analysis was done with the level of significance in various parameters between acquirers and non acquirers using Wilcoxon's rank-sum test and Chi- square analysis. The observation was done in both industrial and service sector using factors like research and development, size of the firm, export percentage, profit percentage with respect to overseas acquirers' verses non-acquirers. Some specific cases of firms going for overseas acquisitions like, NIIT, Infosys, Ranbaxy laboratories, Dr Reddy's labs and Wipro were taken up. Several motives like need to enter new market, access to firm specific assets, expansion need, and operation synergy were considered for the cases. Evidence of need for all these factors were seen from the samples. With respect to understanding difference between merging and non merging firms it was evident that in manufacturing sector acquirers were larger in size than their peers in the respective industries and in service sector the acquirers were older in age and the 'software' sector was exports oriented.

In their report of M&A's in the 90's and early this decade Amit Singh Sisodiya and Reshma George [42] have observed that M&A's had been a strategy for growth in most of the industries in India. In 2006 Indian firms had acquired firms abroad and in early nineties foreign firms had come to India. Information technology sector and pharmaceuticals sector witnessed quite a lot of acquisitions. Thus, overall the authors saw M&A as growth oriented in the post liberalisation period in India.

As far as investments done abroad by Indian firms Janardhan Roa N and Ravi Babu [43] Adusumilli had observed the happenings between 2002 and 2005 and had seen a philip in Indian companies going overseas for M&A activities. IT sector had seen hectic activity and the examples of Wipro acquiring energy division of 'AMS and Nerve wire' of US, Cognizant acquiring 'Onfopulse' of Europe, Infosys acquiring 'Expert systems' of Australia have been highlighted. Similarly in various sectors like pharmaceuticals, commodities like energy and oil,

services like telecom, manufacturing sector like automobiles examples have been brought out to highlight the momentum gained by Indian firms going abroad for M&A. The recommendation has been made by the author for focusing on productive integration of different cultures in post merger period as Indians are new to understanding different cultures abroad.

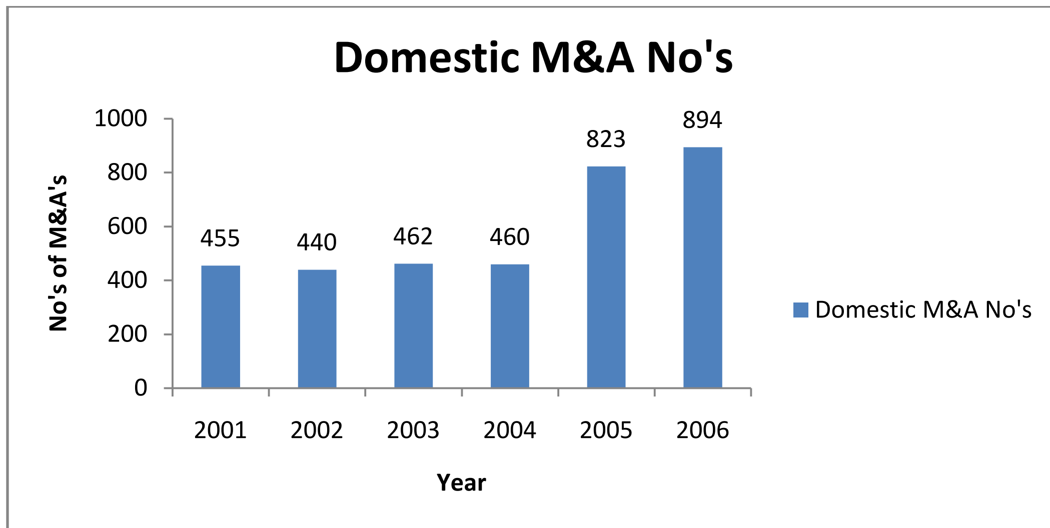
2.1.8. Performance of M&A:

From the studies done related to M&A performances the aspects of ways of analyzing performances, importance of shareholders values, importance of human aspects for performance come to light.

The impact of mergers in India was studied for three different periods by Pramod Mantravadi [44] in the year 2007. The samples were taken across industries and the three periods were 1991-95, 1996-99 and 2000-03. Financial ratio analysis was used in the study and the findings were that the OPM performance differed in different periods. In the first period referred, while the OPM got maintained, RONW and ROCE declined significantly post merger. In the second period OPM, GPM, NPM, RONW all reflected significant decline post merger, while debt equity ratio reflected increased leverage. In the third phase it was seen that OPM, GPM, NPM, RONW, ROCE all showed insignificant decline post merger, and the leverage effect also did not increase post merger. For all these factors the‘t’ test values were used for analysis. These results helped bring out the fact that Indian merger went from step to step post liberalization. First there was spurt and employment of funds and later industries tried to stabilize and were coming to terms with the new phenomenon of integration, and still later the maturity of the industries was noticeable as the decline in all the factors were insignificant.

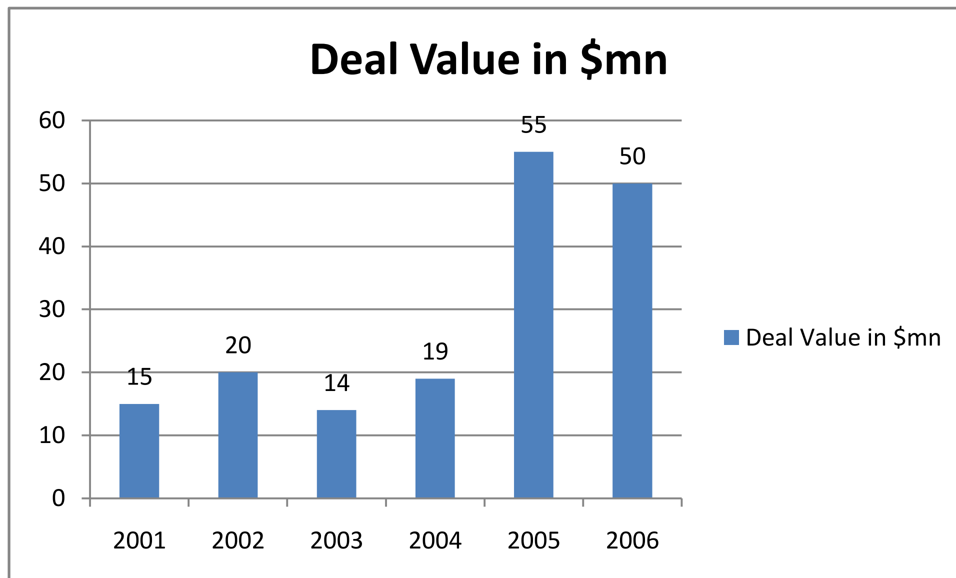
Rajesh Chakrabarti [45] analyzed mergers involving Indian firms between 2000 and 2007. The study was on understanding the ‘Cumulative Abnormal Returns (CAR)’ for the shareholders based on merger announcements. The reading was that at the international level there was reduction in values for the firms both in the short run and long run. For Indian firms it was otherwise in the observed period. The study has brought out different valuable points of Indian M&A in post liberalization era. In spite of picking up in no’s in nineties, in the early part of current decade the number of events involving Indian companies in M&A was almost stagnant. The details are as given below.

Fig 2.1: Number of domestic mergers:



[45]

Fig 2.2: Details of values ($mn):



[45]

'Event study methodology' was used to find the CAR using regression analysis. The share price and market index data were taken for the sample cases of M&A from the event day to 10 days. The finding was, against the market index there was positive returns in India and when the reading were corrected to the respective industry level share pricing of the firms the positive

effects of announcement vanished. The conclusion was that in India the market does not perceive the effects of the merger properly during the announcements.

B Rajeshkumar and Prabina Rajib [46] made study on multiple mergers by Indian corporate by focusing on the financial characteristics. They tried to know if there are some parameters more probable with a firm indulging in multiple mergers in comparison to firms which do not indulge in multiple mergers. The parameters taken up were capital structure, management performance, size of firms, cash flow levels, growth rates of revenues and profits. Firms with minimum three mergers were considered for analysis from the post liberalization era, i.e., after 1991. A total of 53 firms across industries were taken and non parametric test by way of 'Mann Whitney U Test' was applied for the difference between groups. To have a prediction of a firm likely to indulge in multiple mergers 'Logit model' was used. The finding was that average sales of non multiple merger firms (NMMF) was around 40% of the sales revenues of multiple merger firms (MMF). The average profit of MMF group was substantially high, to the level of 200%, over that of NMMF. The cash flows for MMF group was 69% higher, OPM was 36% higher over NMMF group. The total assets were remarkable high at 169% for MMF group. When it was about long term debts the difference between the groups was almost absent. When the MMF group was further divided in to bigger and smaller firms even then the groups of MMF had higher values in comparison with NMMF groups for these parameters. From the 'Logit model' the finding was that the sales revenues for the firms indulging in multiple mergers were positively related. The ratio of 'sales to total assets' and 'long term debts to total assets' were negatively related for MMF. RONW and ROCE were positively related to a firm becoming a MMF. For MMF the capital expenditure was negatively related to total assets though not significant. When regression was applied the ratio of 'sales to total assets' was negatively related to a firm becoming a MMF.

B Rajeshkumar and S Panneerselvam [47] studied the market reaction on equity share values of the acquiring and target firms. Their observation was, market reaction to the 'merging act' shows what the perception of the public is to the value creation of the merger. The reaction can be case specific and on the level of information available to the shareholders on the merging firms. The actual performance of the merging firms could be different from the perception of public but the level of share price fluctuation in pre merger period reflects the level of knowledge public has on the merging firms. 'Market Model' was used to understand the CAR for both 'acquiring' and the

‘acquired’ firms, by taking data from the ‘Bombay Stock Exchange’. The finding was that on the announcement day in most of the cases the average price increase for the shares of target firms was higher than that for the acquiring firms. In case of announcement of acquisition the returns for shareholders of acquiring firms were better. In case of merger announcements the returns for the shareholders of target firms were better, during the entire window period considered around the announcement date. When the returns for the target firms involved with mergers were compared with that of target firms of acquisitions, the returns for shareholders of target firms involved in mergers were higher.

Study on post liberalization performance of M&A events was done by Vardhana Pawaskar [48] by way of taking 36 merger cases between years 1992-95 and doing analysis on their financial performance. To know whether acquiring firms’ performance improved due to M&A was the main objective of the study. During the analysis comparisons were made between acquiring and acquired firms, and between firms indulging in M&A and firms which did not indulge in M&A’s. The comparison between acquiring and acquired was also done based on their performance against the industrial averages. For the analysis Wilcoxons Rank sum test and‘t’ tests were applied and the resultant inference was that the post liberalization mergers did not lead to higher profit abilities in majority of the cases and there is industrial adjustment seen with M&A based on the then new economic policies.

Value creation for shareholders was analysed taking 13 number of samples between 1993-98 by Rekha H G [49]. P/E ratio and ‘Earnings per share’ were used for the study. Accretion or dilution of the values of the shareholders post merger were studied. For this, first the new market price after merger was calculated by multiplying P/E of acquirer before merger by the combined EPS of the merged entity after merger. The share value of the target firm at the time of merger is the market price of its share multiplied by the number of shares exchanged on merger. From these the dilution or accretion of value was calculated by the ratio of ‘(New market price-Market price prior to merger)/ Market price prior to merger’. The findings showed quite a few details. When it was a takeover of a sick company the shareholders of acquirers lost value while that of target firm gained. When two profitable firms merged, then before merger the share of aquirers gained. However post merger target firm gained more. When the merger was with a firm that had higher

EPS than the acquirer then post merger the accretion of value for shareholders of acquirers were higher than the target firm.

In his book on creating values from mergers Sudi Sudarsanam [50] had exhibited the findings on value creation for shareholders post merger. The study was across industries and understanding M&A as a process having various steps and not as a ‘one time’ happening. Totally five steps were depicted namely strategy, selection of targets, structuring of the deal, integrating after the merger and auditing the performances. Finally it has been brought out that though M&A help in strategy for corporate development, the management must have alternative choices ready in hand.

Siddhartha Sankar Brahma [51] had studied post merger performance from the human factor side. The importance of the strategic fit of the target firm was recognized but the additional needs were envisaged. One of the important additional needs found out was the performance of the ‘human factor’. The cultural fit, the importance of the communication between groups and above all retention of talent was emphasized from the findings. It was found that successful mergers needs success of more than a few factors and one of the important ones is the human factor. Some of the findings were as given below.

1). The human resource team needs to get in to act at an early stage of integration.

2). When in crisis the management should not be silent, as silence was found to be catastrophic.

3). Management of the trauma that follows mergers mainly for the target companies employees needs capable management.

4). Cultural integration is of paramount importance and when fresh values are communicated it should be amended such that it blends both the cultures, of acquiring and target firms.

There has been some study on the psychological side of mergers particularly with reference to mergers involving legacy organizations. The case of Citi group was taken up by Steve Maguire and Nelson [52] to try and identify the characteristic involving the human side with mergers. For the study references and reports were collected from respective company’s internal and external sources. Internal resources were shareholders feedback, annual reports, communication to employees and other communications. External reports were media projections, external

interviews etc. After discussion with top management team like senior managers a set of legacy employees of 15 numbers was collected and interviewed giving them confidence of maintaining secrecy. The overall study was for a period of two years from the merger. It was found that when employees are attached with legacy organizations, when their firm or division gets sold out to another, they feel deceived. When the newly formed firm does not have public identity as that of the old one, the employees from old target organization may be quite unhappy. The author calls this as a form of 'Trust', much similar to an individual's 'one-to-one' trust, albeit directed towards an institution. After this situation even if the new firm starts getting good identity even then the old employees find it difficult to identify themselves with this new firm.

2.1.9. 'Acquirer' or 'Target' focus:

India's development in nineties gained such momentum that by the year 2000 the exports stood at $30 billion (bn) and US share of FDI was $2.3bn out of $12.6bn. India's exports which were software related were highest to US by year 2000 itself. All these considering the tricky relation the two had after the Second World War reflects the changes produced by the liberalization policy of early nineties. Surjit Kaur [53] researched post merger performance of the acquiring firms across industries in India using financial ratios and found that industry type does play a significant role in determining the performance and the performances were case specific. For the samples taken between year 1992 and 2003, 68 of them, the difference in financial ratios were analyzed. The average values of the respective ratios of all the acquirers taken across industries were considered for pre-merger and post-merger period and compared using't' test. The finding was that the mergers did not improve the performances of the acquirers. The analysis was also done by segregating the sample industry wise to know, post liberalization, if industry type had effect on M&A's performance. Different industries had different readings though it was not possible to categorize that one type of industry had a specific type of impact. It was however evident that the ratios were different for different industries, and so industry type has an impact and it may wary as per the environmental conditions [53]. Surjit Kaur had worked on predicting takeovers with financial ratios. The study was basically focused in the period when take over codes were enacted in the 90's by taking samples across sectors in this period. The focus was on target firm's performance post merger. 'Financial analysis' was made and the finding was that the ratio of EBIT to sales and ROCE declined significantly. The finding was the shareholders of

the target firms need better protection as the focus was more on the acquirer's performance. Conclusion was made to revamp the takeover code for benefit of target firms' shareholder protection.

2.1.10. Sector focus:

From the aspect of studying on M&A activities in a specific sector, Priya Bhalla [54] did a study on finance sector in India in 90's. The author found an increase of M&A in this sector over the study period. Finance sector was found heterogeneous with different types of banks like rural, urban, cooperative, private, public sector banks and non banking finance companies. Immediately after liberalization in 1990 the finance sector M&A's did not start, with the first one in banking taking shape only in the year 1997. The sector wise M&A by way of numbers was taken by the author in the first five years, second five years, and between years 2000 and 2007. From just four events in the year 1997 the finance sector touched 67 M&A's in year 2006. After the second Narasimhan committee in late nineties the finance sector have increase merger activities. Overall the finding was that finance sector did not play a leading role in the M&A activities in India but the scope is good for the future. The result also reflected that most of the mergers were of horizontal nature in finance sector and so the role of antitrust laws is predicted to play a greater role in future in this sector.

'Luxury' sector M&A study was done taking Europe region by Anke Konigs and Dirk Schiereck [55]. In the period 1993 to 2005, the M&A's involving luxury product related companies were taken up the researchers. The numbers achieved the peak in late nineties and dropped down post 2000. The reading was; 97 out of the total of 206 deals happened between 1998 and 2000. The effect of M&A announcement was used to study the returns for the shareholders of both acquirers and the acquired using a window of -20 days to +20 days, before and after the event day. The CAR was studied which was found using the regression approach. The values were segregated between acquirers and acquired, first for the total period and then by breaking the total period in to three phases and later finally segregating the sample again as domestic and cross-border deals. One of the notable finding was that, when in developed countries the past literature had shown decline in returns for acquirers and positive returns in good number of cases for shareholders of target firms, in the case of focus on luxury industry in Europe both acquirers and target firms shareholders had positive returns on an average. The authors feel this result

should encourage researchers to do more industry specific study on M&A as it can throw more new things specific to industry.

John Hagedoorn and Greet Duysters [56] made research on M&A that has technology synergy as the main objective. The focus was on related and unrelated M&A with reference to technology. When related but similar technology mergers took place, due to reasons like duplication of work etc., in the post event period the development was lower. When related but different level of technology firms merged it had a higher level of development by way of new skills and utilization of mutual knowledge. International companies with motive of being global also derived benefits in this way. Regressive model involving one dependent variable and other independent variables were used as a tool for the study.

Suvendu Bose [57] did analysis of mergers in Indian banking sector. Indian finance sector is one of the oldest to have experienced M&A. There has been witness of one form of merger or other by the author even though the size might have been small on occasions. The detail presented by the author is as follows.

Table 2.3: Details of finance sector M&A in India:

Year	Bank/NBFC	Merger with
1969	Bank of Bihar	State Bank of India (SBI)
1970	National Bank of Lahore	SBI
1971	Eastern Bank	Chartered Bank
1974	Krishnaram Baldeo Bank Ltd	SBI
1976	Belgaum Bank	Union Bank
1985	Lakshmi Commercial Bank	Canara Bank
1985	Miraj State Bank	Union Bank
1986	Hindustan Commercial Bank	Punjab National Bank
1988	Traders Bank Ltd	Bank of Baroda
1990	United Industrial Bank	Allahabad Bank
1990	Bank of TamilNadu	Indian Overseas Bank
1990	Bank of Tanjavur	Indian Bank
1990	Parur Central Bank	Bank of India
1991	Purbanchal Bank	Central Bank of India
1994	New Bank of India	Punjab National Bank
1994	Bank of Karad	Bank of India
1996	Kasinath Seth Bank	SBI
1997	ITC Classic	ICICI
1997	Bari Doab Bank	Oriental Bank of Commerce
1997	Punjab Cooperative Bank	Oriental Bank of Commerce
1998	Anagram Finance	ICICI
1999	Barelly Corporation Bank	Bank of Baroda
1999	20th Century Finance	Centurion Bank
1999	British Bank of Middle East	Hongkong and Shanghai Banking corp (HSBC)
1999	Sikkim Bank	Union Bank
2000	Times Bank	HDFC Bank Ltd

[57]

The focus of study consideration by the author was post liberalization period and found that the GOI regulations on the banking sector had a direct relation with mergers in the banking industry in India. In the study the happening of mergers in different segments were studied, like, mergers between urban cooperative banks, between rural regional banks, between private banks, between

public sector banks and the ones between private and public sector banks. It was found that MNC's are likely to consider taking over many Indian banks which are inefficiently managed. The entire Indian banking sector was found to be better in controlling risks than the banking sectors of China and Russia.

Bikramjit Singh Mann and Reena Kohli [58] also did study on Indian banking sector mergers and found that market driven mergers give rise to increase in shareholders values. Event study methodology was adopted for analysis of CAR's apart from doing studies on efficiency and profitability parameters. When government regulations forced mergers in banks the values of both the merging firms were seen to come down and when the mergers were market driven the shareholders values improved. The additional finding was that when mergers were forced due to regulations the non merging firms values also came down but performed better than the merging firms. Merger based on market drive did bring long term benefits to shareholders apart from improving profitability even in short term.

Beena S [59] researched on mergers of Indian pharmaceuticals industry by way of finding out how M&A changes the concentration level of firms in the industry. For the study regression analysis had been made by making two regression equations. In both the equations the dependent variable was 'concentration of firms' and in one of the equations it was based on 'Four firm ratio' and in the other on 'Hirfindahl index'. In both, the independent variables were M&A activities in numbers, product differentiation levels, and annual growth of the industry. The findings showed increase in the concentration level of firms because of M&A activities, in both, the 'Four firm' concentration level as well as the 'Hirfindahl index' level. In this sector, when viewed globally, the role of developing countries had been meager. Due to high R&D ability required for the sector the developed countries are seen to play a dominant role. However, similar to the developed countries, the developing economies like India also see increase in M&A activities in the sector. The M&A's in the industry has some industry specific characteristics and the industry is quite a sensitive one having the attention of regulatory authorities.

Table 2.4: Market share of top firms in the Indian Pharmaceutical sector:

Details	1992-93	2003-04
Biggest 4 firms MS %	11	23.4
Biggest 8 firms MS %	16	35

[59]

In the pharma industry since importance for brand names is high, such increase in concentration of firms is expected to reduce competition and hence the recommendation to government was to adopt an M&A policy that is industry specific and not keep it same for all industries.

Ak Mishra and Rashmi Goel [60] made study on cumulative excess returns to shareholders taking the example of merger between Reliance Industries Limited (RIL) and Reliance Petrochemicals Limited (RPL). In the study the Cumulative abnormal returns calculation was used for event days around the announcement day. This was the method used to know the returns to the shareholders and a window period of twenty days was used for the study. Taking Reliance group's policy of using mergers to enhance their base, leverage and synergy effects the analysis was made basically for knowing how the shareholders realize the motives. The analysis was made for the shareholders of RIL and RPL separately apart from the effect of shareholders perception on the merged entity after the event. RIL shareholders experience decline in returns in the window period before merger and had some improvement for 11 days after the merger. Overall the returns were far less in comparison to the returns of RPL shareholders. When it was about checking the returns for the combined firm, 'RIL', after merger the post merger returns were negative. The mentioning of motive of merging for 'financial leverage gains' was also observed in the deal and hence the combined decline shows the public's view not being in favor of the motive.

2.1.11. Integration understanding:

Ratna C S V [61] and Anitha Dilipan express the importance of focus on 'culture' in the success of M&A's. Taking the case of HP-Compaq merger it has been found out how difficult and time consuming it is for different cultures to merge and bring synergy. The importance of cultural mix bringing in the intangible benefits like employees objectives, manners, team work etc has been

brought out in the report. It has been inferred that when corporate giants take over smaller or relatively weaker firms it has often imposed its culture. Example of AOL-Time Warner has been given to substantiate for cultural non congruence affecting performance. The author recommends a balancing act as a must for firms with cultural mismatch.

Samir S Mogul [62] gives report on some salient points in a M&A process that helps success. He has given this as a general view for M&A across industries. Importance of several factors have been highlighted in the study. The factors are 'Having objectives clear before starting on a M&A decision', 'Forming a M&A team to supervise and carry out the action', 'To enter in to deal in such a way that the target is not bigger than the acquirer', 'Not to indulge in addition of M&A before settling in one M&A event', 'Performing due diligence from all segments of the business', 'Calculate the possibilities of synergy from the merger', 'Preceive the cultural differences', 'Plan the method of transaction which can be by way of cash or share exchange or combination of both' and last but important step of 'Post merger integration'.

Susan Cartwright and Richard Schoenberg [16] had worked on the development of research work on mergers and observed that one of the reasons for failures in many of the mergers is due to non application of research work in practice. The observation was also made on the aspect that lot of research needs to be done on the aspect of improving post merger performance. If the development is made and technicalities are found out for good post merger performance, by applying the same the post merger performances can be improved was their finding. From the aspect of strategic development good advances has been made and the use of merger as a strategy had obtained significance and hence development in the techniques for improved performance was found as a need.

Prashant Kale, Harbir Sing and Anand P. Ramiah [63] gave a report showing the positive aspects of the post merger integration as partnership instead of rapid integration. This has become a watchword for emerging giants from developing economies. The positive aspects have been brought out in several ways. The different ways are, namely, 'Structuring business activities', 'Top Management retention', 'Operational autonomy' and 'Integration pace'.

Rosabeth Moss Kanter [64] brings out the importance of integration, in the context of global recession. In the recessionary trend more than negotiating and getting a good bargain price, by

good integration with use of positives of the targets, a company is said to be benefitted better. When the economy recovers the companies which managed to retain talent and make them integrated will grow fast is the prediction. In a recovered atmosphere good talent and technology can be applied more productively for which proper nurturing is needed is one of the recommendations in the study. In the early days powerful companies sent forceful teams to target firms and controlled them. This was more akin to some armed personnel taking charge. Against this in today's recovering economy, the author feels, smooth and mutually beneficial approach is a must. The acquirer needs to have an attitude of a learner from the good aspects of a target firm. An example working of France Company 'Publicis Grupe' when the company took over Saatchi & Saatchi has been explained. Though the target company was cash strapped, the acquirer used the systems used in communication operation and some of the management philosophies in to the parent company and benefitted. The other case of cement player from developing economy of Mexico, 'CEMEX', taking over a ready mix concrete (RMC) plant in England has also been brought out. First a company from developing economy buying a firm in developed world was not welcomed in England. The British company was environmentally in bad shape with lot of opposition to the existence of its plant in Rugby, England. The projections in the media were like, due to a satellite Television Company's legal case on this company, the plant might be destroyed in due course. CEMEX on its part had other ideas. They invested £6.5 million in the plant to make it environment friendly. A business module was formed creating a 'Post Merger Integration' team. A team which had many 'Cemex' employees was sent to England and work along with the RMC counterparts. There was cultural sharing between the two teams and team work was emphasized apart from the sharing of technology and systems. After a while the RMC turned around with good performances and the employees of RMC were proud to be part of CEMEX.

David Harding and Sam Rovit [65] made a study on some important aspects of integration which leads to success after an M&A. The report says while market size is important, having become big very fast with acquisitions does not ensure safe game in the market. From the fast moving consumer goods (FMCG) market it has been seen that every company with over $5bn revenue had built the empires strongly with acquisitions. New product development needs change and speed in FMCG sector, which purely with one company's investment levels in R&D is difficult to succeed was one of the findings. Thus one of the aspects which FMCG focuses on acquisition

is to increase in range of products, post acquisition. Every sector has an industry specific aspect which needs to be considered before acquisition so that this aspect helps in good integration.

Table 2.5: Some real positives in different industries:

Basis	**Companies from different industries**
Superior cost position	Newell, Wall-Mart
Brand Power	Procter & Gamble, Kellogs
Customer Loyalty	Rent a Car
Government Protection	GlaxoSmithKline

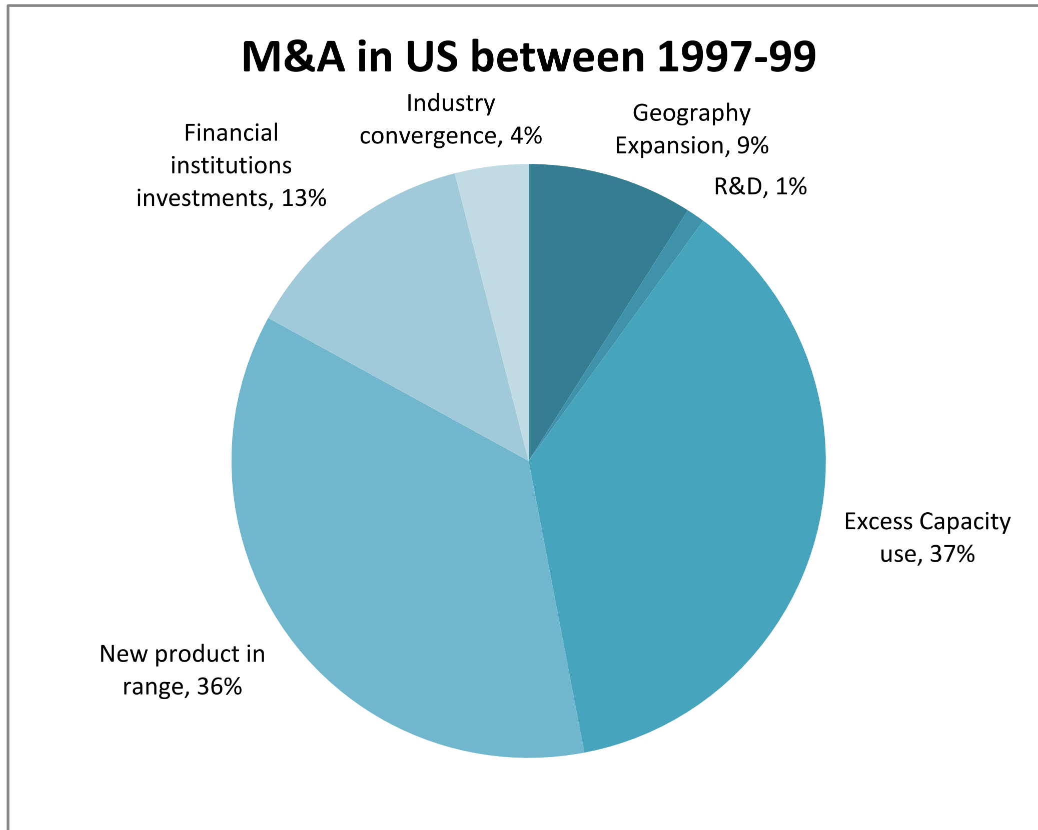
[65]

The finding was to try to do the business better after acquisitions. The researchers find that the size does play a role in giving some advantages but the process of integration helping perform the business better must be the objective, and the size should be an outcome. Strategic dealing, the report says, is against massive acquisitions and in US the companies which indulged in small and strategic acquisitions got better returns than the ones with big and few deals. Making an index study on average returns the report has presented that the companies from US, in the period 2002-03, which indulged in 30 or more small strategic deals overall got the best returns annually.

Understanding the customer base and their needs and integrating post event by focusing on satisfying these needs within the costs can be a winners game is the finding of Larry Selden and Geoffrey Colvin [66]. Before in hand, by factoring the cost of investment the actual returns against the capital are to be verified and then if found suitable only it is recommended to get on with the deal. Once it was found suitable then to go about keeping the customers and increasing their base with satisfaction is a way of mergers becoming a winning game was the finding.

Joseph L. Bower [67] views that companies have a tendency to put all M&A's it does together in as one group of actions. This results in inappropriate actions with the different deals and integration does not take the needed shape. The author has come out with five ways of splitting different M&A's based on their objectives.

Fig 2.3: Details of M&A's segregated based on objectives in US:



[67]

The objectives are stated to be to utilize over capacity acquisition, to enter a new market and operate the new company separately, to make new product extensions which hitherto could not be got quickly, R&D technology transfer between the firms and lastly the industry was losing shape and was in a declining mode and hence with a convergence objective small firms grouped together or got sold off. The author feels once these objectives are clear then the integration plan can be accordingly done and success obtained after acquisition.

2.1.12. Other important areas of M&A's:

Manish Agarwal and Harminder Singh [68] studied the merger announcement related to insider trading and its effects on prices just prior to merger event. The objective was to find out if some insiders who have access to confidential information indulge in trading and earn more than others. Abnormal returns were analyzed using event methodology taking samples from Bombay

Stock Exchange. The window taken was -150 days to -50 days prior to event. 42 companies including BIFR referred cases, group companies and non-group companies were taken. The finding was that from approximately one month prior to the announcement of merger event the abnormal returns increase in majority of the cases of mergers and acquisitions. The sample taken was for the period 1996-99. In cases of 'Group Company' takeovers and BIFR referred cases there was evidence of insider trading.

Whether there are factors that characterized an acquiring firm and target firm was analyzed by Rajesh kumar and Prabina Rajib [69]. The authors have also brought out the trend of M&A in India in the 90's. They have seen good valuable points in the trends and driving forces in the M&A activities.

Table 2.6: Details of M&A's up to mid nineties:

Year	**Mergers**	**Acquisitions**	**Total**
1974-79	156	11	167
1980-84	156	15	171
1985-89	113	91	204
1990-94	236	646	882

The figures are the number of deals [69]

Table 2.7: Details of M&A in late nineties in India:

Year	Mergers	Acquisitions	Total
1998	80	650	730
1999	193	572	765
2000	294	1183	1477
2001	319	1048	1367
2002	381	843	1224
2003	642	1664	2306
2004	272	797	1069
2005	370	867	1237

The figures are the number of deals [69]

As is evident in the table early nineties saw the turning point for M&A’s in India. Merger activities were more initially up to 1990 and later on acquisitions had picked up. The trend had been increasing from the early years and gathered momentum post 1990. The highest numbers could be seen in the year 2003 with total acquisitions touching 1664. The authors have pointed out that when the cost of acquisitions in many sectors became more than the replacement cost the number of acquisitions came down after 2003. There had been three motives behind the spurt in activities. The first was when some company is sick it aims for a helpful partner. Partnering with a performer giving use to the existing resources was one option used for takeovers. The second was, at that time the Indian economy was such it was very difficult to have market expansion and increase the sale and hence an opening in cost reduction with synergy was sought after. Thus, for this purpose some firms indulged in merging their core business to see the chances of synergy. Then thirdly some companies did capital restructuring by merging their subsidiary companies with the parent firms. For the analysis the authors used Mann Whitney U test and Kolgomorov Smirnov test to arrive at conclusions. They also applied logit regression in trying to understand the target firms’ characteristics. They found that the factors like size of acquirer being bigger than the acquired, better Price earnings ratios, lower debts to assets ratio showed significance of presence in the analysis. When it came to target firm specific analysis their finding was when the firms’ debt increased to the level of affecting liquidity position and when the management is inefficient then they can become easy targets. When size of firms were big they were less likely to be targets.

R Preston Mcafee and Michael A Williams [70] made a study to know if the competitive stock prices behavior can be used to know the competitive nature or otherwise of the merger of two firms in the industry. With the use of event study the finding was that the competitors’ stock prices does not reflect the competitive nature of a horizontal merger.

While M&A’s had been one of the tools of expansion of business some aspects that go in to its development that would augur well in the study has been seen. When we take cement sector the future looks bright but the situations are dynamic.

2.2. Gap in existing research:

The range of research work is noticeable from the reviews as follows.

Table 2.8: Literature review details:

Nature of report	Area of research	Sector	No's
Study of Merger waves	Global level	Across Industries	3
Divestment of business	Global level	Across Industries	2
Cross Border M&A's	Global level	Across Industries	1
Mergers as defense	Global level	Across Industries	2
M&A Processes	Global level	Across Industries	3
Share price behavior with M&A	Global level	Across Industries	2
Value creation with M&A	Global level	Across Industries	3
Composition of M&A and approaches	India	Across Industries	3
Motives of M&A	India	Across Industries	1
M&A Processes	India	Across Industries	1
Cross Border M&A's	India	Across Industries	2
Macro factor effect on M&A's	India	Across Industries	3
Share price behavior with M&A	India	Across Industries	2
Value creation with M&A	India	Across Industries	3
Insider trading's effect on shares	India	Across Industries	1
Study on M&A numbers	India	Across Industries	1
Study on M&A numbers	India	Finance sector	1
Macro factor effect on M&A's	India	Finance sector	2
Share price behavior with M&A	India	Petrochemical	1
Study on M&A numbers	India	Pharma sector	1
Macro factor effect on M&A's	Outside India	Across Industries	5
Technology transfer and M&A	Outside India	Across Industries	1
Post merger integration	Outside India	Across Industries	7
Post merger integration	Outside India	IT	1
Value creation with M&A	Outside India	Luxury Sector	1
Change in Business behavior	USA	Finance sector	1
Performance of M&A and module for future	**India**	**Cement**	**Nil**

Analytical work had been conducted extensively in the area of M&A at global level and outside India. This has been mostly across industries and for selected industries like finance, FMCG and

Luxury sector. In India the work had gained momentum after the liberalization as the activity of M&A's has gained momentum only after early nineties. For the Indian context there has been work done for areas like Finance sector, Pharma, Petrochemicals and across industries. The major work had been on the trend on M&A's and on the macro economic effects on M&A's across industries. For the cement sector of India a thorough analytical work needs to be done. If the fact that cement is one of the six core sectors of India is considered then the study involving consolidation and development of the industry gains significance. In the review it has been noticed that more work on M&A's sector wise would help different sectors [55]. The case of 'Luxury' sector was done and noticed that many happenings in the sector were different from overall happening in the European economy as there were lot of factors which were sector specific. Thus considering that cement is one of India's core sector and taking in to account the sector specific factors like power usage, coal consumption, productivity and investment needs, the study had been done for the M&A activities of the industry and is sincerely believed to be useful for the industry in the country.

From the literature review the country's present context in M&A activities and the need for the current study has been seen and as the next stage the background of M&A in the Indian cement sector has been taken up.

Chapter-III

Indian cement industry- A focus on M&A’s

3.1. Cement sector and its driving factors in India:

Indian economy has shown high growth by having a Gross Domestic Product (GDP) growth (2000-09) at a CAGR of 9.48% [71]. In the current decade cement sector grew at CAGR of 8.54% with the help of various economic development factors. When the GDP growth is good and along with it, the cement sector growth is also good, it shows the future prospects are likely to be good for the Indian cement industry.

To have a view on Indian cement market, as on 2010 March the total installed capacity for cement in India stands at 240 million tonnes (MT) per annum [2]. This implies India is the second largest producer of cement after China which posts over 1000 MT capacity per annum. Cement capacity addition is reported to have been planned at 150 MT by 2014 over the present installed capacity of 240mtpa. At present out of the total installed capacity the top 5 companies account for 110 mtpa (UTCL/GIL of Aditya Birla Group-46, ACC/ACL of Holcim -48, ICL-14.5) which is nearly half of the total installed capacity [2]. Among all the companies only few companies have experienced mergers or acquisitions or joint ventures. ‘Greenfield’ expansion appears difficult in cement due to getting clearance from environmental authorities apart from increase in construction costs and the gestation period involved. The expected cost of ‘Greenfield’ expansion for cement factory is about Rs. 4500 per tonne, which means for a one million tonne plant the investment is around Rs. 450 crores. When it comes to technology for manufacturing cement it involves dry, semi-dry and wet process. India is at par with other countries with major portion, 93%, of the factories being dry process of manufacturing. The per capita consumption of cement in India was 28 kg in 1980. It grew to 110 kg in 2004. In 2007 it was seen to be118 kg. For the neighbor country China in 2007 it is reported as 664 kg [72], [73], [74]. Considering these aspects together from the business point of view the increase in mergers and acquisitions are distinct possibilities among cement manufacturers.

3.2. Some of India's fiscal and monetary stimulus which suits cement industry that can drive companies for expansion:

India's fiscal policy is shaped based on the economic factors influencing the country and some of the factors which can give effect to the Indian cement industry can be seen as given below.

Table 3.1: India's economic indicators that can help growth of cement industry:

Indicator Name	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Urban population growth (annual %)	2.48	2.34	2.27	2.20	2.13	2.07	2.35	2.30	2.29	2.28
Urban population (% of total)	27.7	27.9	28.1	28.3	28.5	28.7	28.98	29.26	29.54	29.82
GDP growth (annual %)	4.03	5.22	3.77	8.37	8.28	9.32	9.27	9.82	4.93	9.10
GDP per capita (current US$)	452.97	462.82	483.66	563.19	668.30	761.97	857.21	1104.59	1066.69	1192.08
GDP per capita growth (annual %)	2.30	3.53	2.17	6.77	6.74	7.83	7.77	8.35	3.54	7.65
GDP (current US$ bn)	460.18	477.85	507.19	599.46	721.57	834.04	951.34	1242.43	1215.99	1377.26
Road density (km of road per 100 sq. km of land area)					110	120	122	126	129	n.a
Roads, paved (% of total roads)	47.46	47.74	47.40	n.a	48.62	46.99	47.72	48.24	49.34	
Railways, goods transported (million ton-km)	305201	312371	333228	353194	381241	407398	439596	480993	521371	551448
High-technology exports (% of manufactured exports)	4.76	5.57	4.82	4.66	4.93	4.74	5.00	5.28	5.69	8.60

Source: World Bank (as on March 2010)

- Urban Population is seen to grow consistently over 2% and its percentage of the total population has grown from 27.7% in year 2000 to 29.8% in 2009 which reflects urban development. This can help cement industry as housing need, infrastructure need and commercial need will grow fast in urban areas.

- Road density and the percentage of pavement of road, both, have shown improvement in the current decade and scope for improvement is still wide open. This has a direct effect on cement requirement.

- Goods movement is a reflection of improvement in trade and the railway goods movement has gone up from '305201' million tonnes/km in year 2000 to '551448'

million tonnes/km in 2009, which is nearly double. Improvement in goods transportation reflects increase in industrial and infrastructure development.

- Vast improvement seen in the portion of high tech exports shows the improvement in the economy of the country which can result in inflow of money which can result in construction development.

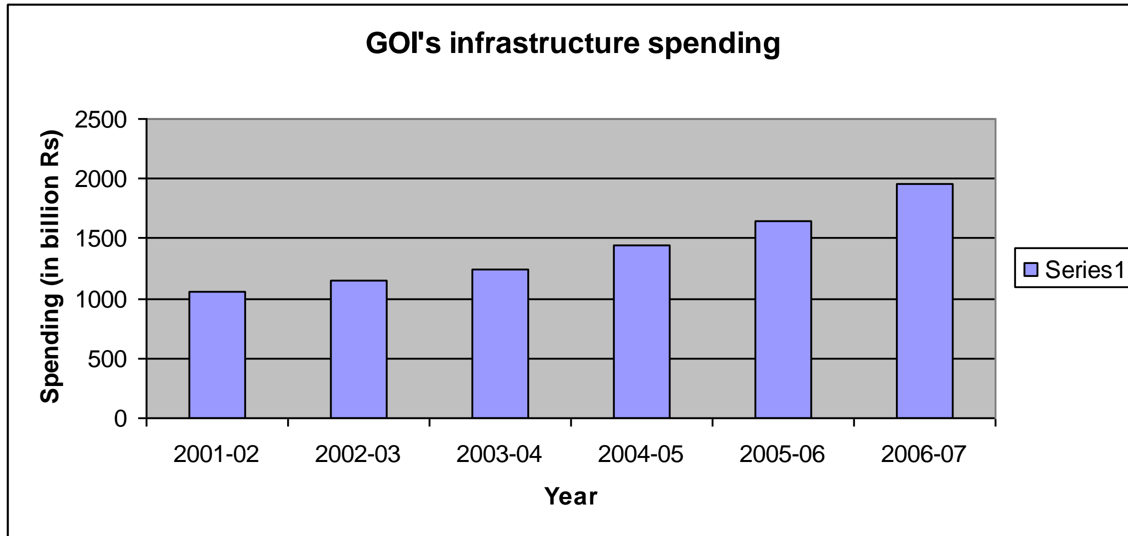
It is a coincidence that the year of India's eleventh five year plan coincided with the year of global recession gaining momentum. From the World Bank (WB) report it is inferred that the eleventh five year plan, which is for the period 2007-2012, cuts across various sectors out of which one of the important areas is infrastructure development. The Government of India (GOI) wanted to wipe out the constraints in infrastructure development and planned measures for both urban and rural areas. Infrastructure impetus is a good omen for cement industry as many of the measures helps use of cement [75].

In eleventh five year plan GOI put up an increased spending in infrastructure to about 7.6% of GDP for the plan period. When taken at (40 US$) as at the time of the plan preparation this works out to US $ 515bn. Some of the national targets put up in the plan for the infrastructure sector are as given below [76].

a) To provide electricity to all households by year 2009. Reliable power to all households by 2012.
b) The areas of over 1000 inhabitants to get roads that withstand all weather conditions and roads to all inhabitants by year 2015.
c) All villages to have telephone lines by 2009.
d) All villages to get internet access by 2015.
e) To increase the speed of housing development for rural poor so that all are covered by 2016.
f) To improve access to drinking water in urban and rural areas by 2009.

The following figure shows GOI's spending on infrastructure in the last several years.

Fig 3.1: Government of India's spending in infrastructure:



[1] [3] (Infrastructure includes roads, ports, airports, power, telecom, railways, and urban development)

When the above mentioned factors, apart from other initiatives attracting investments, are considered expansion of companies in Indian cement industry is very much on the cards.

3.3. Indian cement industry's M&A's:

Further to the factors involving increasing demand with impetus from government, the productions being more regionalized due to raw material availability there has been increase in the M&A in cement industry. After the opening up of economy in 1991 which happens to be just after the total de-control of cement sector in the year 1989, the major mergers or takeovers that have been witnessed in post liberalization era in Indian cement industry are as follows [9] [77]:

1. ICL's acquisition of Visaka cement industries ltd in the year 1997.
2. In same year 1997 Gujarat ambuja cement ltd acquired Ambuja cement eastern ltd
3. ICL's acquisition of Raasi cements ltd (RCL) in the year 1998.
4. ICL's acquisition of Sri Vishnu cements ltd in 1999 and subsequently selling it to Zuari cements ltd in year 2001.
5. Grasim industries Ltd (GIL) takeover of Shree digvijay cement co ltd and also a mini plant in Tamil Nadu, Dharani cements ltd in 1997-98.

6. TISCO ltd selling its cement division to Lafarge group in the year 1999.
7. Larsen and Toubro (L&T) takeover of Narmada cement ltd (NCL) in 1999.
8. In the year 2001 Zuari industries ltd (ZIL) took over Sri Vishnu cements ltd from ICL and then by 2005 ‘Italcementi’ took over cement firm from their existing joint venture namely Zuari Cements Ltd (ZCL) with ZIL.
9. In 2001 Lafarge group acquired the cement division of Raymond ltd which had a huge plant located at Chatissgarh with a capacity of 2.24 million tonnes per annum (mtpa).
10. In 2002-03 ACC Ltd (ACC) took over major share in Everest Industries Ltd (EIL) (A fiber cement sheet manufacturer).
11. In the period 2003-05 Grasim industries ltd (GIL) of ‘Aditya Birla Group’ (ABG) had acquired the cement division of Larsen and Toubro ltd and continued to run the firm as a separate listed company in the name of ‘Ultratech cement ltd’ (UTCL).
12. In the year 2003 Gujarat ambuja cement ltd (later renamed as Ambuja cement ltd (ACL)) acquired and merged Ambuja cement rajastan ltd (ACRL) which had been referred to the ‘Board for Industrial and Financial Reconstruction’ (BIFR) in the year 2002 vide registration number 43/2002.
13. In 2004-05 ACC made amalgamation of its two cement subsidiaries Bargarh Cement Ltd and Damodhar Cement Ltd with the parent company ACC.
14. In the year 2005 Holcim industries ltd ventured in to India by taking major share in ACC ltd (formerly the Associated cement company Ltd) (ACC) through a company named ‘Ambuja cement India ltd’ (ACIL) and also took major share in Ambuja Cement Ltd (ACL) at a later date in March 2006.
15. Year 2006 saw Dalmia cement bharat ltd merge with Dalmia sugars ltd.
16. Global player Heidelberg acquired Mysore cements ltd (MCL) in 2006 when MCL was in trouble with debts with a production capacity of 2.1 mtpa.
17. In year 2007-08 there was merger of OCL India ltd with Dalmia Cement (Mehalaya) Ltd (A Unit of Dalmia group).
18. In the same year multinational player Cimpor Cemntos De-Portugal took over major stake in SDCCL which was controlled by GIL.

19. In the year 2008-09 one of India's major corporate groups Jaiprakash Associates Ltd (JAL) decided to go in for Amalgamation of its cement, steel and real estate business with its parent company JAL.

For the study except Lafarge entering India other cases have been taken as Lafarge's financial documents of Indian operations are not declared open. Also in 1997 and 1998 ICL was involved with takeover of Visaka cement sheets, Raasi cement and Sri Vishnu Cement Ltd. Of these within two years SVCL was sold to ZCL. Due to these combinations, the deals between ICL and RCL and that between ZCL and SVCL have been taken for study. Visaka cement being a fiber cement manufacturer and RCL being a main cement player in Andra Pradesh the deal between ICL and RCL had been taken for study as both happened within a year.

Out of these cases, three deals assume huge significance due its size and impact on the industry. GIL, UTCL, ACC and ACL today control 40% of the countries cement sales which reflect their importance and influence. All these four have been involved in 'Takeovers' in the current decade. GIL and L&T were involved in GIL taking over L&T's cement division (renamed as Ultratech Cement Ltd). Holcim Ltd with ACC and ACL was involved in a major cross border acquisition. It was seen that all these were involved in complicated deals and took long time of over a year to solve it. Apart from these ICL, which as of 2010 holds 14.5 mtpa as installed capacity, being the third major player in the country was also involved in a complicated deal with RCL.

3.3.1. An overview of the major three cases of M&A's in Indian cement industry:

3.3.1.1. Grasim Industries Limited (GIL) takeover of cement division of Larsen and Toubro Ltd (L&T) [10] [78]:

This is seen as one of the biggest mergers in our country in any industry for that matter and it came from the cement industry.

L&T profile:

This is basically 'Engineering and Construction' Company and a very large one in size. Right back in 1946 by way of a partnership between Henning Holk-Larsen and S.K. Toubro this firm got kick started. In 1951 the organization went public and after decades it had been a collective

conglomerate having Information technology, Cement, Financial services, Electricals etc apart from Construction. In many infrastructure projects of the country for quite a long period since independence L&T had played a major part in execution. By the year 2002 the cement business was contributing 26% of the total revenues while the major 'Engineering and Construction' business was contributing 60%.

The cement business had ten plants in five places all over India by 2002. They were, Gujarat Cement Works (5.3 million tonnes per annum (mtpa), Andrapradesh Cement works (2.3 mtpa), Hirmi Cement works (1.6 mtpa), Awarpur Cement works (3.3 mtpa), Arakonam Cement works (1.2 mtpa). With the overall capacity of 17 mtpa it was easily the biggest manufactures in India by year 2002. At this point of time the investment for cement was high and revenues were low. Peeved by the situation the company had sought the advice of consultancy firm Boston consultancy (BCG) and BCG's recommendation was to de-merge the cement business and at later stage get a strategic partner.

GIL profile:

This has been part of the Aditya Birla Group (ABG). In 1947 ABG was formed. By name of Grasim Rayon this was basically a "man made" fiber producing company. It has added to its belt other businesses like chemicals, cement, sponge iron and textile business since its inception. The company had recognition as India's lowest cost manufacturer of 'Viscose Staple Fiber' (VSF). The company's market share in VSF in India was a staggering 90% and at the world level at 24% in the late 90's itself.

Cement business of GIL: GIL ventured in to cement business in 1985 by way of new plant, Vikram cement, in Madya Pradesh. By 1987 and 1991 the firm had added by way of expansion two more production lines in the same plant. Four years hence two new plants at Raipur (Madya Pradesh) and Shambhupura (Rajastan) were added by way of expansion.

The first acquisition by the firm was done in 1998 when they acquired Dharani Cement (Mini plant in Tamil Nadu) and Shree Digvijay cement Company Ltd., (Gujarat). The objective was strategic to strengthen their presence in south and western part of India. In the same year Indian Rayon Industries (IRI) which had grey cement plants in Jawad, Shambhupara, Malkhed, Rawan and Reddipalayam was merged with GIL. Apart from grey cement IRI had white cement plant in

Kharia, Rajastan and six ready-mix plants for concrete in Hyderabad, Chennai, Noida, Bangalore and Gurgaon.

Thus with the help of expansion and acquisitions by 90's GIL had become the third biggest cement player in India with a total capacity of 10.72 mtpa behind L&T and Associated Cement Company (ACC).

Events leading to Acquisition of L&T by GIL:

Reliance group had a share of 3.92% in L&T in September 2001. By November 2001 they had increased their share to 10.05% in L&T. In the same month GIL purchased the 10.05% from Reliance at a price of Rs. 306.6 per share, which was at 47% premium over the quoted market price at that time. The transaction worked to Rs. 7.67 billion.

With this development, in the L&T board, GIL members replaced Reliance members in the same month. In December 2001 Investor Grievance Forum (IGF) was of the opinion that Reliance had purchased L&T share just before it sold to GIL and so it had more than just buying and selling motive as Reliance had access to L&T's future plans. Accordingly a complaint was registered to Securities and Exchange Board of India (SEBI) and SEBI took up an investigation with Reliance. Subsequently by July 2002 Reliance had to pay a penalty for not informing L&T for addition of shares between September and November 2001 as it violated SEBI guidelines for declaration of purchase if the percentage of share goes over 5% stake in a company.

In the mean time in May 2002 GIL increased its stake in L&T by acquiring 2.84% shares from the open market for price between Rs 175 to Rs. 180 per share and by the end of June 2002 its stake in L&T was 13%. GIL continued its purchase of the shares and had 14.48% stake by September 2002. Now as per SEBI regulations as its stake was like to be over 15% GIL made an open offer in the market to acquire additional 20% at a price of Rs. 190 per share, which was at a premium over the average price of Rs. 174 per share of L&T in the previous 26 weeks.

The financial institutions (FI), namely Life Insurance Corporation (LIC) and General Insurance Corporation (GIC) who had stake in L&T, observed that the price offered to the purchase was less when compared to GIL's purchase price of Rs. 306.6 from Reliance and so declined to be part of the open offer. By October 2002 they had declared their non participation in the open

offer. The FI's felt as members of the board of L&T, GIL need to increase the value of the company and hence the offer price below that of what was given to Reliance was against the interests of the company. They also observed of GIL that as board members of GIL they also had to reduce the cost of acquisition and so had a conflict of priorities in interests. GIL on its part had the power to stop any resolutions once its stake got over 26% in L&T.

SEBI gave a stay order to the open offer in November 2002 with the reason that they were also studying the merger of another case in the same industry, of that between ACC and Gujarat Ambuja Cements Limited (GACL).

GIL came out with a vertical merger plan at this stage. As per the plan the cement businesses of L&T to be de-merged in to a separate company and listed in the stock exchange. All shareholders of L&T were to get the shares in the new entity but however L&T should not hold anything. But L&T board did not agree to this. The financial institutions at this juncture tried to increase their stake over 10% in L&T to hold veto power with respect to third party interference. GIC which had 8.24% then, was to increase its stake to over 10%. Two other FI's in the frame were Unit Trust of India (UTI) with 10.34% and LIC with 17.42% stake.

A United Kingdom (UK) based firm Commonwealth Development Corporation (CDC) made a proposal to invest in L&T's cement business in December 2002. As per CDC's plan L&T was to de-merge the cement business and make optionally convertible debentures. Then CDC will subscribe to the debentures and will have the liberty to convert the debentures in to equity up to 6.8% stake in the company. It will also have a time period of up to end of 2004. While L&T was contemplating to agree to the proposal GIL objected to the acceptance legally. As per SEBI guidelines once an acquiring company has given an open offer the target company should not dispose of assets of the firm. It also cited companies act 394 to its defense. Meanwhile the discussions between CDC and L&T itself took lot of mutual discussions and postponement and CDC withdrew its proposal by February 2003. GIL on its part tried merger plans with better framing than the proposal of CDC but L&T could not agree. L&T appointed Investment Information and Credit Rating Agency (ICRA) to analyze the proposals and also sought the advice of noted corporate consultant Mr. Gurumurthy. The advice of Mr. Gurumurthy gave fitting solution to the issue. According to him the de-merged firm will have shareholding in the form of GIL 51%, L&T 11.5%, FI's 18.2% and public 19.4% with the condition that GIL should

give back all of its stake in L&T back to L&T itself. Thus GIL will not have any say in L&T which suited L&T and also GIL got the cement division which suited its core business. With this GIL had a cement business with a total capacity of 31 mtpa, 17 mtpa got from acquiring L&T and its own 14 mtpa becoming a pan India player.

Useful inferences from the case:

- If the image of a firm and its power in the market is very high it needs to be very careful before giving open statement of its sensitive plans. The aspect of L&T making open of its desire to divest cement business much before something took shape made business groups in the industry to eye for it and plan and squeeze the opportunity.
- When it comes to big deals both the acquirer and target have to be patient and focus on smooth process.
- To focus on core business area is an important criterion for both acquirer and target.
- For Shareholders approval in a deal a win-win equation in an important need.

3.3.1.2. Holcim Group takeover of ACC [11]:

Holcim Group profile:

Holcim is one of the oldest cement companies in the world starting as early as 1912 in Switzerland. Cross border business expansion was undertaken by Holcim in the 1930’s in the areas of South Africa and Egypt. From 1950’s up to the 60’s the group expanded in North America market. Since 1970’s in different pockets of Asian markets the groups cement business has been expanding.

The group operates in the segments of Cement, Clinker, Aggregates, Concrete and other cement related products like cement bricks and pre-cast concrete structures. The group became a highly integrated supplier in the building material segment through various acquisitions and mergers in different countries across the globe. Because of expanding in different segments the revenues came from different directions. The total number of cement plants the group had by 2003 been 129 with global capacity of 142 mtpa and had 739 ready mix plants. Thus, well early this century Holcim was a huge global player in Cement Industry.

ACC profile:

ACC is the oldest cement company in India being incorporated back in 1936. It employs over 10000 staff and has a true pan India presence with distribution network of over 9000 outlets across India. The plants are located across India as follows.

Table 3.2: ACC's pan India presence and plant-wise capacity:

Cement plant and its locations across India	Capacity (mtpa)
Bargarh Cement Works, Bargarh	0.96
Chaibasa Cement Works, Jarkhand	0.87
Chanda Cement Works, Maharshtra	1
Damodar Cement Works, West Bengal	0.53
Gagal Cement Works, Himachal Pradesh	4.4
Jamul Cement Works, Chhattisgarh	1.58
Kymore Cement Works, Madhya Pradesh	2.2
Lakheri Cement Works, Rajasthan	1.5
Madukkarai Cement Works, Tamil Nadu	0.96
Sindri Cement Works, Jarkhand	0.91
Wadi Cement Works, Karnataka	2.59
Wadi Cement Works (New), Karnataka	2.6
Tikaria Cement works, Uttar Pradesh	2.31
Total	22.41

[79]

The table 3.2 reflects true pan India presence for ACC making it one of the most attractive companies in the industry. When it comes to manufacture of ready mix concrete ACC started it in 1993 and since then expanding with a total number of 30 plants across India.

Turning point for merger:

There was a turning point in 1999 when another cement major who concentrates on western India namely Gujarat Ambuja Cements Ltd (GACL) purchased half of the 14.45 % share held by TATA group in ACC. The value of purchase was about Rs. 4.5 billion. It is reported that to stop some multinationals like Lafarge from entering the frame this purchase was done by GACL. In ACC, at high level meetings it was felt that it was more than just purchase of shares by GACL as

the transaction amount was huge. As per the speculations GACL tried to increase its stake by purchasing the remaining portion of the TATA's share with an overall investment of Rs. 9.2 billion. But unfortunately for GACL in spite of this huge investment to have a say in the board of ACC and have influence in its decisions, GACL had to make an open offers as per SEBI guidelines for additional 20% stake in ACC. This meant it was an investment which would make it debt heavy, due to which GACL would become a 'high debt' company. In this situation GACL brought in the idea of transferring its share holding in ACC to a new holding company, as a subsidiary company, in the name of Ambuja Cement India Limited (ACIL). This relieved the books of GACL being directly in debt. This also gave the option to bring in strategic partners to this new firm where by additional funds can be generated without making GACL becoming highly debt oriented. Singapore based private equity firms namely, 'Asian Opportunity Fund' and 'GIC Special Investments' came forward to taking on 40% stake in ACIL with the remaining 60% stake going to GACL.

Now GACL management felt they could make ACIL listed as a public limited company and raise fresh capital from the public which in turn can be used to make open offer for buying ACC's shares. Unfortunately the investment bankers disapproved this option as the holding company does not have a direct revenue generating source and hence investors would not appreciate and help raise the capital needed.

Opportunity for Holcim:

This situation worked as an opportunity for Holcim to come in to the frame of things. As GACL had only one option, that is, to get a strategic investor to raise capital to buy ACC shares giving open offer, their management approached Holcim for the same, being aware that Holcim is on the lookout for a strategic opening in the region. For Holcim to ally with GACL, ACIL formed the platform. Now as a first step to form the alliance Holcim bought the 40% stake held in ACIL held by the Singapore based equity firms for a healthy sum of US$ 200 million, which worked out to Rs. 392 per share. Since the holding company ACIL was not listed in the stock exchange the equity investors had the right to sell their stake to third parties. This helped GACL in that it did not have to raise funds to pay the equity investors for buying back their 40% and Holcim came in handy. Holcim further increased its stake in ACIL by increasing its stake from 40% to 66% by taking share from GACL.

In ACC, FI's had 18.63% stake and foreign institutional investors had 23.27% stake. At this point of time ACIL, in order to get a 50.01% stake in ACC and gain control, made the open offer in March 2005 at the rate of Rs. 370 and FI's and public investors of ACC had the option of selling their shares to ACIL. Initially the FI's objected to the offer price as this was less than what was paid to the private equity investors in ACIL. But after Holcim refused to revise its offer price, by the end of April 2005 ACIL managed to acquire 20.8% additional stake through their open offer. Now the total stake came to 34.6% which meant nearly 15% additional stake needed to be made to get the objective figure of over 50% stake. ACIL followed the creeping acquisition route to buy from the public for future, but with 34.6% stake being the highest in ACC's equity structure, and ACIL controlled by Holcim became the promoter of ACC.

Useful inference from the case:

- Keeping MNC's at bay is an important motive for big players in an industry as seen by the motive of ACL in buying the share of ACC from 'TATA's. Here though the motive is in proper direction, when the amount required for finishing the deal is high, proper pre planning becomes a must. Otherwise it can prove counterproductive as seen in this case with the ultimate result turning out as an MNC like 'Holcim' of taking over both the acquiring and the target firms together.

3.3.1.3. Events with respect to the takeover of Raasi Cements Ltd., (RCL) by India Cement Ltd., (ICL) [80]:

ICL profile:

ICL is appreciated to be undisputed leader in southern part of India as they already had 5.2 mtpa capacities by early 1998.

Table 3.3: ICL plants and capacities (as of 2009):

Plant and its location	Capacity (mtpa)
Visaka cement works, Andra Pradesh	0.9
Sankaridurg, Tamil Nadu	0.6
Yerrakuntala, Andra Pradesh	0.4
Dalavoi cement works, Tamil Nadu	0.9
Chilamkur cement works, Andra Pradesh	1.3
Shankar Nagar cement works, Tamil Nadu	1.1
Total	5.2

[81]

Brief of mergers and acquisitions undertaken by India Cements Ltd (ICL) in India:

It started in 1990 when Indian government brought in the new economic policy of opening the Indian economy for expansion. Though this was creating motives in many industries for investments and expansions, in cement sector it was India Cements Ltd (ICL) which initiated the inorganic growth. In 1997 ICL acquired 'Visaka Cement Industry Ltd, Tandur in AP, which produced 0.9 (MT) and was mainly a cement sheet manufacturer. Subsequently there were two acquisitions one in 1998 ICL acquired Raasi cement Ltd., in Nalagonda district of AP, which produced 1.8(MT) and another in 1999 taking over Sri Vishnu cements, also in Nalagond district, which produced 1 (mt). These mergers made the sales turnover cross over Rs. 1000 crores for ICL for the first time in its history. In 2001 due to financial factors ICL divested Sri Vishnu cements to Zuari Cements Ltd., of KK Birla Group.

RCL profile:

RCL was promoted by Mr. Raju and his son-in-law Mr. N. P. K. Raju in 1978. RCL was known to be low cost producer and very strong brand in certain pockets of Andra Pradesh like

Hyderabad. The production that was more than what it was able to sell in AP was sold in nearby states of Tamil Nadu and Karnataka. These were pulling down the profit as RCL did not have its brand established in other states and had to compromise by giving lower prices in these markets.

Share transfers:

It was considered by analysts that it can well be strategic for ICL to take over RCL.

In 1995 certain secret happenings occurred when one of the three son-in laws of Mr. Raju who had 0.68 million shares (4% of equity) in RCL had sold it to ICL. In 1996-97 ICL had acquired 0.13 million shares from the open market. The market rate was around Rs. 90 per share up to middle of year 1997. By middle of year 1997 ICL had a stake of close to 5% in RCL. In Oct 97 the market rate fell down to Rs. 50 per share for RCL and ICL took the opportunity to increase the stake. From the open market ICL increased their stake to 8% in RCL.

By January 1998 ICL had succeeded in purchasing 18.3% of the shares of RCL from the open market. Analysts felt that ICL had motives of taking over RCL as RCL had 1.6 mtpa capacities then and with the addition of this, ICL was to be a clear leader in southern India.

As predicted by analysts and reporters, by February’ 98 ICL decided to go for open offer for additional 20% as per SEBI guidelines. ICL offered a healthy rate of Rs. 300 per share which was a clear 72.4% premium over the market price of Rs. 172 per share in February 98 for RCL. The offer period was from April 15th 1998 to May 15th 1998. As the offer price was very good ICL bought shares from Andra Pradesh Industrial Development Corporation (2.13%), Valampuri and Co of Chennai (1.4%), V. P. Babaria, a transporter of RCL, (7%) and took the overall stake to 28.56%. With the stake over 25%, as per SEBI guidelines, ICL had veto power towards any resolution put up for approval with RCL stakeholders. Up till then Mr. Raju was the main promoter of RCL with 33% as his stake. Now there was a clear sign of ICL overpowering Mr. Raju to take over RCL. On Mr. Raju’s part there was helplessness by way of a need to arrange for over Rs 100 crores to increase his stake to 51% from 33%. Thus as an aftermath he had a deal with ICL and sold his 33% to them at a price of Rs. 286 per share for a transaction worth Rs. 149 crores. With this decision, the deal of RCL with ICL ended smoothly.

After having seen the issues involved the study is aimed at giving good insight in to the subject of M&A activities in Indian cement sector and to be useful for future deals. As seen in the demand growth trend, capacity addition trend and the infrastructure development trend it is projected by research agencies like CRISIL that the demand and supply match will get balanced by the year 2013[8]. When such projections are there study on M&A's, which supports consolidation of the industry has been done for the benefit of the industry.

Useful inference from the case:

- The promoters need to keep a watch on the market developments with respect to the share transfers of the company. If the promoters aspire of having major hold on the company then being proactive towards having 'hold' over 51% is important. As seen in this case after ICL started taking shares from the market on RCL, the major holders, 'Raju's' were not proactive in increasing their hold from 33% to over 50%. This resulted in a critical situation leading to succumb to selling of the firm.

Chapter –IV

Materials and Methods

The materials have been taken from different sources and the methods which are in lines of statistical tools have been used for the study.

4.1. Materials:

The merger or acquisition details have been taken from 'Centre for Monitoring Indian Economy (CMIE) prowess data base and from 'Securities and Exchange Board of India (SEBI). For the analysis of share price reactions and returns based on index levels the data has been taken from 'Bombay Stock Exchange Ltd (BSE)' data base. For the financial and operational analysis concerning the individual companies the data has been taken from the respective annual reports of the companies. Whenever data regarding the cement industry had been required the data base from 'Cement Manufacturers Association' has been used and for macro economic data reports published by notable research agencies CRISIL Ltd and World Bank (WB) has been used [1] [9] [19] [77] [82].

4.2. Research methodology:

4.2.1. Economic event:

An economic event can have an effect on the value of the firms. The effect though in imagination appears as a complex issue for the 'shareholders', their reaction goes a long way in changing the value of a firm. The aspect of financial market data is used to see the effect of an event on the value of the firm. The effect of an event getting reflected on the security prices can be seen and analyzed. Over a short period security prices are observed and the fluctuations analyzed with respect to the overall fluctuations of all main securities in the market. When a firm specific economic event takes place then its effect on share prices reflects shareholders reaction or observation of the event. An example of an event is announcement of merger or acquisition by firms. In the majority of applications, the focus is on the effect of an event on the price of a particular class of securities of the firm. When a merger is announced to the stock exchange then the prices of the concerned acquirer and the target firm needs to be studied. It started in the year

as back as 1933, when James Dolley of US published a report on the fluctuation of stock prices based on a split announcement by companies [15] [16]. The data for a period of ten years from 1921 to 1931 was taken up and presented by him. Then for thirty years from 1930 to 1960 the application of 'event study methodology' increased for the analysis of the values of the firms. Some more work done by specialists were that of John H. Myers and Archie Bakay (1948), C. Austin Barker (1956, 1957, 1958), and John Ashley (1962) [15] Ray Ball and Philip Brown in 1968 and in 1969 Eugene Fama found ways of analysis which was similar to what is done of late [16].

Mergers and acquisitions can be considered as events which can reduce or increase value for shareholders. For the event studies, the main criterion is about finding out the abnormal stock return for the period under consideration. The normal performances are noted and from that the abnormal returns are measured. In the event study there are several models by name of 'Constant mean return model', 'Market model', 'Capital asset pricing model'. Out of this 'Market model' is used for this study as the aspect of an event having an effect on market price of stocks is an extremely valid aspect for merger or acquisition announcement [46].

4.2.1.1. Market Model:

In this method of analysis, with respect to the market portfolio how the 'returns of security behaves' gets analyzed. For a security 'i' the market model is given as a linear equation. The equation is:

$$Rit = \alpha i + (\beta i \times Rmt)$$

Where '*Rit*' and '*Rmt*' are period't' returns on security 'i' and market portfolio respectively. The indicators, '***αi***' and '***βi***' are parameters of the market model. If the regression equation between market portfolio and returns for a particular security is taken, then '***αi***' is the 'Y' intercept and '***βi***' is the slope of the equation. For a given market return what is the expected return for a security can be seen from the equation. In the calculation the broad based 'Bombay Stock Index' was used in the market portfolio. This model is basically an improvement over the previous model of constant mean returns. The difference between the actual returns and the returns as per market index expectation gives the abnormal returns. From this calculation, the cumulative abnormal returns for the 'Event Period' have been calculated. The event period is three days

prior and three days later, to the announcement day of ‘merger’ or ‘takeover’ at the Bombay Stock Exchange (BSE). This totally works to seven days. The ‘Alpha’ and ‘Beta’ (‘α’ and ‘ß’) are calculated taking a period of ten days just before the Event period. This is termed as ‘Evaluation period’ [18].

In the study the main objective is to observe the reaction of shareholders for a M&A event in the cement industry. From the CAR we get an idication of the effect of reaction on the event. The reaction for an event can be instinctive with respect to the opinion and expectations the public have on the effect of an event on the firm. To know the immediate change in effect an ‘event period’ of ten days just prior to the ‘event window’ has been used and for the instinctive reaction based on opinions an ‘even window’ of seven days has been selected.

4.2.1.2. Methodology:

The analysis had been done by taking the M&A cases of the Indian cement industry under study which are listed in the ‘Bombay Stock Exchange’, and cases of M&A, in the recent past between years 2004-05 and 2007-08, involving other sectors across industries.

Using the Market model the CAR’s of the acquirers and the targets had been calculated for the non-cement sectors. Then how the cement sector’s share price behavior exists in relation with non cement sector had been analyzed. To know the behavior of the sectors the relation between the CAR values during the event period for acquirers has been studied using ‘ANOVA’ for both cement and non cement sectors separately. Then the same had been done for the target firms of both the sectors. In both, cement and non cement groups, if any variation exists in returns between targets and acquirers had also been studied.

4.2.2. Financial parameters analysis:

M&A generates focus for both who are involved in the activity and for those whose money is involved in the activity. The activity can be an investment or become an expense. When these two extreme possibilities are there the business gains the very high level of importance of making it an investment. When the aspect of requirement of high volume of investment is considered it adds to the significance. In cement industry the investment involved runs from hundreds to thousands of crores of rupees and when this high value is invested the returns that

are to be gained is likely to be watched by the major shareholders of the companies and the public investors who are open for investing in good ‘value adding’ shares [13] [19] [83].

M&A involves diverse areas involving the firm, the industry and the macro economic conditions prevailing. The company related areas like corporate handling, economic conditions of the firms, the industry’s situation, and efficiency has an effect in post event performance. While macro economic conditions are out of control, the post event performance of the resources of the firm can be greatly influenced due to the efficiency of performance of the companies involved.

In the event of M&A in cement industry there are two broad possibilities like, after event, both operate as separate companies managed by one group with one being the subsidiary of other, and the other possibility of both merging and becoming one different firm. In both these possibilities the financial consideration and involvement is high and the returns are important. Keeping this in view the financial aspect is taken as one of the factors for analysis in the study of M&A of the Indian cement industry. The chapter involves financial and operational implications of event on the firms involved. The implications are studied by way of direct returns from the operations and from the point of view of shareholders, how the market has viewed and appreciated the performance and how has been the economic value addition and market value addition been there, which are based on shareholders level of acceptance of the performance.

The following are the financial parameters taken up.

4.2.2.1. Operating profit margin (OPM):

Increasing profitability is one of the main objectives in most of the mergers and hence this parameter had been taken. Also the increase in OPM indicates either increase in revenue with higher pricing or reduction in costs involved or both. In any way if there is an increase in OPM, post merger, it gives a good indication for the firms benefitting from the merger or acquisition as the case may be. Operating profit or loss happens to result in a business for a period. The aspects of interest on debts, depreciation on assets and taxes has an effect on the net profit, but the operational level profit gives the indication of the financial efficiency of returns at the operation level. The other aspects mentioned above are not directly involved in the operations. Cement industry is a manufacturing sector where manufacturing process is a lengthy one and involves several stages. The aspect of raw material availability and closeness of the manufacturing

process to this availability is important. Operational efficiency by way of reducing the cost of manufacturing along with capability to have higher revenue with better pricing helps increase OPM. Hence this parameter is chosen as the relationship is between revenue and operational income. Since the companies in the industry are of different sizes instead of taking an absolute value, in order to understand the relative performances the operational profit margin has been taken up [83].

This has been worked out as Profit before depreciation, interest and tax divided by net sales for the year. The analysis reflects if in post merger there had been any increase in operating profit margin.

4.2.2.2. Net profit margin (NPM):

This reflects good financial management. For profitability being a key objective in mergers this parameter has been taken. After the tax, interest and depreciation commitments what amount is there as a net result of the business is clearly one of the major satisfying factors for an investor. Since the companies in the industry are of different sizes instead of taking an absolute value to understand the relative performances the net profit margin has been taken up. Since investment is high in cement industry and since the interest burden can be huge the net profit margin gives the reflection of financial prudence of a company. The relationship between net profit and income gives the overall performance aspects involving operational and financial aspects apart from ability to earn higher revenue with companies' image etc [83].

This has been worked out as Net profit divided by net sales. This reflects how well the overheads had been controlled in proportion with the increase in sales and changes in environment, if any.

4.2.2.3. Return on capital employed (ROCE):

From the shareholders point of view this gives how well the operations were done against the investment by way of equity investment, reserves and financial borrowings. This is one of the most important one used by the industry to see the efficiency. This can be useful to the present shareholders and the future shareholders. A company with higher ROCE will be appreciated by the shareholders. Here the relationship is between investment and returns [83].

This ratio gives a measure of return on the capital employed in the business which is a key parameter to know the direction of performance post merger. Since merger involves hectic activity and great initiatives to know the return on capital put in has been taken up. An investor would like the ROCE to increase for their investment better than a comparable investment of the same money. This had been worked out as profit before interest, tax and depreciation divided by the capital employed. Capital employed is taken as total assets less the current liabilities.

4.2.2.4. Debt to equity ratio (D/E):

Since mergers involves taking over of debts to purchase the company or deciding to absorb debts of the target company, in view of other positive factors, and also proportioning the shares as part of the purchase arrangement this aspect is taken. An increase in debt to equity ratio over pre-merger is a key factor to be observed as it involves higher out go of interest. Ideally a debt-equity ratio is expected to be less than '1'. Too much of reduction also indicates unused leverage and too much of increase over the value of '1' indicates risk. Thus for knowing the risk involved in post merger performance this parameter has been taken up. If an acquirer has good reserve funds the firm may try to use it by way of M&A and if the debt level of the acquirer had been high and if a target firm with very little debts can be got it can be a balancing act for the acquirer. Debt equity ratio is calculated as total borrowings divided by net worth [83].

4.2.2.5. Financial parameters for shareholders value addition:

To know the impact of M&A's on shareholders' value addition three factors taken in to consideration for analysis. They are:

1) The Economic Value Added (EVA)
2) The Market Value Added (MVA)
3) Return on Net Worth (RONW)

The above have been worked out for three years subsequent to merger activities. This is done to both the acquiring as well as the target companies which are listed in BSE and the result analyzed.

1) Economic Value Added:

Gurminder Kaur [84] had studied the utility of EVA. Shareholders wealth to be bolstered is one of the important aspects to be considered in mergers. In merger the company's wealth, for which one of the source is shareholder's wealth is used to acquire firms. EVA is considered as a direction towards value creating activities in an organization. It is an indicator for the direction of values which helps management for an overview. It was studied based on empirical evidence taken from US reports. Better utility of shareholders contribution and better returns to them makes them invest more. This has a cumulative effect on the growth of the firm. Among the factors used to calculating the value added to a firm the area of risk taken by the firm is important to the shareholders. Against the risk taken how much it has been a safe investment is a major shareholders concern. In EVA calculation the factors of risk, capital employed, exposure of debts and its cost, market value of the firm and profitability all are considered collectively. Thus, this is a good indicator of the value of the firm though the area of market value has an element of environmental factors which are beyond the control of the firm. Even in that case the market value depends to some extent on the adaptability of the firm to changing environment and hence the factor gains significance. In other words market value reflects how people perceive the performance of the firm in a given market environment. Shareholders are concerned about how the money was used, how it is performing and how it will move in future. So past, present and future of their finance is important to them.

2) Market Value Added (MVA):

This views how much the value is added in the market with the performance of the firm as observed by investors. When the market value addition is there shareholders on their part would be happy for progressing correctly. When the returns on the shares are more than the cost of investment then the shares will get traded fast in the stock market. When the trading increases, then the returns also are also likely to increase. A company's MVA depends on the return of its shares in relation to the investment amount [85].

3) Return on Net Worth (RONW):

RONW is the returns as seen from the net worth of the company, which reflects the performance efficiency of the firm. The returns which the projects or the products generate in the business against the net worth are the 'RONW'. Higher values are termed better performance [85].

4.2.2.6. Methodology:

For the sample of mergers taken up, financial performance has been taken for the period of three years before an event and for three years immediately after the event. Uniformly the year of merger had been accounted in the three years' post merger for all the companies. To get to know of the M&A's effectiveness for the industry the average of the three years values before merger for each parameter is compared with the average of the three years values post merger. On this the 'Paired't' test at a confidence level of 5 percent has been applied to see the level of significance [20].

The null hypothesis taken for impact of M&A's on financial performance is as follows:

H1: There is no impact of M&A's on the financial performance parameters of the sample cases.

H2: There is significant impact of M&A on the financial performance parameters of the sample cases.

Thus a two tailed test is used to test if the result is 'Significant' (SIG) or 'Not Significant' (NS). This hypothesis has been applied for all the financial parameters separately to see the significance.

Since merger involves synergy in post event performance and since synergy does not happen immediately and grows with time a comparison of the performance for the parameters between the first year post merger with that of third year has been done to see the change in the progress.

EVA, MVA, RONW [85]**:**

EVA has been calculated using the following formula.

EVA= Net operating profit after tax adjusting Interest (NOPAT) –the cost of capital employed (COCE).

COCE= the weighted average cost of equity and debts (COC) multiplied by the capital employed (CE).

COC= ((E/K) X y) + (D/K) X b) X (1-Tc)

Where E= Market value of equity.

D= Debts observed in business.

K= E+D the total observed capital.

y= cost of equity

b= cost of debts

Tc= corporate tax rate.

CE= Total debts plus the net worth.

Higher EVA indicates better performance.

MVA is calculated as follows:

MVA= (Market value of the company) – (Equity employed).

Higher market value indicates better performance.

RONW has been calculated as follows:

RONW= (Profit after tax)/ (Net Worth).

4.2.3. Operational parameters analysis:

Since cement business involves daily operation and liquidation of the perishable stock, productivity and sales increase are vital factors that give a reduction in fixed cost per bag. Since post merger, companies are open to share each other's markets and sales distributing points and thereby reduce their average distance of transporting cement this factor also indicates several benefits.

There can be a situation of increase in sales quantities apart from the average distances taken to distribute cement getting reduced. Normally before an M&A if a company wants to increase the sale it has two options. One is to increase the sale in the existing area and the other is to extend the geographical area of sale. To increase sale in the existing area it is extremely difficult and sometimes if the market share is good and if a company tried to expand further in the area it can

adversely affect the prices. This factor of pressure on prices is more prevalent in cement as it is basically a commodity with a brand name. If a firm takes the second option of increasing the geographical area of sale then cost factor goes up as cost of transportation of cement is very high. Thus M&A gives an excellent option to extend market by making use of the target brand in the new area and also increase sale in the existing area utilizing the additional counters of the target brand and substituting the target brand with the acquirers brand or vice versa as per the suitability of the situation.

For example the transportation cost in cement as a portion of price of cement is in the region of 6-10 %. When companies buy other companies, they plan sale of both the brands of purchasing company as well as that of the target company from the same factory. This helps to penetrate the nearby market with the brands of both the firms at a reduced cost. A classical example can be seen from the study. Grasim industries limited (GIL) has a factory in place called Reddipalayam in southern part of the state of Tamil Nadu. Larsen and Toubro ltd (L&T) has a factory in place called Arakonam which is in northern border of the state. After takeover of cement division of L&T, from the factory at Arakonam both the brands of GIL and L&T (renamed as Ultratech cement) were produced and sold to northern part of Tamil nadu. From the factory at Redipalayam also both the brands of GIL and Ultratech were produced and sold to southern part of Tamil nadu to reduce the average freight involved. Thus increase in productivity of the factories coupled with increase in market penetration and freight cost reduction apart from reduction in fixed cost per bag of production at the factory point has been witnessed [86].

4.2.3.1. Operational rates:

The productivity is arrived at when the production is divided by the installed capacity for production. The annual production quantity in million tonnes per annum (mtpa) is taken in to consideration. Productivity against the capacity reflects usage of resources. The benefit can be in many forms by way of reduction in fixed cost of production and increase in profitability and increase in customer base. Post merger change in productivity on the higher side is one of the hopes in mergers to reflect superior synergy and hence this parameter has been taken. ‘Operational rates’ pertains to the actual production of cement by a firm against the capacity it has to produce expressed in the form of percentage. 100% capacity utilization is considered excellent by the firms in the industry and is something that is aimed at. ‘Operational rates’ combines many factors such as management of factory, its machineries, raw material storage and

usage, logistics management and distribution ability of the factory to nearby places. Distribution to nearby areas helps faster supplies to customers; as such distribution helps faster truck rotation. Market share increase in the given region within a given radius from factory helps achieve higher productivity. With respect to storage, beyond a particular level cement cannot be stored in a factory and hence higher sales demand has direct effect on achieving productivity. When sales quantity come down the stock level at factory increase and after a level it cannot be stored which will reduce the production level or put pressure on prices to increase the sale. Keeping these in view this parameter is considered and the growth in post event mean over pre event mean can be considered as the efficiency of the company. The comparison has also been done between first year and third year performance post event. In analysis it has been noted if there had been increase in installed capacities after the event as then due to long gestation period of new factories the productivity can take time of 2 to 3 years to attain full capacity of production [1] [5].

4.2.3.2. Power consumption:

Electricity usage is quite heavy for cement factories and the new 'dry' process used for manufacturing consumes higher power than the earlier 'wet' process. The industry standard set for the process is 120 Kilowatt-hour (Kwh) per metric tonne (MT) of production. There is movement towards greater use of power plants as there is frequent power shortage experienced by factories. Keeping these in view the efficiency shown in reducing power consumption is taken as a parameter for analyzing the operational aspect. The reduction in usage between pre event and post event periods in units in Kwh / MT of production is considered in observing the efficiency in power usage. Since the power consumption range amongst the firms is 75-115 Kwh/MT and since most firms fall in the range of 80-110 Kwh/T the significance in change has been viewed in a structured manner. First the difference in usage pre event and post event has been studied. Then the reduction in usage between the first year and third year post event has been studied.

Analysis has been done by considering the fact that the lower value and upper value has limitations in power consumption and so a uniform percentage in reduction cannot be applied to judge all cases. For example if some firm is already efficient in power consumption of say 80 Kwh/MT, it cannot be expected to reduce further by 10%. At the same time if a firm is

consuming 115 Kwh/T then a 5-10% reduction is quite feasible. Considering these factors the significance has been judged as follows [19].

- ❖ If the pre event average is equal to or above 100 Kwh/MT then a reduction of 4Kwh/MT or more is a significant change. If the pre event average is the range of 90-100 Kwh/MT then a reduction of 2 Kwh/T or more is significant. If the pre event average is less than 90 Kwh/MT then any reduction below this is significant.

4.2.3.3. Consumption of coal:

Fuel consumption takes a huge part of the manufacturing cost of cement, as per CMA report. Hence reduction in usage of coal is considered very useful for controlling cost. Also government's quota of coal for cement industry is only 3.5% of the total Indian coal production which is less than the requirement of the industry. The balance need of coal needs to be imported which involves additional cost and depends on international price levels and demand. Considering the above factors this parameter is chosen for seeing any significance in change in the post event period over pre- event period. Here different companies give coal usage in different units like 'Tonne/tonne' of cement, 'Kilo calories/ kilogram of clinker', '%/ tonne of clinker'. The conversion of one unit to another involves additional data which is non accessible and keeping this in view the percentage change in usage is considered and not the units, to make the results comparable. The reduction in consumption reflected by negative values in change in percentage is considered good. Trend analysis has been done for any reduction in coal consumption post event to see the significance in change [19].

4.2.3.4. Market Share:

After merger since customer base is expected to increase, the aspect of increase or decrease in market share is studied. Since green field expansions involve time in years and high costs, firms take initiative for mergers in the industry. So increase in market share gives a good indication of progress.

This is worked out as production of both the purchasing and target companies put together divided by total industries production for the year [2] [19]. In case the company is an all India player then the market share can be taken at all India level. Otherwise it has been taken at

regional level. The MS has been studied for pre merger and post merger to see significance in change.

Market share forms an important parameter for cement firms as achievement in its growth in turn helps so many other divisions. Since transportation of a brand is not feasible for long distances if any new area at a distant place has to be entered by a firm it becomes imperative to start a plant in a nearby location. Due to this need and high gestation period of 2.5 to 3 three years for setting up a new cement plant acquisition of firm readily available in the new area sought after becomes a good option. Utilization of brand image of either the target firm or the acquiring firm or both helps to increase market share. Also expansion of a plant after acquiring it is easier than setting up a new plant. To increase market share on a regional basis and on an all India basis mergers and acquisitions becomes a good option. To achieve this objective has the market share increased post event in the region selected is seen for the samples.

One of the aspects considered in mergers and acquisitions is to use customer base of the two firms to synergic effect. Transportation is important in cement business and involves movement by ‘’truck or by both ‘truck and rail’. Rail movement alone is not possible as movement of cement has to be done to a railway yard and from the railway yard by trucks. Trucks are rented from the open market through contracted transporters by the manufacturing firms. In the open market, it is easier to get trucks for nearby areas than to areas at farther distances. Hence, by reducing the average distance used for transportation, the truck generation becomes easy and helps by way of better customer service, reduction in transportation cost and increase of market share. All these combined helps increase profit margins desired by shareholders. Since market share study has the limitations due to extraneous factors like other firms increasing their capacity more than a firm considered and since the market share does not change immediately and is a gradual process over a period, the increase in the average MS of pre event and post event are considered for significance in change.

4.2.3.5. Methodology:

For the sample of mergers taken up, operational performance has been taken for the period three years before an event and for three years after the event. Uniformly the year of merger had been accounted in the post event period for all the companies. For operational effectiveness due to

M&A the average of the three years values before event for each parameter is compared with the average of the three years values post event. The average values for the all the companies are taken before event and compared with the average values for the corresponding companies post event. On this the 'Paired't' test had been conducted to see the significance. First the pre event mean is compared with post event mean and analysis done. Then the first year performance post event has been compared with the third year to know the significance of synergy in operations.

The null hypothesis taken for impact of M&A on operational performance comparisons is as follows:

H1: There is no impact of M&A's on the operational performance parameters of the sample cases.

H2: There is significant impact of M&A on the operational performance parameters of the sample cases.

Since coal consumption is presented differently by the companies, the change factor is taken for comparison and trend analysis. In cement industry M&A's one of the motives is market share increase by way of adding capacities of production, this factor of comparison is made only between pre event and post event period and not with first year and third year post event.

4.2.4. Analysis of cases with composite scores:

Since the different factors are chosen based on the objectives how a firm shapes up with the combination of these factors has been studied. The cases have been taken up across 15 years with different macro economic conditions and hence this study can give a good reflection of the impact of M&A on the companies in the industry.

4.2.4.1. Methodology:

For the three years in the pre event and post event period scores are taken for the companies for every year. For getting the scores weightage is given to the parameters of the study and the total composite score had been arrived at. How the score had moved across the event periods reflects the composite improvement of the firms. In the post event period the good performance of the companies with composite scores reflects the positive effect of M&A on the companies.

The Hypothesis is as below.

Hypothesis: H1= There is no impact of M&A on the overall performance of the sample cases.

The alternate Hypothesis: H2= There is significant impact of M&A on the overall performance of the sample cases.

For giving scores to the parameters the following ‘weightages’ are given.

OPM- 15%, NPM-15%, ROCE-15%, D/E ratio-12.5%, Operational rates-12.5%, Power consumption-15%, Marker share- 15%.

OPM, NPM and ROCE have been taken and given weightage of 15% each as they relate to profitability directly which is of high importance to shareholders. At next level D/E ratios are given a weightage of 12.5%, as they give direction and level of risk which is also of high concern to the shareholders.

Power consumption levels are given a weightage of 15% considering its importance in our country apart from the fact that they help in reducing the cost and also indicate the efficiency levels of the factory, and helps avoid shut down for want of power. Market share which is one of the major objectives of investor has been given weightage of 15% since it involves lot of extraneous factors and still a company is expected to fight and come out triumphant. Also increase in ‘Market share’ has an effect in turn on the ‘Operational rates’. The ‘Operational rate’ has been given the weightage of 12.5% because of its importance in the industry. Most of the factories in India, 93%, use the latest ‘Dry Process’ for manufacturing and there is not much of technology transfer involved due to mergers. The improvement in post even period involves more of efficiency in quality management and systems development for better organizational coordination, and hence a weightage of 12.5% has been taken.

The coal consumption had not been taken as different companies use different units for calculation and the hence if scores had to be given with a fixed percentage rate then the scores of different firms cannot be compared with each other. In the case of EIL, which is not a cement manufacturing company and is cement based finished product manufacturer the weightages have been taken as OPM-25%, NPM-25%, ROCE-25%, D/E-10%, OR-15%. The aspect of power usage in finished product is not depicted in units in the industry reports and hence this was not

taken. The data on ‘Market share’ of EIL in the fiber cement business is not available for the entire event period and hence not taken.

While calculating the scores higher values of ‘OPM’, ‘NPM’, ‘ROCE’, ‘OR’, ‘MS’ are considered as improved performance levels. With respect to the parameters namely ‘D/E’ and ‘Power consumption’ lesser values are considered better.

Based on the values the firms have shown in the various study period’s, by applying these weightages, the composite score is obtained for the firms. When these scores are presented how the firms performed on the whole during the period has be seen using‘t-test’ analysis. The comparison of pre event mean score with post event mean score and then by the first year score post event with the third year score post event the significance in change in performance has been studied.

4.2.5. Understanding the importance of logistics with survey:

While preparing the event module based on the study the aspect of logistics has been included. To understand the importance of logistics in the cement business the urban and rural areas of Chennai of Tamil Nadu was chosen and sample selected at random. Survey method was used to know the important aspects viewed by customers. The following steps were adopted.

1. 28 Cement sales counters and 37 direct cement consuming customers were selected across the area to have representation for all sectors of the urban and rural areas.
2. A questionnaire was prepared (Annexure IIa &IIb) and survey conducted to get feedback from the customers.
3. The feedback were tabulated to consolidate the views
4. The feedback was given to the management of Ultratech Cement Ltd in Jan 2010.

This was chosen to understand the importance of logistics so that when analyzing a target for fitness in a pre acquisition analysis its service of customers can be checked from the respective market to know their standard of performance in supply service. In cement business standard of supply service can have a role in increasing the sale of a brand as supply of high volume, heavy and perishable commodity can have lot of limitations to overcome.

Based on the methodology the analysis has been done taking data from annual reports of the respective companies and other sources like CRISIL, CMA, BSE, CMIE, SEBI. The analysis and interpretation has been done in the following chapter.

Chapter-V

‘Shares Reaction’ Analysis

For analysis first non cement sector samples had been taken and the share price reactions and returns had been studied. Then the analysis had been done for the cement sector in India. In all the cases the companies listed in BSE had been taken to have an ‘apple-to-apple’ comparison.

5.1. Market Model:

In the event study methodology observed the ‘Market model’ had been used and the regression equation used is as given below.

$$R_{it} = \alpha_i + (\beta_i \times R_{mt})$$

In the equation, ‘R_{it}’ and ‘R_{mt}’ are period ‘t’ returns on security ‘i’ and market portfolio respectively. ‘α_i’ is the ‘Y’ intercept and ‘β_i’ is the slope of the equation. The main objective is to see the reactions of the share price and its effect on the return with respect to the M&A event of companies.

Table 5.1: Details of the non cement sector cases taken for the study:

S. No	Acquiring Firm	Target Firm	Event day	Industry
1	ADITYA BIRLA NUVO LTD	APOLLO SINDHOORI CAPITAL INVESTMENTS LTD	1/9/2008	Financial
2	APAR INDUSTRIES LIMITED	UNIFLEX CABLES LIMITED	13/02/2008	Manufacturing
3	BAJAJ HINDUSTHAN LTD	BAJAJ HINDUSTHAN SUGAR AND INDUSTRIES LIMITED	20/12/2007	Manufacturing

Table 5.1 (Contd.):

S. No	Acquiring Firm	Target Firm	Event day	Industry
4	CANARA BANK LTD	CANFIN HOMES LTD	27/08/2007	Financial
5	CONSOLIDATED SECURTIES LIMITED	MOVING PICTURE COMPANY (INDIA) LIMITED	20/07/2007	Services
6	CONSOLIDATED SECURITIES LTD.	ASIAN OILFIELD SERVICES LTD	5/12/2006	Services
7	DABUR INDIA LIMITED	FEM CARE PHARMA LIMITED	26/11/2008	Pharmaceuticals
8	EMAMI LTD.	ZANDU PHARMACEUTICAL WORKS LTD.	2/6/2008	Pharmaceuticals
9	HB STOCK HOLDINGS LTD	DCM SHRIRAM IND. LTD	19/11/2007	Services
10	IDEA CELLULAR LTD	SPICE COMMUNICATIONS LTD.	30/06/2008	Services
11	INDUSTRIAL INVESTMENT TRUST LIMITED	INDO GREEN PROJECTS LTD.	5/5/2008	Services
12	IPCA LABORATORIES LIMITED	TONIRA PHARMA LIMITED	2/11/2007	Pharmaceuticals
13	IVRCL INFRASTRUCTURES & PROJECTS LTD	HINDUSTAN DORR-OLIVER LTD	27/04/2005	Services
14	KALPATARU POWER TRANSMISSION LTD	JMC PROJECTS (INDIA) LTD.	1/10/2004	Manufacturing
15	MAHINDRA AND MAHINDRA LTD,	SWARAJ ENGINES LTD	12/3/2007	Manufacturing
16	RANBAXY LABORATORIES LIMITED	ZENOTECH LABORATORIES LIMITED	5/10/2007	Pharmaceuticals
17	RELIANCE CAPITAL LTD	TV TODAY NETWORK LTD	18/04/2007	Services
18	RSWM LTD.	CHESLIND TEXTILES LTD.	22/03/2007	Manufacturing
19	SPENTEX INDUSTRIES LTD	AMIT SPINNING INDUSTRIES LTD	27/02/2006	Manufacturing
20	TELEVISION EIGHTEEN INDIA LTD	INFOMEDIA INDIA LTD	12/12/2007	Services
21	THE WEST COAST PAPER MILLS LTD,	RAMA NEWSPRINT & PAPERS LTD	8/9/2003	Manufacturing

Source: BSE [77]

The details of cement industry cases which had been listed in the BSE and taken for the study are as given below.

Table 5.2: Details of cement events taken for analysis:

S. No	Acquiring/Merging firm	Target/merging firm	Event announcement day
1	GIL	L&T (takeover)	14.05.2004
2	ACC (merger)	Bargarh cements ltd (merger)	08.09.2005
3	ACC (merger)	Damodhar cements ltd (merger)	28.11.2005
4	ACC	Bargarh cements ltd (takeover)	22.12.2003
5	Holcim ltd	ACC (takeover)	09.03.2005
6	Holcim ltd	ACL (takeover)	27.03.2006
7	ACL	ACRL (merger)	01.06.2004
8	ACC	EIL (takeover)	12.02.2002
9	Dalmia cement (Mehalaya) ltd (Dalmia Group) (merger)	OCL India ltd (merger)	28.09.2007
10	Heidelberg cements	Mysore cements ltd (takeover)	06.09.2006
11	GIL	SDCCL (takeover)	10.07.1998
12	ICL(merger)	RCL (merger)	26.02.1998
13	L&T	NCL (takeover)	11.01.1999
14	Cimpor cemtos de Portugal (takeover)	SDCCL	30.09.2008
15	ACL	ACEL (takeover)	15.02.2001

Source: BSE, [9] [77] [87] [88] [89] [90] [91] [92]

5.2. Analysis using 'Market model' for non cement sector:

Across a period of three years from 2004-05 to 2007-08 twenty one cases of mergers have been taken at random across industries. The cases of both acquiring and target firms being listed in BSE are only considered. The cases of firms across industries had been taken to find the general pattern, if any, of returns which can later be compared with the returns of merging or acquiring firms in the Indian cement industry.

The details of acquiring company, the respective target company, the event day of announcement of merger or takeover, the concerned industry and year are given in the table 5.1.

For the respective cases, applying 'Market Model' the results has been studied. First each case is taken up as pair and then a consolidated study made. For each case the event day is noted and from that three immediate trading days prior and later has been taken up for studying the return. This has been considered to be 'Event window'. Immediately before the event window, a period of ten trading days has been taken up to find out the 'α' and 'ß' values [15]. These are substituted for the 'Event window' period and the expected returns are calculated. From the actual returns for each day the expected returns is deducted to find out the abnormal returns. These abnormal returns are added to get the cumulative abnormal returns at the end of the 'Event window' period. In the calculation the 'Market returns' are independent variable and 'Stock returns' are dependent variable.

1. Acquiring Firm: 'ADITYA BIRLA NUVO LTD'
   Target Firm: 'APOLLO SINDHOORI CAPITAL INVESTMENTS LTD'

For the acquiring firm the expected returns, abnormal returns and cumulative abnormal returns are as follows.

Table 5.3 Acquirer: Aditya Birla Nuvo Ltd.

Date from Event day	Date	Nuvo Stock	Sensex	Market Returns (Independent variable) %	Stocks returns (Dependent variable) %	Expected return %	Abnormal return %	CAR %
-14	11 August 2008	1399.11	15503.92					
-13	12 August 2008	1376.99	15212.13	-1.88%	-1.58%	-1.63%	0.05%	
-12	13 August 2008	1359.71	15093.12	-0.78%	-1.25%	-0.80%	-0.46%	
-11	14 August 2008	1328.60	14724.18	-2.44%	-2.29%	-2.06%	-0.23%	
-10	18 August 2008	1361.00	14645.66	-0.53%	2.44%	-0.61%	3.05%	
-9	19 August 2008	1327.45	14543.73	-0.70%	-2.47%	-0.73%	-1.73%	
-8	20 August 2008	1321.01	14678.23	0.92%	-0.49%	0.50%	-0.98%	
-7	21 August 2008	1281.52	14243.73	-2.96%	-2.99%	-2.45%	-0.54%	
-6	22 August 2008	1267.89	14401.49	1.11%	-1.06%	0.64%	-1.70%	
-5	25 August 2008	1294.29	14450.35	0.34%	2.08%	0.05%	2.03%	
-4	26 August 2008	1300.38	14482.22	0.22%	0.47%	-0.04%	0.51%	
-3	27 August 2008	1309.83	14296.79	-1.28%	0.73%	-1.18%	1.90%	1.90%
-2	28 August 2008	1310.53	14048.34	-1.74%	0.05%	-1.52%	1.58%	3.48%
-1	29 August 2008	1331.27	14564.53	3.67%	1.58%	2.58%	-1.00%	2.48%
0	1 September 2008	1261.14	14498.51	-0.45%	-5.27%	-0.55%	-4.72%	-2.24%
1	2 September 2008	1276.63	15049.86	3.80%	1.23%	2.68%	-1.45%	-3.69%
2	4 September 2008	1283.15	14899.10	-1.00%	0.51%	-0.96%	1.48%	-2.22%
3	5 September 2008	1200.99	14483.83	-2.79%	-6.40%	-2.32%	-4.08%	-6.30%

[93] [94]

The ‘Y’ intercept ‘α’ found to be -0.002 and the slope of the regression equation ‘ß’ found as 0.758.

For the corresponding target firm the expected returns, abnormal returns and cumulative abnormal returns are as follows.

Table 5.4 Target: Apollo Sindhoori Capital Investments Ltd.

Date from Event day	Date	Apollo Sindhoori Stock prices Rs	Sensex Rs	Market Returns (Independent variable) %	Stocks returns (Dependent variable) %	Expected return %	Abnormal return %	CAR %
-14	11 August 2008	48.91	15503.92					
-13	12 August 2008	48.68	15212.13	-1.88%	-0.47%	-0.42%	-0.05%	
-12	13 August 2008	49.02	15093.12	-0.78%	0.70%	0.59%	0.11%	
-11	14 August 2008	49.34	14724.18	-2.44%	0.65%	-0.93%	1.59%	
-10	18 August 2008	49.76	14645.66	-0.53%	0.85%	0.82%	0.03%	
-9	19 August 2008	48.24	14543.73	-0.70%	-3.05%	0.67%	-3.72%	
-8	20 August 2008	50.42	14678.23	0.92%	4.52%	2.15%	2.37%	
-7	21 August 2008	49.52	14243.73	-2.96%	-1.79%	-1.41%	-0.38%	
-6	22 August 2008	49.33	14401.49	1.11%	-0.38%	2.32%	-2.70%	
-5	25 August 2008	51.63	14450.35	0.34%	4.66%	1.62%	3.05%	
-4	26 August 2008	52.26	14482.22	0.22%	1.22%	1.51%	-0.29%	
-3	27 August 2008	52.84	14296.79	-1.28%	1.11%	0.13%	0.98%	0.98%
-2	28 August 2008	57.27	14048.34	-1.74%	8.38%	-0.29%	8.67%	9.65%
-1	29 August 2008	55.98	14564.53	3.67%	-2.25%	4.67%	-6.92%	2.73%
0	1 September 2008	55.97	14498.51	-0.45%	-0.02%	0.89%	-0.91%	1.82%
1	2 September 2008	56.16	15049.86	3.80%	0.34%	4.79%	-4.45%	-2.63%
2	4 September 2008	56.73	14899.10	-1.00%	1.01%	0.39%	0.63%	-2.00%
3	5 September 2008	57.63	14483.83	-2.79%	1.59%	-1.25%	2.83%	0.83%

[93] [95]

The ‘Y’ intercept ‘α’ found to be 0.013 and the slope of the regression equation ‘ß’ found as 0.915.

On the event day there is fall in CAR for both acquirer and target. We see that in this case for the target firm there is rise in CAR after the event day and two days prior to the event day there was a steep rise and then fall on the event day. For the acquirer from two days prior to event day there is fall right up to three days after the event. Thus at the time of the deal shareholders believe the target firm is more benefited from the deal.

2. Acquiring Firm: ‘APAR INDUSTRIES LIMITED’; Target Firm: ‘UNIFLEX CABLES LIMITED’

Table 5.5: Acquirer: Apar Industries ltd.

Date from Event day	Date	Apar Stock price	Sensex	Market Returns (Independent variable) %	Stocks returns (Dependent variable) %	Expected return %	Abnormal return %	CAR %
-14	24 January 2008	303.79	17221.74					
-13	25 January 2008	295.43	18361.66	6.62%	-2.75%	-2.06%	-0.69%	
-12	28 January 2008	303.03	18152.78	-1.14%	2.57%	-0.62%	3.19%	
-11	29 January 2008	293.39	18091.94	-0.34%	-3.18%	-0.77%	-2.41%	
-10	30 January 2008	289.98	17758.64	-1.84%	-1.16%	-0.49%	-0.68%	
-9	31 January 2008	274.98	17648.71	-0.62%	-5.17%	-0.71%	-4.46%	
-8	1 February 2008	271.98	18242.58	3.36%	-1.09%	-1.46%	0.37%	
-7	4 February 2008	275.97	18660.32	2.29%	1.47%	-1.26%	2.72%	
-6	5 February 2008	275.66	18663.16	0.02%	-0.11%	-0.83%	0.72%	
-5	6 February 2008	275.12	18139.49	-2.81%	-0.20%	-0.31%	0.11%	
-4	7 February 2008	277.67	17526.93	-3.38%	0.93%	-0.20%	1.13%	
-3	8 February 2008	261.86	17464.89	-0.35%	-5.69%	-0.76%	-4.93%	-4.93%
-2	11 February 2008	249.44	16630.91	-4.78%	-4.74%	0.06%	-4.80%	-9.73%
-1	12 February 2008	259.47	16608.01	-0.14%	4.02%	-0.80%	4.82%	-4.91%
0	13 February 2008	250.81	16949.14	2.05%	-3.34%	-1.21%	-2.12%	-7.03%
1	14 February 2008	260.77	17766.63	4.82%	3.97%	-1.73%	5.70%	-1.33%
2	15 February 2008	255.6	18115.25	1.96%	-1.98%	-1.20%	-0.79%	-2.12%
3	18 February 2008	241.12	18048.05	-0.37%	-5.67%	-0.76%	-4.90%	-7.03%

[93] [96]

The ‘Y’ intercept ‘α’ found to be -0.008 and the slope of the regression equation ‘ß’ found as -0.186 for the acquiring firm.

Table 5.6: Target: Uniflex Cables Ltd.

Date from Event day	Date	Uniflex Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	24 January 2008	40.97	17221.74					
-13	25 January 2008	39.56	18361.66	6.62%	-3.44%	-2.00%	-1.44%	
-12	28 January 2008	40.5	18152.78	-1.14%	2.38%	1.62%	0.76%	
-11	29 January 2008	42.63	18091.94	-0.34%	5.26%	1.24%	4.02%	
-10	30 January 2008	42.12	17758.64	-1.84%	-1.20%	1.95%	-3.14%	
-9	31 January 2008	41.95	17648.71	-0.62%	-0.40%	1.37%	-1.78%	
-8	1 February 2008	40.54	18242.58	3.36%	-3.36%	-0.48%	-2.88%	
-7	4 February 2008	41.83	18660.32	2.29%	3.18%	0.02%	3.17%	
-6	5 February 2008	43.88	18663.16	0.02%	4.90%	1.08%	3.82%	
-5	6 February 2008	43.91	18139.49	-2.81%	0.07%	2.40%	-2.33%	
-4	7 February 2008	44.99	17526.93	-3.38%	2.46%	2.66%	-0.20%	
-3	8 February 2008	42.75	17464.89	-0.35%	-4.98%	1.25%	-6.23%	-6.23%
-2	11 February 2008	41.08	16630.91	-4.78%	-3.91%	3.31%	-7.22%	-13.45%
-1	12 February 2008	43.11	16608.01	-0.14%	4.94%	1.15%	3.79%	-9.66%
0	13 February 2008	42.42	16949.14	2.05%	-1.60%	0.13%	-1.73%	-11.39%
1	14 February 2008	43.01	17766.63	4.82%	1.39%	-1.17%	2.56%	-8.83%
2	15 February 2008	42.78	18115.25	1.96%	-0.53%	0.17%	-0.70%	-9.54%
3	18 February 2008	43.55	18048.05	-0.37%	1.80%	1.26%	0.54%	-8.99%

[93] [97]

The ‘Y’ intercept ‘α’ found to be 0.108 and the slope of the regression equation ‘ß’ found as -0.466 for the target firm.

In this case both acquirer and target firms have negative CAR’s, both before and after the event. For acquirer the fall is seen to be steeper during two days before event and recover a bit one day before the event. For target also the CAR has declined post event.

3. Acquiring Firm: ‘BAJAJ HINDUSTHAN LTD’

Target Firm: ‘BAJAJ HINDUSTHAN SUGAR AND INDUSTRIES LIMITED’

Table 5.7: Acquirer: Bajaj Hindustan Ltd.

Date from Event day	Date	BH Stock price	Sensex	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	30 November 2007	208.19	19363.19					
-13	3 December 2007	220.08	19603.41	1.24%	5.71%	2.91%	2.80%	
-12	4 December 2007	222.17	19529.50	-0.38%	0.95%	2.08%	-1.13%	
-11	5 December 2007	218.26	19738.07	1.07%	-1.76%	2.82%	-4.58%	
-10	6 December 2007	221.81	19795.87	0.29%	1.63%	2.43%	-0.80%	
-9	7 December 2007	231.12	19966.00	0.86%	4.20%	2.72%	1.48%	
-8	10 December 2007	236.91	19930.68	-0.18%	2.51%	2.18%	0.32%	
-7	11 December 2007	242.64	20290.89	1.81%	2.42%	3.20%	-0.78%	
-6	12 December 2007	246.04	20375.87	0.42%	1.40%	2.49%	-1.09%	
-5	13 December 2007	241.63	20104.39	-1.33%	-1.79%	1.59%	-3.38%	
-4	14 December 2007	263.99	20030.83	-0.37%	9.25%	2.09%	7.17%	
-3	17 December 2007	268.88	19261.35	-3.84%	1.85%	0.30%	1.55%	1.55%
-2	18 December 2007	264.2	19079.64	-0.94%	-1.74%	1.79%	-3.53%	-1.98%
-1	19 December 2007	283.72	19091.96	0.06%	7.39%	2.31%	5.08%	3.10%
0	20 December 2007	277.7	19162.57	0.37%	-2.12%	2.46%	-4.59%	-1.49%
1	24 December 2007	281.79	19854.12	3.61%	1.47%	4.13%	-2.65%	-4.14%
2	26 December 2007	296.42	20192.52	1.70%	5.19%	3.15%	2.04%	-2.10%
3	27 December 2007	301.62	20216.72	0.12%	1.75%	2.34%	-0.58%	-2.68%

[93] [98]

The 'Y' intercept 'α' found to be 0.022 and the slope of the regression equation 'ß' found as 0.513 for the acquiring firm.

Table 5.8: Target: Bajaj Hindustan Sugar and Industries Ltd.

Date from Event day	Date	BH Sugar Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	30 November 2007	39.22	19363.19					
-13	3 December 2007	41.63	19603.41	1.24%	6.14%	0.45%	5.70%	
-12	4 December 2007	43.7	19529.50	-0.38%	4.97%	2.01%	2.97%	
-11	5 December 2007	45.02	19738.07	1.07%	3.02%	0.61%	2.41%	
-10	6 December 2007	44.5	19795.87	0.29%	-1.16%	1.36%	-2.52%	
-9	7 December 2007	44.18	19966.00	0.86%	-0.72%	0.81%	-1.53%	
-8	10 December 2007	43.49	19930.68	-0.18%	-1.56%	1.81%	-3.38%	
-7	11 December 2007	42.11	20290.89	1.81%	-3.17%	-0.10%	-3.07%	
-6	12 December 2007	42	20375.87	0.42%	-0.26%	1.24%	-1.50%	
-5	13 December 2007	43.47	20104.39	-1.33%	3.50%	2.93%	0.57%	
-4	14 December 2007	44.49	20030.83	-0.37%	2.35%	2.00%	0.35%	
-3	17 December 2007	44.57	19261.35	-3.84%	0.18%	5.35%	-5.17%	-5.17%
-2	18 December 2007	42.26	19079.64	-0.94%	-5.18%	2.55%	-7.74%	-12.91%
-1	19 December 2007	44.25	19091.96	0.06%	4.71%	1.58%	3.13%	-9.78%
0	20 December 2007	45.55	19162.57	0.37%	2.94%	1.29%	1.65%	-8.13%
1	24 December 2007	47.8	19854.12	3.61%	4.94%	-1.84%	6.78%	-1.35%
2	26 December 2007	48.19	20192.52	1.70%	0.82%	0.00%	0.82%	-0.53%
3	27 December 2007	47.61	20216.72	0.12%	-1.20%	1.53%	-2.73%	-3.26%

[93] [99]

The ‘Y’ intercept ‘α’ found to be 0.016 and the slope of the regression equation ‘ß’ found as -0.965 for the target firm.

Here for Acquiring firm the CAR falls on second day before event, rises one day before and falls on the event day. After the event it continues to fall. For the target firm from two days prior to event it continues to rise up to two days after and falls on third day. Abnormal returns seen as positive after the event for the target firm but the earlier fall had been steep due to which CAR is negative.

4. Acquiring firm: 'CANARA BANK LTD.'

Target firm: 'CANFIN HOMES LTD.'

Table 5.9: Acquirer: Canara Bank Ltd.

Date from Event day	Date	CB Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	6 August 2007	254.1	14903.03					
-13	7 August 2007	267.1	14932.77	0.20%	5.12%	0.42%	4.69%	
-12	8 August 2007	276.06	15307.98	2.51%	3.35%	3.20%	0.15%	
-11	9 August 2007	281.38	15100.15	-1.36%	1.93%	-1.45%	3.37%	
-10	10 August 2007	267.2	14868.25	-1.54%	-5.04%	-1.66%	-3.38%	
-9	13 August 2007	267.9	15017.21	1.00%	0.26%	1.39%	-1.13%	
-8	14 August 2007	264.35	15000.91	-0.11%	-1.33%	0.05%	-1.38%	
-7	16 August 2007	252.39	14358.21	-4.28%	-4.52%	-4.96%	0.44%	
-6	17 August 2007	245.84	14141.52	-1.51%	-2.60%	-1.63%	-0.97%	
-5	20 August 2007	249.35	14427.55	2.02%	1.43%	2.61%	-1.19%	
-4	21 August 2007	239.18	13989.11	-3.04%	-4.08%	-3.47%	-0.61%	
-3	22 August 2007	230.54	14248.66	1.86%	-3.61%	2.41%	-6.03%	-6.03%
-2	23 August 2007	231.2	14163.98	-0.59%	0.29%	-0.53%	0.82%	-5.21%
-1	24 August 2007	225.54	14424.87	1.84%	-2.45%	2.40%	-4.85%	-10.06%
0	27 August 2007	232.01	14842.38	2.89%	2.87%	3.66%	-0.79%	-10.85%
1	28 August 2007	237.67	14919.19	0.52%	2.44%	0.81%	1.63%	-9.22%
2	29 August 2007	234.63	14993.04	0.50%	-1.28%	0.78%	-2.06%	-11.27%
3	30 August 2007	241.53	15121.74	0.86%	2.94%	1.22%	1.72%	-9.55%

[93] [100]

The 'Y' intercept 'α' found to be 0.001 and the slope of the regression equation 'ß' found as 1.201 for the acquiring firm.

Table 5.10: Target: Canfin Homes Ltd.

Date from Event day	Date	CH Stock prices Rs	Sensex Rs	Market Returns (Independent variable) %	Stocks returns (Dependent variable) %	Expected return %	Abnormal return %	CAR %
-14	6 August 2007	55.46	14903.03					
-13	7 August 2007	55.31	14932.77	0.20%	-0.27%	-0.49%	0.22%	
-12	8 August 2007	56.29	15307.98	2.51%	1.77%	1.07%	0.70%	
-11	9 August 2007	55.62	15100.15	-1.36%	-1.19%	-1.54%	0.35%	
-10	10 August 2007	55.66	14868.25	-1.54%	0.07%	-1.66%	1.73%	
-9	13 August 2007	55.55	15017.21	1.00%	-0.20%	0.05%	-0.25%	
-8	14 August 2007	55.19	15000.91	-0.11%	-0.65%	-0.70%	0.05%	
-7	16 August 2007	54.44	14358.21	-4.28%	-1.36%	-3.52%	2.16%	
-6	17 August 2007	53.9	14141.52	-1.51%	-0.99%	-1.64%	0.65%	
-5	20 August 2007	53.74	14427.55	2.02%	-0.30%	0.74%	-1.04%	
-4	21 August 2007	49.84	13989.11	-3.04%	-7.26%	-2.68%	-4.58%	
-3	22 August 2007	50.04	14248.66	1.86%	0.40%	0.63%	-0.23%	-0.23%
-2	23 August 2007	49.7	14163.98	-0.59%	-0.68%	-1.03%	0.35%	0.12%
-1	24 August 2007	50.11	14424.87	1.84%	0.82%	0.62%	0.21%	0.33%
0	27 August 2007	56.19	14842.38	2.89%	12.13%	1.33%	10.80%	11.13%
1	28 August 2007	58.14	14919.19	0.52%	3.47%	-0.28%	3.75%	14.88%
2	29 August 2007	57.77	14993.04	0.50%	-0.64%	-0.29%	-0.35%	14.53%
3	30 August 2007	57.92	15121.74	0.86%	0.26%	-0.05%	0.31%	14.84%

[93] [101]

The 'Y' intercept 'α' found to be -0.006 and the slope of the regression equation 'ß' found as 0.675 for the target firm.

In this financial industry case the acquirer is seen to have negative CAR before and after the event. From two days before the event there is continuous decrease. In the case of the target firm from a near '0' value before the event CAR continues to rise from one day before the event and after the event. This shows for the target firm the shareholders perceive the deal is beneficial.

5. Acquiring firm: 'CONSOLIDATED SECURTIES LIMITED'

Target Firm: 'MOVING PICTURE COMPANY (INDIA) LIMITED'

Table 5.11: Acquirer: Consolidated Securities Ltd.

Date from Event day	Date	Con.Sec Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	2 July 2007	113.41	14664.26					
-13	3 July 2007	116.1	14806.51	0.97%	2.37%	3.44%	-1.06%	
-12	4 July 2007	118.36	14880.24	0.50%	1.95%	3.06%	-1.12%	
-11	5 July 2007	120.01	14861.89	-0.12%	1.39%	2.58%	-1.18%	
-10	6 July 2007	125.45	14964.12	0.69%	4.53%	3.21%	1.32%	
-9	9 July 2007	128.96	15045.73	0.55%	2.80%	3.10%	-0.30%	
-8	10 July 2007	136.67	15009.88	-0.24%	5.98%	2.48%	3.49%	
-7	11 July 2007	142.05	14910.62	-0.66%	3.94%	2.15%	1.79%	
-6	12 July 2007	150.82	15092.04	1.22%	6.17%	3.63%	2.54%	
-5	13 July 2007	157.87	15272.72	1.20%	4.67%	3.62%	1.06%	
-4	16 July 2007	152.09	15311.22	0.25%	-3.66%	2.87%	-6.53%	
-3	17 July 2007	147.87	15289.82	-0.14%	-2.77%	2.56%	-5.34%	-5.34%
-2	18 July 2007	150.77	15301.17	0.07%	1.96%	2.73%	-0.77%	-6.11%
-1	19 July 2007	159.09	15550.13	1.63%	5.52%	3.95%	1.56%	-4.54%
0	20 July 2007	167.27	15565.55	0.10%	5.14%	2.75%	2.39%	-2.15%
1	23 July 2007	173.65	15732.20	1.07%	3.81%	3.52%	0.30%	-1.85%
2	24 July 2007	177.24	15794.92	0.40%	2.07%	2.99%	-0.92%	-2.77%
3	25 July 2007	183.98	15699.33	-0.61%	3.80%	2.20%	1.61%	-1.16%

[93] [102]

The ‘Y’ intercept ‘α’ found to be 0.0267 and the slope of the regression equation ‘ß’ found as 0.787 for the acquiring firm.

Table 5.12: Target: Moving Pictures:

Date from Event day	Date	Mov.pi Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	2 July 2007	9.17	14664.26					
-13	3 July 2007	9.3	14806.51	0.97%	1.42%	2.02%	-0.60%	
-12	4 July 2007	9.4	14880.24	0.50%	1.08%	3.07%	-2.00%	
-11	5 July 2007	9.64	14861.89	-0.12%	2.55%	4.46%	-1.90%	
-10	6 July 2007	9.28	14964.12	0.69%	-3.73%	2.65%	-6.38%	
-9	9 July 2007	9.25	15045.73	0.55%	-0.32%	2.97%	-3.29%	
-8	10 July 2007	10.24	15009.88	-0.24%	10.70%	4.71%	5.99%	
-7	11 July 2007	10.8	14910.62	-0.66%	5.47%	5.65%	-0.19%	
-6	12 July 2007	11.35	15092.04	1.22%	5.09%	1.47%	3.62%	
-5	13 July 2007	11.91	15272.72	1.20%	4.93%	1.52%	3.42%	
-4	16 July 2007	12.5	15311.22	0.25%	4.95%	3.62%	1.33%	
-3	17 July 2007	13.12	15289.82	-0.14%	4.96%	4.49%	0.47%	0.47%
-2	18 July 2007	13.77	15301.17	0.07%	4.95%	4.02%	0.94%	1.40%
-1	19 July 2007	14.45	15550.13	1.63%	4.94%	0.56%	4.38%	5.79%
0	20 July 2007	15.17	15565.55	0.10%	4.98%	3.96%	1.02%	6.81%
1	23 July 2007	15.92	15732.20	1.07%	4.94%	1.80%	3.15%	9.95%
2	24 July 2007	16.71	15794.92	0.40%	4.96%	3.29%	1.67%	11.62%
3	25 July 2007	17.54	15699.33	-0.61%	4.97%	5.53%	-0.56%	11.06%

[93] [103]

The ‘Y’ intercept ‘α’ found to be 0.041 and the slope of the regression equation ‘ß’ found as -2.22 for the target firm.

In this case the CAR is seen to increase from two days prior to the event day for both acquirer and target. The share market reaction reflects welcoming the merger. Even with this for the acquirer the CAR is negative. For the target the CAR shows good positive growth from three days prior to event day.

6. Acquiring firm: 'CONSOLIDATED SECURITIES LTD'.

Target firm: 'ASIAN OILFIELD SERVICES LTD'

Table 5.13: Acquirer: Consolidated Securities:

Date from Event day	Date	Con.sec Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	14 November 2006	79.8	13425.50					
-13	15 November 2006	81.35	13469.37	0.33%	1.94%	1.97%	-0.03%	
-12	16 November 2006	82.95	13505.89	0.27%	1.97%	1.97%	0.00%	
-11	17 November 2006	84.6	13429.48	-0.57%	1.99%	1.98%	0.01%	
-10	20 November 2006	86.25	13430.71	0.01%	1.95%	1.97%	-0.02%	
-9	21 November 2006	87.95	13616.77	1.39%	1.97%	1.96%	0.01%	
-8	22 November 2006	89.7	13706.53	0.66%	1.99%	1.97%	0.02%	
-7	23 November 2006	91.45	13680.83	-0.19%	1.95%	1.97%	-0.02%	
-6	24 November 2006	93.25	13703.33	0.16%	1.97%	1.97%	0.00%	
-5	27 November 2006	95.1	13773.59	0.51%	1.98%	1.97%	0.02%	
-4	28 November 2006	97	13601.95	-1.25%	2.00%	1.98%	0.02%	
-3	29 November 2006	97.48	13616.73	0.11%	0.49%	1.97%	-1.48%	-1.48%
-2	30 November 2006	96.45	13696.31	0.58%	-1.06%	1.97%	-3.02%	-4.50%
-1	4 December 2006	94.55	13874.33	1.30%	-1.97%	1.96%	-3.93%	-8.43%
0	5 December 2006	92.7	13937.65	0.46%	-1.96%	1.97%	-3.93%	-12.36%
1	6 December 2006	90.85	13949.00	0.08%	-2.00%	1.97%	-3.97%	-16.33%
2	7 December 2006	89.05	13972.03	0.17%	-1.98%	1.97%	-3.95%	-20.28%
3	8 December 2006	87.3	13799.49	-1.23%	-1.97%	1.98%	-3.95%	-24.22%

[93] [104]

The ‘Y’ intercept ‘α’ found to be 0.019 and the slope of the regression equation ‘ß’ found as -0.007 for acquiring firm.

Table 5.14: Target: Asian Oil:

Date from Event day	Date	Asian oil Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	14 November 2006	17.27	13425.50					
-13	15 November 2006	17.13	13469.37	0.33%	-0.81%	3.83%	-4.64%	
-12	16 November 2006	17.01	13505.89	0.27%	-0.70%	3.67%	-4.37%	
-11	17 November 2006	16.73	13429.48	-0.57%	-1.65%	1.28%	-2.93%	
-10	20 November 2006	17.13	13430.71	0.01%	2.39%	2.92%	-0.53%	
-9	21 November 2006	17.7	13616.77	1.39%	3.33%	6.85%	-3.53%	
-8	22 November 2006	18.58	13706.53	0.66%	4.97%	4.78%	0.19%	
-7	23 November 2006	19.85	13680.83	-0.19%	6.84%	2.36%	4.48%	
-6	24 November 2006	22.3	13703.33	0.16%	12.34%	3.37%	8.98%	
-5	27 November 2006	24.3	13773.59	0.51%	8.97%	4.36%	4.61%	
-4	28 November 2006	23.59	13601.95	-1.25%	-2.92%	-0.67%	-2.26%	
-3	29 November 2006	23.57	13616.73	0.11%	-0.08%	3.21%	-3.29%	-3.29%
-2	30 November 2006	25.48	13696.31	0.58%	8.10%	4.57%	3.54%	0.25%
-1	4 December 2006	27.88	13874.33	1.30%	9.42%	6.61%	2.81%	3.06%
0	5 December 2006	26.38	13937.65	0.46%	-5.38%	4.20%	-9.58%	-6.53%
1	6 December 2006	25.16	13949.00	0.08%	-4.62%	3.13%	-7.75%	-14.28%
2	7 December 2006	25.59	13972.03	0.17%	1.71%	3.37%	-1.66%	-15.94%
3	8 December 2006	25.91	13799.49	-1.23%	1.25%	-0.63%	1.88%	-14.05%

[93] [105]

The ‘Y’ intercept ‘α’ found to be 0.028 and the slope of the regression equation ‘ß’ found as 2.85 for the target firm.

In this case the market does not accept the takeover straightaway and is reflected by way of both acquirer and target firms showing negative CAR right from three days before the event day. In the target firm the CAR increased slightly the day before the event and after that declined. In both the cases the CAR is negative on the third day post event.

7. Acquiring firm: ‘DABUR INDIA LIMITED’

Target firm: ‘FEM CARE PHARMA LIMITED’

Table 5.15: Acquirer: Dabur India:

Date from Event day	Date	DI Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	5 November 2008	88.51	10120.01					
-13	6 November 2008	86.92	9734.22	-3.81%	-1.80%	-2.20%	0.40%	
-12	7 November 2008	85.78	9964.29	2.36%	-1.31%	-0.76%	-0.55%	
-11	10 November 2008	86.56	10536.16	5.74%	0.91%	0.03%	0.88%	
-10	11 November 2008	86.2	9839.69	-6.61%	-0.42%	-2.85%	2.44%	
-9	12 November 2008	85.89	9536.33	-3.08%	-0.36%	-2.03%	1.67%	
-8	14 November 2008	85.15	9385.42	-1.58%	-0.86%	-1.68%	0.82%	
-7	17 November 2008	83.33	9291.01	-1.01%	-2.14%	-1.55%	-0.59%	
-6	18 November 2008	79.98	8937.20	-3.81%	-4.02%	-2.20%	-1.82%	
-5	19 November 2008	78.95	8773.78	-1.83%	-1.29%	-1.74%	0.45%	
-4	20 November 2008	74.32	8451.01	-3.68%	-5.86%	-2.17%	-3.70%	
-3	21 November 2008	74.51	8915.21	5.49%	0.26%	-0.03%	0.29%	0.29%
-2	24 November 2008	75.03	8903.12	-0.14%	0.70%	-1.34%	2.04%	2.33%
-1	25 November 2008	79.47	8695.53	-2.33%	5.92%	-1.85%	7.77%	10.10%
0	26 November 2008	78.48	9026.72	3.81%	-1.25%	-0.42%	-0.82%	9.28%
1	28 November 2008	80.26	9092.72	0.73%	2.27%	-1.14%	3.41%	12.69%
2	1 December 2008	84.08	8839.87	-2.78%	4.76%	-1.96%	6.72%	19.41%
3	2 December 2008	81.43	8739.24	-1.14%	-3.15%	-1.58%	-1.58%	17.83%

[93] [106]

The ‘Y’ intercept ‘α’ found to be -0.013 and the slope of the regression equation ‘ß’ found as 0.232 for the acquirer.

Table 5.16: Target: Fem Care:

Date from Event day	Date	FC Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	5 November 2008	509.86	10120.01					
-13	6 November 2008	499.29	9734.22	-3.81%	-2.07%	0.73%	-2.80%	
-12	7 November 2008	518.24	9964.29	2.36%	3.80%	5.23%	-1.43%	
-11	10 November 2008	555.16	10536.16	5.74%	7.12%	7.69%	-0.57%	
-10	11 November 2008	542.53	9839.69	-6.61%	-2.28%	-1.31%	-0.96%	
-9	12 November 2008	557.16	9536.33	-3.08%	2.70%	1.26%	1.44%	
-8	14 November 2008	573.38	9385.42	-1.58%	2.91%	2.35%	0.56%	
-7	17 November 2008	609.75	9291.01	-1.01%	6.34%	2.77%	3.57%	
-6	18 November 2008	620.14	8937.20	-3.81%	1.70%	0.73%	0.97%	
-5	19 November 2008	631.43	8773.78	-1.83%	1.82%	2.17%	-0.35%	
-4	20 November 2008	633.9	8451.01	-3.68%	0.39%	0.82%	-0.43%	
-3	21 November 2008	658.47	8915.21	5.49%	3.88%	7.51%	-3.63%	-3.63%
-2	24 November 2008	684.33	8903.12	-0.14%	3.93%	3.41%	0.52%	-3.11%
-1	25 November 2008	682.57	8695.53	-2.33%	-0.26%	1.81%	-2.06%	-5.18%
0	26 November 2008	686.9	9026.72	3.81%	0.63%	6.28%	-5.65%	-10.82%
1	28 November 2008	685.19	9092.72	0.73%	-0.25%	4.04%	-4.29%	-15.11%
2	1 December 2008	676.7	8839.87	-2.78%	-1.24%	1.48%	-2.72%	-17.83%
3	2 December 2008	670.8	8739.24	-1.14%	-0.87%	2.68%	-3.55%	-21.38%

[93] [107]

The ‘Y’ intercept ‘α’ found to be 0.035 and the slope of the regression equation ‘ß’ found as 0.729 for the target.

In this pharmaceutical case the acquirer is well received for the event while the target is perceived to be risky. The shareholders of acquirers look at the takeover case positively for the firm while for the target there is steep decline for a negative CAR of over 20%.

8. Acquiring Firm: ‘EMAMI LTD’.

Target firm: ‘ZANDU PHARMACEUTICAL WORKS LTD’.

Table 5.17: Acquirer: Emami Ltd:

Date from Event day	Date	Emami Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	12 May 2008	281.32	16860.90					
-13	13 May 2008	278.63	16752.86	-0.64%	-0.96%	-0.31%	-0.65%	
-12	14 May 2008	274.63	16978.35	1.35%	-1.44%	0.46%	-1.89%	
-11	15 May 2008	277.88	17353.54	2.21%	1.18%	0.79%	0.39%	
-10	16 May 2008	280.39	17434.94	0.47%	0.90%	0.12%	0.78%	
-9	20 May 2008	282.08	17230.18	-1.17%	0.60%	-0.51%	1.11%	
-8	21 May 2008	283.48	17243.16	0.08%	0.50%	-0.03%	0.53%	
-7	22 May 2008	280.98	16907.11	-1.95%	-0.88%	-0.81%	-0.07%	
-6	23 May 2008	275.26	16649.64	-1.52%	-2.04%	-0.64%	-1.39%	
-5	26 May 2008	272.33	16348.50	-1.81%	-1.06%	-0.75%	-0.31%	
-4	27 May 2008	275.8	16275.59	-0.45%	1.27%	-0.23%	1.50%	
-3	28 May 2008	296.17	16525.37	1.53%	7.39%	0.53%	6.86%	6.86%
-2	29 May 2008	302.71	16316.26	-1.27%	2.21%	-0.54%	2.75%	9.61%
-1	30 May 2008	304.58	16415.57	0.61%	0.62%	0.17%	0.44%	10.05%
0	2 June 2008	310.58	16063.18	-2.15%	1.97%	-0.88%	2.85%	12.91%
1	3 June 2008	289.57	15962.56	-0.63%	-6.76%	-0.30%	-6.47%	6.44%
2	4 June 2008	286.48	15514.79	-2.81%	-1.07%	-1.14%	0.07%	6.51%
3	5 June 2008	276.67	15769.72	1.64%	-3.42%	0.57%	-4.00%	2.51%

[93] [108]

The ‘Y’ intercept ‘α’ found to be -0.0005 and the slope of the regression equation ‘ß’ found as 0.383 for the acquirer.

Table 5.18: Target: Zandhu Pharma:

Date from Event day	Date	Zandu Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	12 May 2008	6,848.83	16860.90					
-13	13 May 2008	6,850.04	16752.86	-0.64%	0.02%	1.82%	-1.80%	
-12	14 May 2008	6,872.79	16978.35	1.35%	0.33%	1.67%	-1.34%	
-11	15 May 2008	6,862.10	17353.54	2.21%	-0.16%	1.61%	-1.76%	
-10	16 May 2008	6,850.32	17434.94	0.47%	-0.17%	1.74%	-1.91%	
-9	20 May 2008	6,856.67	17230.18	-1.17%	0.09%	1.86%	-1.76%	
-8	21 May 2008	6,873.38	17243.16	0.08%	0.24%	1.76%	-1.52%	
-7	22 May 2008	6,852.83	16907.11	-1.95%	-0.30%	1.91%	-2.21%	
-6	23 May 2008	6,849.91	16649.64	-1.52%	-0.04%	1.88%	-1.92%	
-5	26 May 2008	6,849.92	16348.50	-1.81%	0.00%	1.90%	-1.90%	
-4	27 May 2008	8,078.18	16275.59	-0.45%	17.93%	1.80%	16.13%	
-3	28 May 2008	7,295.17	16525.37	1.53%	-9.69%	1.66%	-11.35%	-11.35%
-2	29 May 2008	7,249.43	16316.26	-1.27%	-0.63%	1.86%	-2.49%	-13.84%
-1	30 May 2008	7,910.52	16415.57	0.61%	9.12%	1.73%	7.39%	-6.45%
0	2 June 2008	9,298.19	16063.18	-2.15%	17.54%	1.93%	15.62%	9.17%
1	3 June 2008	9,481.01	15962.56	-0.63%	1.97%	1.82%	0.15%	9.32%
2	4 June 2008	9,837.49	15514.79	-2.81%	3.76%	1.97%	1.79%	11.11%
3	5 June 2008	10,265.20	15769.72	1.64%	4.35%	1.65%	2.70%	13.80%

[93] [109]

The ‘Y’ intercept ‘α’ found to be 0.0176 and the slope of the regression equation ‘ß’ found as -0.073 for the target.

In this pharmaceuticals industry case of takeover the acquirer is seen to have declining CAR after on the event day seeing a hike in CAR. But throughout the CAR remains positive. In the case of target firm the CAR turns around from negative to positive post event with the increase starting from two days before the event.

9. Acquiring Firm: ‘HB STOCK HOLDINGS LTD’

Target firm: ‘DCM SHRIRAM INDUSTRIES LTD’

Table 5.19: Acquirer: HB Stock:

Date from Event day	Date	HB Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	30 October 2007	48.01	19783					
-13	31 October 2007	48.26	19837	0.27%	0.52%	-0.72%	1.24%	
-12	1 November 2007	47.74	19724	-0.57%	-1.08%	-0.26%	-0.82%	
-11	02 November	45.54	19976.23	1.28%	-4.61%	-1.26%	-3.35%	
-10	05 November	46.1	19590.78	-1.93%	1.23%	0.48%	0.75%	
-9	06 November	46.49	19400.67	-0.97%	0.85%	-0.04%	0.89%	
-8	07 November	47.04	19289.83	-0.57%	1.18%	-0.26%	1.44%	
-7	08 November	46.33	19058.93	-1.20%	-1.51%	0.08%	-1.59%	
-6	09 November	46.17	18907.60	-0.79%	-0.35%	-0.14%	-0.21%	
-5	12 November	45.78	18737.27	-0.90%	-0.84%	-0.08%	-0.77%	
-4	13 November	46.23	19035.48	1.59%	0.98%	-1.43%	2.42%	
-3	14 November	47.29	19929.06	4.69%	2.29%	-3.12%	5.41%	5.41%
-2	15 November	49.96	19784.89	-0.72%	5.65%	-0.18%	5.82%	11.23%
-1	16 November	57.27	19698.36	-0.44%	14.63%	-0.33%	14.96%	26.19%
0	19 November	63.07	19633.36	-0.33%	10.13%	-0.39%	10.52%	36.71%
1	20 November	66.59	19280.80	-1.80%	5.58%	0.41%	5.17%	41.88%
2	21 November	68.26	18602.62	-3.52%	2.51%	1.34%	1.17%	43.05%
3	22 November	60.72	18526.32	-0.41%	-11.05%	-0.35%	-10.70%	32.35%

[93] [110]

The ‘Y’ intercept ‘α’ found to be -0.005 and the slope of the regression equation ‘ß’ found as -0.543 for the acquirer.

Table 5.20: Target: DCM Shriram:

Date relative to Event day	Date	DCM Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	30 October 2007	59.69	19783					
-13	31 October 2007	57.12	19837	0.27%	-4.31%	0.62%	-4.92%	
-12	1 November 2007	60.03	19724	-0.57%	5.09%	1.37%	3.73%	
-11	02 November	62.6	19976.23	1.28%	4.28%	-0.28%	4.56%	
-10	05 November	66.19	19590.78	-1.93%	5.73%	2.58%	3.16%	
-9	06 November	64.1	19400.67	-0.97%	-3.16%	1.72%	-4.88%	
-8	07 November	64.81	19289.83	-0.57%	1.11%	1.37%	-0.26%	
-7	08 November	68.91	19058.93	-1.20%	6.33%	1.93%	4.40%	
-6	09 November	69.61	18907.60	-0.79%	1.02%	1.57%	-0.55%	
-5	12 November	67.42	18737.27	-0.90%	-3.15%	1.66%	-4.81%	
-4	13 November	66.76	19035.48	1.59%	-0.98%	-0.56%	-0.42%	
-3	14 November	64.86	19929.06	4.69%	-2.85%	-3.33%	0.48%	0.48%
-2	15 November	65.75	19784.89	-0.72%	1.37%	1.50%	-0.13%	0.35%
-1	16 November	67.74	19698.36	-0.44%	3.03%	1.25%	1.78%	2.12%
0	19 November	72.3	19633.36	-0.33%	6.73%	1.15%	5.58%	7.70%
1	20 November	76.07	19280.80	-1.80%	5.21%	2.46%	2.75%	10.46%
2	21 November	79.95	18602.62	-3.52%	5.10%	3.99%	1.11%	11.56%
3	22 November	83.9	18526.32	-0.41%	4.94%	1.23%	3.72%	15.28%

[93] [111]

The 'Y' intercept 'α' found to be 0.008 and the slope of the regression equation 'ß' found as -0.891 for the target.

The market is seen to receive both the cases positively with CAR increasing for both acquirer and target firms. Two days after the event for acquirer there is slight fall but the overall CAR is high at over 30 percent. For the target firm the trend is positive throughout.

10. Acquiring firm: ‘IDEA CELLULAR LTD’.

Target Firm: ‘SPICE COMMUNICATIONS LTD’.

Table 5.21: Acquirer: Idea cellular:

Date from Event day	Date	Idea Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	10 June 2008	99.91	14889.25					
-13	11 June 2008	99.34	15185.32	1.99%	-0.57%	1.43%	-2.00%	
-12	12 June 2008	103.85	15250.20	0.43%	4.54%	0.64%	3.90%	
-11	13 June 2008	109.38	15189.62	-0.40%	5.32%	0.22%	5.11%	
-10	16 June 2008	109.74	15395.82	1.36%	0.33%	1.11%	-0.78%	
-9	17 June 2008	109.21	15696.90	1.96%	-0.48%	1.41%	-1.90%	
-8	18 June 2008	110.15	15422.31	-1.75%	0.86%	-0.47%	1.33%	
-7	19 June 2008	108.29	15087.99	-2.17%	-1.69%	-0.68%	-1.01%	
-6	20 June 2008	106.03	14571.29	-3.42%	-2.09%	-1.32%	-0.77%	
-5	23 June 2008	102.74	14293.32	-1.91%	-3.10%	-0.55%	-2.55%	
-4	24 June 2008	101.11	14106.58	-1.31%	-1.59%	-0.24%	-1.34%	
-3	25 June 2008	102.55	14220.07	0.80%	1.42%	0.83%	0.60%	0.60%
-2	26 June 2008	100.87	14421.82	1.42%	-1.64%	1.14%	-2.78%	-2.18%
-1	27 June 2008	97.47	13802.22	-4.30%	-3.37%	-1.76%	-1.61%	-3.79%
0	30 June 2008	95.02	13461.60	-2.47%	-2.51%	-0.83%	-1.68%	-5.47%
1	1 July 2008	89.58	12961.68	-3.71%	-5.73%	-1.47%	-4.26%	-9.73%
2	2 July 2008	89.49	13664.62	5.42%	-0.10%	3.17%	-3.27%	-13.00%
3	3 July 2008	89.24	13094.11	-4.18%	-0.28%	-1.70%	1.42%	-11.58%

[93] [112]

The ‘Y” intercept, ‘α' found as 0.00419 and slope ‘ß’ as 0.507 for the acquirer.

For the target firm the expected returns, abnormal returns and cumulative abnormal returns are as follows.

Table 5.22: Target: Spice communications:

Date from Event day	Date	Spice Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	10 June 2008	56.62	14889.25					
-13	11 June 2008	56.93	15185.32	1.99%	0.55%	1.56%	-1.01%	
-12	12 June 2008	59.85	15250.20	0.43%	5.13%	0.72%	4.41%	
-11	13 June 2008	62.56	15189.62	-0.40%	4.53%	0.28%	4.25%	
-10	16 June 2008	64.31	15395.82	1.36%	2.80%	1.22%	1.57%	
-9	17 June 2008	62.58	15696.90	1.96%	-2.69%	1.54%	-4.23%	
-8	18 June 2008	63.91	15422.31	-1.75%	2.13%	-0.44%	2.57%	
-7	19 June 2008	63.39	15087.99	-2.17%	-0.81%	-0.67%	-0.15%	
-6	20 June 2008	62.16	14571.29	-3.42%	-1.94%	-1.34%	-0.60%	
-5	23 June 2008	60.59	14293.32	-1.91%	-2.53%	-0.53%	-2.00%	
-4	24 June 2008	57.55	14106.58	-1.31%	-5.02%	-0.21%	-4.81%	
-3	25 June 2008	69.57	14220.07	0.80%	20.89%	0.93%	19.96%	19.96%
-2	26 June 2008	72.22	14421.82	1.42%	3.81%	1.26%	2.55%	22.51%
-1	27 June 2008	71.99	13802.22	-4.30%	-0.32%	-1.81%	1.49%	24.01%
0	30 June 2008	72.49	13461.60	-2.47%	0.69%	-0.83%	1.52%	25.53%
1	1 July 2008	72.6	12961.68	-3.71%	0.15%	-1.50%	1.65%	27.18%
2	2 July 2008	72.67	13664.62	5.42%	0.10%	3.40%	-3.31%	23.87%
3	3 July 2008	72.52	13094.11	-4.18%	-0.21%	-1.75%	1.54%	25.41%

[93] [113]

The ‘Y” intercept, ‘α' value was 0.0049 and slope ‘ß’ found as 0.536 for the target firm.

It can be seen that for the acquirer there is steep fall in CAR from three days prior to the event. The CAR turns negative from two days prior to event for acquirer. For the target the CAR is positive throughout and shows increasing trend. The market feels the deal is good for the target.

11. Acquiring firm: 'INDUSTRIAL INVESTMENT TRUST LIMITED'.

Target firm: 'INDO GREEN PROJECTS LTD'.

Table 5.23: Acquirer: Industrial investments:

Date from Event day	Date	Ind.Inv Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	09 April 2008	70.98	15790.51					
-13	10 April 2008	77.44	15695.10	-0.60%	9.10%	3.94%	5.17%	
-12	11 April 2008	80.34	15807.64	0.72%	3.74%	2.00%	1.74%	
-11	15 April 2008	83.44	16153.66	2.19%	3.86%	-0.15%	4.01%	
-10	17 April 2008	81.32	16481.20	2.03%	-2.54%	0.09%	-2.63%	
-9	21 April 2008	84.83	16739.33	1.57%	4.32%	0.76%	3.55%	
-8	22 April 2008	91.28	16783.87	0.27%	7.60%	2.66%	4.94%	
-7	23 April 2008	96.04	16698.04	-0.51%	5.21%	3.80%	1.41%	
-6	24 April 2008	89.56	16721.08	0.14%	-6.75%	2.85%	-9.60%	
-5	25 April 2008	85.64	17125.98	2.42%	-4.38%	-0.49%	-3.89%	
-4	28 April 2008	85.03	17015.96	-0.64%	-0.71%	3.99%	-4.70%	
-3	29 April 2008	87.12	17378.46	2.13%	2.46%	-0.06%	2.52%	2.52%
-2	30 April 2008	82.93	17287.31	-0.52%	-4.81%	3.82%	-8.63%	-6.11%
-1	2 May 2008	81.2	17600.12	1.81%	-2.09%	0.41%	-2.49%	-8.60%
0	5 May 2008	78.75	17490.90	-0.62%	-3.02%	3.96%	-6.98%	-15.58%
1	6 May 2008	76.37	17373.01	-0.67%	-3.02%	4.04%	-7.06%	-22.64%
2	7 May 2008	86.02	17339.31	-0.19%	12.64%	3.34%	9.30%	-13.34%
3	8 May 2008	81.03	17080.65	-1.49%	-5.80%	5.23%	-11.03%	-24.37%

[93] [114]

The ‘Y’ intercept value ‘α' was 0.0305 and the slope ‘ß’ found to be -1.46 for acquirer.

For the target firm the expected returns, abnormal returns and cumulative abnormal returns are as follows.

Table 5.24: Target: Indo green:

Date from Event day	Date	Indo.Gr Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	09 April 2008	27.6	15790.51					
-13	10 April 2008	28.95	15695.10	-0.60%	4.89%	4.52%	0.37%	
-12	11 April 2008	27.68	15807.64	0.72%	-4.39%	2.93%	-7.31%	
-11	15 April 2008	26.35	16153.66	2.19%	-4.80%	1.15%	-5.95%	
-10	17 April 2008	27.24	16481.20	2.03%	3.38%	1.34%	2.04%	
-9	21 April 2008	28.46	16739.33	1.57%	4.48%	1.90%	2.58%	
-8	22 April 2008	30	16783.87	0.27%	5.41%	3.47%	1.94%	
-7	23 April 2008	31.5	16698.04	-0.51%	5.00%	4.41%	0.59%	
-6	24 April 2008	33.03	16721.08	0.14%	4.86%	3.63%	1.23%	
-5	25 April 2008	34.7	17125.98	2.42%	5.06%	0.86%	4.19%	
-4	28 April 2008	36.4	17015.96	-0.64%	4.90%	4.57%	0.33%	
-3	29 April 2008	38	17378.46	2.13%	4.40%	1.22%	3.18%	3.18%
-2	30 April 2008	40.1	17287.31	-0.52%	5.53%	4.43%	1.10%	4.28%
-1	2 May 2008	42.09	17600.12	1.81%	4.96%	1.60%	3.36%	7.64%
0	5 May 2008	44.2	17490.90	-0.62%	5.01%	4.54%	0.47%	8.11%
1	6 May 2008	46.36	17373.01	-0.67%	4.89%	4.61%	0.28%	8.38%
2	7 May 2008	47.5	17339.31	-0.19%	2.46%	4.03%	-1.57%	6.82%
3	8 May 2008	44.9	17080.65	-1.49%	-5.47%	5.60%	-11.07%	-4.26%

[93] [115]

The ‘Y’ intercept value ‘α' was 0.0379 and the slope ‘ß’ found to be -1.209 for the target.

It is seen for the acquirer the CAR reduces from third day prior to event. For the target the event was well received but some news later on immediately post merger had caused reduction in CAR from second day post announcement. Till then the CAR for target was seen to be positive.

12. Acquiring firm: 'IPCA LABORATORIES LIMITED'.

Target firm: 'TONIRA PHARMA LIMITED'.

Table 5.25: Acquirer: IPCA labs:

Date from Event day	Date	IPCA Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	15 October 2007	639.27	19058.67					
-13	16 October 2007	638.98	19051.86	-0.04%	-0.05%	-0.36%	0.32%	
-12	17 October 2007	609.14	18715.82	-1.76%	-4.67%	-1.16%	-3.51%	
-11	18 October 2007	612.69	17998.39	-3.83%	0.58%	-2.12%	2.70%	
-10	19 October 2007	603.9	17559.98	-2.44%	-1.43%	-1.47%	0.04%	
-9	22 October 2007	594.64	17613.99	0.31%	-1.53%	-0.20%	-1.33%	
-8	23 October 2007	605.84	18492.84	4.99%	1.88%	1.97%	-0.08%	
-7	24 October 2007	607.76	18512.91	0.11%	0.32%	-0.29%	0.61%	
-6	25 October 2007	612.08	18770.89	1.39%	0.71%	0.30%	0.41%	
-5	26 October 2007	611.34	19243.17	2.52%	-0.12%	0.82%	-0.94%	
-4	29 October 2007	630.97	19977.67	3.82%	3.21%	1.42%	1.79%	
-3	30 October 2007	639.89	19783.51	-0.97%	1.41%	-0.79%	2.21%	2.21%
-2	31 October 2007	639.56	19837.99	0.28%	-0.05%	-0.22%	0.17%	2.37%
-1	1 November 2007	659.75	19724.35	-0.57%	3.16%	-0.61%	3.77%	6.14%
0	2 November 2007	652.64	19976.23	1.28%	-1.08%	0.25%	-1.32%	4.82%
1	5 November 2007	684.07	19590.78	-1.93%	4.82%	-1.24%	6.05%	10.87%
2	6 November 2007	693.22	19400.67	-0.97%	1.34%	-0.79%	2.13%	13.00%
3	7 November 2007	666.67	19289.83	-0.57%	-3.83%	-0.61%	-3.22%	9.78%

[93] [116]

The 'Y' intercept value 'α' was -0.0034 and the slope 'ß' found to be 0.463 for acquirer.

For the target firm the expected returns, abnormal returns and cumulative abnormal returns are as follows.

Table 5.26: Target: Tonira pharma:

Date from Event day	**Date**	**Tonira Stock prices Rs**	**Sensex Rs**	**Market Returns %**	**Stocks returns %**	**Expected return %**	**Abnormal return %**	**CAR %**
-14	15 October 2007	20.05	19058.67					
-13	16 October 2007	19.72	19051.86	-0.04%	-1.65%	2.51%	-4.15%	
-12	17 October 2007	19.6	18715.82	-1.76%	-0.61%	1.34%	-1.94%	
-11	18 October 2007	19.69	17998.39	-3.83%	0.46%	-0.07%	0.53%	
-10	19 October 2007	19.74	17559.98	-2.44%	0.25%	0.88%	-0.63%	
-9	22 October 2007	19.75	17613.99	0.31%	0.05%	2.74%	-2.69%	
-8	23 October 2007	21.47	18492.84	4.99%	8.71%	5.91%	2.80%	
-7	24 October 2007	23.69	18512.91	0.11%	10.34%	2.60%	7.74%	
-6	25 October 2007	26.04	18770.89	1.39%	9.92%	3.48%	6.44%	
-5	26 October 2007	26.17	19243.17	2.52%	0.50%	4.24%	-3.74%	
-4	29 October 2007	26.37	19977.67	3.82%	0.76%	5.12%	-4.35%	
-3	30 October 2007	26.67	19783.51	-0.97%	1.14%	1.87%	-0.73%	-0.73%
-2	31 October 2007	26.94	19837.99	0.28%	1.01%	2.72%	-1.71%	-2.44%
-1	1 November 2007	27.22	19724.35	-0.57%	1.04%	2.14%	-1.10%	-3.54%
0	2 November 2007	28.4	19976.23	1.28%	4.34%	3.40%	0.94%	-2.60%
1	5 November 2007	29.8	19590.78	-1.93%	4.93%	1.22%	3.71%	1.10%
2	6 November 2007	31.25	19400.67	-0.97%	4.87%	1.87%	2.99%	4.10%
3	7 November 2007	32.8	19289.83	-0.57%	4.96%	2.14%	2.82%	6.91%

[93] [117]

The ‘Y’ intercept value ‘α' was .0253 and the slope ‘ß’ found to be 0.677 for the target.

It can be seen that acquirer and target firms had increase in CAR. The acquirer had slight fluctuation prior to event but post event rose for first two days. The target firm CAR seen to be lower that acquirer but seen to move in one direction.

13. Acquiring firm: ‘IVRCL INFRASTRUCTURES & PROJECTS LTD’.

Target firm: ‘HINDUSTAN DORR-OLIVER LTD’.

Table 5.27: Acquirer: IVRCL infrastructures:

Date from Event day	Date	IVRCL Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	6 April 2005	476.93	6606.41					
-13	7 April 2005	450.52	6545.64	-0.92%	-5.54%	-1.41%	-4.12%	
-12	8 April 2005	438.62	6479.54	-1.01%	-2.64%	-1.50%	-1.14%	
-11	11 April 2005	416.22	6397.52	-1.27%	-5.11%	-1.76%	-3.34%	
-10	12 April 2005	426.65	6464.61	1.05%	2.51%	0.57%	1.93%	
-9	13 April 2005	420.49	6467.92	0.05%	-1.44%	-0.43%	-1.01%	
-8	15 April 2005	416.1	6248.34	-3.39%	-1.04%	-3.91%	2.87%	
-7	18 April 2005	411.24	6156.78	-1.47%	-1.17%	-1.96%	0.80%	
-6	19 April 2005	419.67	6134.86	-0.36%	2.05%	-0.84%	2.89%	
-5	20 April 2005	424.12	6243.74	1.77%	1.06%	1.30%	-0.24%	
-4	21 April 2005	431.66	6299.20	0.89%	1.78%	0.41%	1.37%	
-3	22 April 2005	426.35	6346.57	0.75%	-1.23%	0.27%	-1.50%	-1.50%
-2	25 April 2005	429.26	6377.85	0.49%	0.68%	0.01%	0.67%	-0.83%
-1	26 April 2005	422.09	6339.98	-0.59%	-1.67%	-1.08%	-0.59%	-1.42%
0	27 April 2005	420.35	6278.50	-0.97%	-0.41%	-1.46%	1.05%	-0.37%
1	28 April 2005	418.06	6284.20	0.09%	-0.54%	-0.39%	-0.15%	-0.52%
2	29 April 2005	416.92	6154.44	-2.06%	-0.27%	-2.57%	2.30%	1.78%
3	2 May 2005	429.6	6195.15	0.66%	3.04%	0.18%	2.86%	4.64%

[93] [118]

The ‘Y’ intercept value ‘α' was -0.004 and the slope ‘ß’ found to be 1.008 for the acquirer.

For the target firm the expected returns, abnormal returns and cumulative abnormal returns are as follows.

Table 5.28: Target: Hindustan Dorr:

Date from Event day	Date	Hin.D Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns	Expected return %	Abnormal return %	CAR %
-14	6 April 2005	117.37	6606.41					
-13	7 April 2005	123.25	6545.64	-0.92%	5.01%	1.88%	3.13%	
-12	8 April 2005	121.19	6479.54	-1.01%	-1.67%	1.91%	-3.58%	
-11	11 April 2005	118.91	6397.52	-1.27%	-1.88%	1.99%	-3.87%	
-10	12 April 2005	119.7	6464.61	1.05%	0.66%	1.25%	-0.58%	
-9	13 April 2005	118.43	6467.92	0.05%	-1.06%	1.57%	-2.63%	
-8	15 April 2005	119.97	6248.34	-3.39%	1.30%	2.67%	-1.37%	
-7	18 April 2005	127.04	6156.78	-1.47%	5.89%	2.05%	3.84%	
-6	19 April 2005	135.92	6134.86	-0.36%	6.99%	1.70%	5.29%	
-5	20 April 2005	134.5	6243.74	1.77%	-1.04%	1.01%	-2.06%	
-4	21 April 2005	138.7	6299.20	0.89%	3.12%	1.30%	1.82%	
-3	22 April 2005	144.91	6346.57	0.75%	4.48%	1.34%	3.14%	3.14%
-2	25 April 2005	145.62	6377.85	0.49%	0.49%	1.42%	-0.93%	2.20%
-1	26 April 2005	145.74	6339.98	-0.59%	0.08%	1.77%	-1.69%	0.51%
0	27 April 2005	149.02	6278.50	-0.97%	2.25%	1.89%	0.36%	0.87%
1	28 April 2005	160.15	6284.20	0.09%	7.47%	1.55%	5.91%	6.78%
2	29 April 2005	166.41	6154.44	-2.06%	3.91%	2.25%	1.66%	8.44%
3	2 May 2005	155.35	6195.15	0.66%	-6.65%	1.37%	-8.02%	0.43%

[93] [119]

The ‘Y’ intercept value ‘α' was .015 and the slope ‘ß’ found to be -0.32 for the target.

It can be seen for the acquirer the CAR turns positive from being negative prior to event and rises steeply post event. For the target the CAR is positive throughout but frequently goes up and down reflecting shareholders apprehension or lack of clarity over the event.

14. Acquiring firm: 'KALPATARU POWER TRANSMISSION LTD'.

Target firm: 'JMC PROJECTS (INDIA) LTD'.

Table 5.29: Acquirer: Kalpataru power:

Date from Event day	Date	Kal Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	13 September 2004	88	5397.46					
-13	14 September 2004	87.68	5428.77	0.58%	-0.36%	1.67%	-2.03%	
-12	15 September 2004	88.59	5420.09	-0.16%	1.04%	0.30%	0.74%	
-11	16 September 2004	91.67	5477.68	1.06%	3.48%	2.57%	0.91%	
-10	17 September 2004	98.33	5561.15	1.52%	7.27%	3.42%	3.84%	
-9	20 September 2004	97.57	5545.82	-0.28%	-0.77%	0.08%	-0.86%	
-8	21 September 2004	97.55	5605.93	1.08%	-0.02%	2.61%	-2.63%	
-7	22 September 2004	98.28	5616.87	0.20%	0.75%	0.96%	-0.21%	
-6	23 September 2004	98.76	5539.48	-1.38%	0.49%	-1.96%	2.45%	
-5	24 September 2004	97.18	5527.75	-0.21%	-1.60%	0.20%	-1.80%	
-4	27 September 2004	96.83	5511.81	-0.29%	-0.36%	0.06%	-0.42%	
-3	28 September 2004	97.78	5462.61	-0.89%	0.98%	-1.06%	2.04%	2.04%
-2	29 September 2004	97.45	5527.56	1.19%	-0.34%	2.80%	-3.14%	-1.09%
-1	30 September 2004	101.43	5583.61	1.01%	4.08%	2.48%	1.61%	0.51%
0	1 October 2004	108.17	5675.54	1.65%	6.64%	3.65%	3.00%	3.51%
1	4 October 2004	117.05	5766.30	1.60%	8.21%	3.56%	4.65%	8.16%
2	5 October 2004	124.18	5758.67	-0.13%	6.09%	0.35%	5.74%	13.90%
3	6 October 2004	118.46	5713.75	-0.78%	-4.61%	-0.85%	-3.75%	10.15%

[93] [120]

The ‘Y’ intercept value ‘α' was .005 and the slope ‘ß’ found to be 1.85 for the acquirer.

For the target firm the expected returns, abnormal returns and cumulative abnormal returns were found as follows.

Table 5.30: Target: JMC projects:

Date from Event day	Date	JMC Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	13 September 2004	28.33	5397.46					
-13	14 September 2004	26.56	5428.77	0.58%	-6.25%	3.16%	-9.41%	
-12	15 September 2004	25.86	5420.09	-0.16%	-2.64%	6.76%	-9.40%	
-11	16 September 2004	26.41	5477.68	1.06%	2.13%	0.82%	1.31%	
-10	17 September 2004	26.41	5561.15	1.52%	0.00%	-1.43%	1.43%	
-9	20 September 2004	26.74	5545.82	-0.28%	1.25%	7.33%	-6.08%	
-8	21 September 2004	29.56	5605.93	1.08%	10.55%	0.71%	9.83%	
-7	22 September 2004	33.61	5616.87	0.20%	13.70%	5.04%	8.66%	
-6	23 September 2004	41.81	5539.48	-1.38%	24.40%	12.69%	11.71%	
-5	24 September 2004	45.76	5527.75	-0.21%	9.45%	7.01%	2.43%	
-4	27 September 2004	44.34	5511.81	-0.29%	-3.10%	7.39%	-10.49%	
-3	28 September 2004	41.18	5462.61	-0.89%	-7.13%	10.33%	-17.45%	-17.45%
-2	29 September 2004	40.93	5527.56	1.19%	-0.61%	0.20%	-0.81%	-18.26%
-1	30 September 2004	42.2	5583.61	1.01%	3.10%	1.05%	2.05%	-16.21%
0	1 October 2004	43.77	5675.54	1.65%	3.72%	-2.02%	5.74%	-10.47%
1	4 October 2004	43.63	5766.30	1.60%	-0.32%	-1.79%	1.47%	-9.00%
2	5 October 2004	40.36	5758.67	-0.13%	-7.49%	6.63%	-14.12%	-23.12%
3	6 October 2004	39.84	5713.75	-0.78%	-1.29%	9.78%	-11.07%	-34.19%

[93] [121]

The ‘Y’ intercept value ‘α' was .059 and the slope ‘ß’ found to be -4.86 for the target.

For the acquirer on the second day prior to event day CAR declined and then increased till the second day after the event. It is also positive post event day. Market after initial decline has viewed takeover positively for acquirer. For the target firm there was some sign of recovery towards positive return around the event day but after the first day post event there is steep decline. For the acquirer also after the second day post event there is decline.

15. Acquiring firm: 'MAHINDRA AND MAHINDRA LTD'.

Target firm: 'SWARAJ ENGINES LTD'.

Table 5.31: Acquirer: Mahindra and Mahindra:

Date from Event day	Date	M&M Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	20 February 2007	881.35	14253.38					
-13	21 February 2007	894.37	14188.49	-0.46%	1.48%	-1.73%	3.21%	
-12	22 February 2007	900.28	14021.31	-1.18%	0.66%	-2.07%	2.73%	
-11	23 February 2007	865.78	13632.53	-2.77%	-3.83%	-2.81%	-1.02%	
-10	26 February 2007	840.01	13649.52	0.12%	-2.98%	-1.47%	-1.51%	
-9	27 February 2007	856.45	13478.83	-1.25%	1.96%	-2.10%	4.06%	
-8	28 February 2007	824.71	12938.09	-4.01%	-3.71%	-3.38%	-0.32%	
-7	1 March 2007	802.89	13159.55	1.71%	-2.65%	-0.73%	-1.92%	
-6	2 March 2007	794.22	12886.13	-2.08%	-1.08%	-2.49%	1.41%	
-5	5 March 2007	732.35	12415.04	-3.66%	-7.79%	-3.22%	-4.57%	
-4	6 March 2007	713.79	12697.09	2.27%	-2.53%	-0.47%	-2.06%	
-3	7 March 2007	730.93	12579.75	-0.92%	2.40%	-1.95%	4.35%	4.35%
-2	8 March 2007	761.38	13049.35	3.73%	4.17%	0.21%	3.96%	8.31%
-1	9 March 2007	753.95	12884.99	-1.26%	-0.98%	-2.11%	1.13%	9.44%
0	12 March 2007	737.21	12902.63	0.14%	-2.22%	-1.46%	-0.76%	8.68%
1	13 March 2007	752.66	12982.98	0.62%	2.10%	-1.23%	3.33%	12.01%
2	14 March 2007	744.22	12529.62	-3.49%	-1.12%	-3.14%	2.02%	14.03%
3	15 March 2007	748.95	12543.85	0.11%	0.64%	-1.47%	2.11%	16.14%

[93] [122]

The ‘Y’ intercept value ‘α' was -0.015 and the slope ‘ß’ found to be 0.463 for the acquirer.

For the target firm the expected returns, abnormal returns and cumulative abnormal returns are as follows.

Table 5.32: Target: Swaraj engines:

Date from Event day	Date	Swaraj Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	20 February 2007	163.69	14253.38					
-13	21 February 2007	160.77	14188.49	-0.46%	-1.78%	-0.95%	-0.84%	
-12	22 February 2007	164.67	14021.31	-1.18%	2.43%	-1.14%	3.56%	
-11	23 February 2007	160.3	13632.53	-2.77%	-2.65%	-1.55%	-1.11%	
-10	26 February 2007	155.81	13649.52	0.12%	-2.80%	-0.80%	-2.00%	
-9	27 February 2007	155.59	13478.83	-1.25%	-0.14%	-1.15%	1.01%	
-8	28 February 2007	153.9	12938.09	-4.01%	-1.09%	-1.87%	0.78%	
-7	1 March 2007	146.98	13159.55	1.71%	-4.50%	-0.39%	-4.11%	
-6	2 March 2007	149.6	12886.13	-2.08%	1.78%	-1.37%	3.15%	
-5	5 March 2007	141.89	12415.04	-3.66%	-5.15%	-1.78%	-3.38%	
-4	6 March 2007	145.69	12697.09	2.27%	2.68%	-0.24%	2.92%	
-3	7 March 2007	145.97	12579.75	-0.92%	0.19%	-1.07%	1.26%	1.26%
-2	8 March 2007	144.04	13049.35	3.73%	-1.32%	0.13%	-1.46%	-0.19%
-1	9 March 2007	157.79	12884.99	-1.26%	9.55%	-1.16%	10.70%	10.51%
0	12 March 2007	151.78	12902.63	0.14%	-3.81%	-0.80%	-3.01%	7.49%
1	13 March 2007	148.42	12982.98	0.62%	-2.21%	-0.67%	-1.54%	5.95%
2	14 March 2007	143.15	12529.62	-3.49%	-3.55%	-1.73%	-1.82%	4.13%
3	15 March 2007	144.12	12543.85	0.11%	0.68%	-0.80%	1.48%	5.61%

[93] [123]

The ‘Y’ intercept value ‘α' was -0.008 and the slope ‘ß’ found to be 0.258 for the target.

On the event day both acquirer and target had a fall in CAR but post event acquirer alone had increase in CAR. While for the acquirer it keeps increasing, for the target after the second day post event there is indication of increase in CAR. Overall acquirer CAR over 16% is well above the target CAR of around 6%, three days post event.

16. Acquiring firm: 'RANBAXY LABORATORIES LIMITED'

Target firm: 'ZENOTECH LABORATORIES LIMITED'.

Table 5.33: Acquirer: Ranbaxy labs:

Date from Event day	Date	Ranbaxy Stock price Rs	Sensex Rs	Market Returns %	Stocks returns	Expected return %	Abnormal return %	CAR %
-14	14 September 2007	416.78	15603.80					
-13	17 September 2007	410.37	15504.43	-0.64%	-1.54%	-0.02%	-1.52%	
-12	18 September 2007	410.42	15669.12	1.06%	0.01%	0.36%	-0.35%	
-11	19 September 2007	413.23	16322.75	4.17%	0.68%	1.06%	-0.38%	
-10	20 September 2007	408.24	16347.95	0.15%	-1.21%	0.16%	-1.37%	
-9	21 September 2007	402.69	16564.23	1.32%	-1.36%	0.42%	-1.78%	
-8	24 September 2007	411.66	16845.83	1.70%	2.23%	0.51%	1.72%	
-7	25 September 2007	423	16899.54	0.32%	2.75%	0.20%	2.56%	
-6	26 September 2007	426.1	16921.39	0.13%	0.73%	0.15%	0.58%	
-5	27 September 2007	422.36	17150.56	1.35%	-0.88%	0.43%	-1.31%	
-4	28 September 2007	431.47	17291.10	0.82%	2.16%	0.31%	1.85%	
-3	1 October 2007	438.57	17328.62	0.22%	1.65%	0.17%	1.47%	1.47%
-2	3 October 2007	440.11	17847.04	2.99%	0.35%	0.80%	-0.45%	1.02%
-1	4 October 2007	444.48	17777.14	-0.39%	0.99%	0.04%	0.96%	1.98%
0	5 October 2007	440.1	17773.36	-0.02%	-0.99%	0.12%	-1.10%	0.88%
1	8 October 2007	416.08	17491.39	-1.59%	-5.46%	-0.23%	-5.22%	-4.35%
2	9 October 2007	413.55	18280.24	4.51%	-0.61%	1.14%	-1.75%	-6.10%
3	10 October 2007	425.46	18658.25	2.07%	2.88%	0.59%	2.29%	-3.81%

[93] [124]

The ‘Y’ intercept value ‘α' was 0.001 and the slope ‘ß’ found to be 0.225 for the acquirer.

For the target firm the expected returns, abnormal returns and cumulative abnormal returns are as follows.

Table 5.34: Target: Zenotech labs:

Date from Event day	Date	Zen Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	14 September 2007	169.92	15603.80					
-13	17 September 2007	163.58	15504.43	-0.64%	-3.73%	-1.56%	-2.17%	
-12	18 September 2007	163.58	15669.12	1.06%	0.00%	-1.14%	1.14%	
-11	19 September 2007	159.89	16322.75	4.17%	-2.26%	-0.38%	-1.87%	
-10	20 September 2007	155.7	16347.95	0.15%	-2.62%	-1.36%	-1.26%	
-9	21 September 2007	153.76	16564.23	1.32%	-1.25%	-1.08%	-0.17%	
-8	24 September 2007	151.98	16845.83	1.70%	-1.16%	-0.99%	-0.17%	
-7	25 September 2007	151.29	16899.54	0.32%	-0.45%	-1.32%	0.87%	
-6	26 September 2007	147.9	16921.39	0.13%	-2.24%	-1.37%	-0.87%	
-5	27 September 2007	152.05	17150.56	1.35%	2.81%	-1.07%	3.88%	
-4	28 September 2007	151.19	17291.10	0.82%	-0.57%	-1.20%	0.63%	
-3	1 October 2007	151.87	17328.62	0.22%	0.45%	-1.35%	1.80%	1.80%
-2	3 October 2007	165.82	17847.04	2.99%	9.19%	-0.67%	9.85%	11.65%
-1	4 October 2007	161.54	17777.14	-0.39%	-2.58%	-1.50%	-1.08%	10.57%
0	5 October 2007	151.84	17773.36	-0.02%	-6.00%	-1.41%	-4.60%	5.97%
1	8 October 2007	148.24	17491.39	-1.59%	-2.37%	-1.79%	-0.58%	5.39%
2	9 October 2007	147.99	18280.24	4.51%	-0.17%	-0.30%	0.13%	5.52%
3	10 October 2007	148.55	18658.25	2.07%	0.38%	-0.90%	1.27%	6.79%

[93] [125]

The ‘Y’ intercept value ‘α' was -0.014 and the slope ‘ß’ found to be 0.244 for the target.

On the event day both the firms faced decline in CAR. For the acquirer before the event day there were alternate increase and decrease in CAR showing some contradicting indications for shareholders. For the target firm there is reasonable stability with CAR around 6%. On the second day prior to event target firm had steep rise in CAR from value of around 1.8% to 11.65% reflecting shareholders looking at the event positively.

17. Acquiring firm: ‘RELIANCE CAPITAL LTD’.

Target firm: ‘TV TODAY NETWORK LTD’.

Table 5.35: Acquirer: Reliance capital:

Date from Event day	Date	Reliance Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	28 March 2007	648.31	12884.34					
-13	29 March 2007	650.5	12979.66	0.74%	0.34%	1.01%	-0.67%	
-12	30 March 2007	667.33	13072.10	0.71%	2.59%	0.97%	1.61%	
-11	2 April 2007	626.95	12455.37	-4.72%	-6.05%	-5.28%	-0.77%	
-10	3 April 2007	619.86	12624.58	1.36%	-1.13%	1.72%	-2.85%	
-9	4 April 2007	625	12786.77	1.28%	0.83%	1.63%	-0.80%	
-8	5 April 2007	632.84	12856.08	0.54%	1.25%	0.78%	0.48%	
-7	9 April 2007	653.27	13177.74	2.50%	3.23%	3.03%	0.19%	
-6	10 April 2007	654.87	13189.54	0.09%	0.24%	0.26%	-0.01%	
-5	11 April 2007	674.03	13183.24	-0.05%	2.93%	0.10%	2.83%	
-4	12 April 2007	670.9	13113.81	-0.53%	-0.46%	-0.45%	-0.01%	
-3	13 April 2007	677.7	13384.08	2.06%	1.01%	2.53%	-1.51%	-1.51%
-2	16 April 2007	702.16	13695.58	2.33%	3.61%	2.83%	0.78%	-0.74%
-1	17 April 2007	704.43	13607.04	-0.65%	0.32%	-0.59%	0.91%	0.18%
0	18 April 2007	711.54	13672.19	0.48%	1.01%	0.70%	0.30%	0.48%
1	19 April 2007	699.99	13619.70	-0.38%	-1.62%	-0.29%	-1.33%	-0.85%
2	20 April 2007	717.32	13897.41	2.04%	2.48%	2.50%	-0.03%	-0.88%
3	23 April 2007	722.41	13928.33	0.22%	0.71%	0.41%	0.30%	-0.58%

[93] [126]

The ‘Y’ intercept value ‘α' was 0.0015 and the slope ‘ß’ found to be 1.15 for the acquirer.

For the target firm the expected returns, abnormal returns and cumulative abnormal returns are as follows.

Table 5.36: Target: TV today:

Date from Event day	Date	TV today Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	28 March 2007	117	12884.34					
-13	29 March 2007	120.19	12979.66	0.74%	2.73%	1.78%	0.95%	
-12	30 March 2007	123.66	13072.10	0.71%	2.89%	1.75%	1.13%	
-11	2 April 2007	119.24	12455.37	-4.72%	-3.57%	-2.59%	-0.99%	
-10	3 April 2007	117.74	12624.58	1.36%	-1.26%	2.27%	-3.53%	
-9	4 April 2007	120.19	12786.77	1.28%	2.08%	2.21%	-0.13%	
-8	5 April 2007	119	12856.08	0.54%	-0.99%	1.62%	-2.61%	
-7	9 April 2007	122.14	13177.74	2.50%	2.64%	3.18%	-0.55%	
-6	10 April 2007	130.3	13189.54	0.09%	6.68%	1.26%	5.43%	
-5	11 April 2007	135.15	13183.24	-0.05%	3.72%	1.15%	2.58%	
-4	12 April 2007	133.09	13113.81	-0.53%	-1.52%	0.76%	-2.29%	
-3	13 April 2007	136.08	13384.08	2.06%	2.25%	2.83%	-0.58%	-0.58%
-2	16 April 2007	139.9	13695.58	2.33%	2.81%	3.04%	-0.24%	-0.82%
-1	17 April 2007	143.48	13607.04	-0.65%	2.56%	0.67%	1.89%	1.07%
0	18 April 2007	150.47	13672.19	0.48%	4.87%	1.57%	3.30%	4.37%
1	19 April 2007	144.24	13619.70	-0.38%	-4.14%	0.88%	-5.02%	-0.64%
2	20 April 2007	144.52	13897.41	2.04%	0.19%	2.81%	-2.62%	-3.26%
3	23 April 2007	141.64	13928.33	0.22%	-1.99%	1.36%	-3.35%	-6.62%

[93] [127]

The ‘Y’ intercept value ‘α' was 0.011 and the slope ‘ß’ found to be 0.799 for the target firm.

In this case we see that during pre event there is speculation and increase in CAR for both acquirer and target firms. Post event there is decline next day for both the firms. In the negative CAR acquirer stays for the second day post event but the target firm declines further. Post event CAR reflects shareholders have apprehension over the event.

18. Acquiring firm: ‘RSWM LTD’.

Target firm: ‘CHESLIND TEXTILES LTD’.

Table 5.37: Acquirer: RSWM ltd:

Date from Event day	Date	RSW Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	2 March 2007	93.04	12886.13					
-13	5 March 2007	88.09	12415.04	-3.66%	-5.32%	-2.15%	-3.17%	
-12	6 March 2007	86.02	12697.09	2.27%	-2.35%	0.28%	-2.63%	
-11	7 March 2007	86.31	12579.75	-0.92%	0.34%	-1.03%	1.36%	
-10	8 March 2007	87.35	13049.35	3.73%	1.20%	0.88%	0.32%	
-9	9 March 2007	89.69	12884.99	-1.26%	2.68%	-1.16%	3.84%	
-8	12 March 2007	86.55	12902.63	0.14%	-3.50%	-0.59%	-2.91%	
-7	13 March 2007	87.99	12982.98	0.62%	1.66%	-0.39%	2.06%	
-6	14 March 2007	86.23	12529.62	-3.49%	-2.00%	-2.08%	0.08%	
-5	15 March 2007	85.4	12543.85	0.11%	-0.96%	-0.60%	-0.36%	
-4	16 March 2007	85.74	12430.40	-0.90%	0.40%	-1.02%	1.42%	
-3	19 March 2007	87.62	12644.99	1.73%	2.19%	0.06%	2.13%	2.13%
-2	20 March 2007	92.97	12705.94	0.48%	6.11%	-0.45%	6.56%	8.69%
-1	21 March 2007	93.95	12945.88	1.89%	1.05%	0.13%	0.93%	9.61%
0	22 March 2007	93	13308.03	2.80%	-1.01%	0.50%	-1.51%	8.10%
1	23 March 2007	88.51	13285.93	-0.17%	-4.83%	-0.72%	-4.11%	3.99%
2	26 March 2007	89.3	13124.32	-1.22%	0.89%	-1.15%	2.04%	6.03%
3	28 March 2007	87.06	12884.34	-1.83%	-2.51%	-1.40%	-1.11%	4.92%

[93] [128]

The ‘Y’ intercept value ‘α' was -0.006 and the slope ‘ß’ found to be 0.410 for the acquirer.

For the target firm the expected returns, abnormal returns and cumulative abnormal returns are as follows.

Table 5.38: Target: Cheslin textiles:

Date from Event day	Date	Cheslin Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	2 March 2007	18.5	12886.13					
-13	5 March 2007	18.03	12415.04	-3.66%	-2.54%	-1.14%	-1.40%	
-12	6 March 2007	18.15	12697.09	2.27%	0.67%	2.92%	-2.25%	
-11	7 March 2007	18.25	12579.75	-0.92%	0.55%	0.73%	-0.18%	
-10	8 March 2007	18.38	13049.35	3.73%	0.71%	3.92%	-3.20%	
-9	9 March 2007	18.26	12884.99	-1.26%	-0.65%	0.50%	-1.15%	
-8	12 March 2007	18.39	12902.63	0.14%	0.71%	1.46%	-0.74%	
-7	13 March 2007	20.41	12982.98	0.62%	10.98%	1.79%	9.20%	
-6	14 March 2007	20.08	12529.62	-3.49%	-1.62%	-1.03%	-0.59%	
-5	15 March 2007	20.95	12543.85	0.11%	4.33%	1.44%	2.89%	
-4	16 March 2007	20.57	12430.40	-0.90%	-1.81%	0.74%	-2.56%	
-3	19 March 2007	21.81	12644.99	1.73%	6.03%	2.54%	3.48%	3.48%
-2	20 March 2007	21.62	12705.94	0.48%	-0.87%	1.69%	-2.56%	0.92%
-1	21 March 2007	21.44	12945.88	1.89%	-0.83%	2.65%	-3.49%	-2.57%
0	22 March 2007	21.72	13308.03	2.80%	1.31%	3.28%	-1.97%	-4.54%
1	23 March 2007	21.53	13285.93	-0.17%	-0.87%	1.25%	-2.12%	-6.66%
2	26 March 2007	21.42	13124.32	-1.22%	-0.51%	0.53%	-1.04%	-7.70%
3	28 March 2007	21.31	12884.34	-1.83%	-0.51%	0.11%	-0.63%	-8.33%

[93] [129]

The ‘Y’ intercept value ‘α' was 0.013 and the slope ‘ß’ found to be 0.684 for the target.

Both acquiring and target firms CAR decline on event day. For the acquirer there is increase and decrease in three days before event and after event day. With respect to target throughout the event window period there is decline reflecting shareholders apprehension about the event.

19. Acquiring firm: ‘SPENTEX INDUSTRIES LTD’.

Target firm: ‘AMIT SPINNING INDUSTRIES LTD’.

Table 5.39: Acquirer: Spentex industries:

Date from Event day	Date	Spentex Stock price	Sensex	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	6 February 2006	45.73	9980.42					
-13	7 February 2006	45.44	10082.28	1.02%	-0.63%	-1.45%	0.82%	
-12	8 February 2006	44.99	10044.82	-0.37%	-0.99%	2.70%	-3.69%	
-11	10 February 2006	45.07	10110.97	0.66%	0.18%	-0.37%	0.55%	
-10	13 February 2006	43.7	10173.25	0.62%	-3.04%	-0.25%	-2.79%	
-9	14 February 2006	44.13	10086.63	-0.85%	0.98%	4.13%	-3.14%	
-8	15 February 2006	44.38	10113.18	0.26%	0.57%	0.80%	-0.24%	
-7	16 February 2006	52.04	10124.30	0.11%	17.26%	1.26%	16.00%	
-6	17 February 2006	54.63	9980.42	-1.42%	4.98%	5.83%	-0.85%	
-5	20 February 2006	51.05	10079.30	0.99%	-6.55%	-1.37%	-5.19%	
-4	21 February 2006	49.77	10168.11	0.88%	-2.51%	-1.04%	-1.47%	
-3	22 February 2006	47.62	10224.32	0.55%	-4.32%	-0.06%	-4.26%	-4.26%
-2	23 February 2006	48.48	10244.05	0.19%	1.81%	1.01%	0.79%	-3.47%
-1	24 February 2006	50.01	10200.76	-0.42%	3.16%	2.85%	0.31%	-3.16%
0	27 February 2006	50.12	10282.09	0.80%	0.22%	-0.79%	1.01%	-2.15%
1	28 February 2006	50.33	10370.24	0.86%	0.42%	-0.97%	1.39%	-0.77%
2	1 March 2006	50.36	10565.47	1.88%	0.06%	-4.03%	4.08%	3.32%
3	2 March 2006	52.66	10626.78	0.58%	4.57%	-0.14%	4.71%	8.02%

[93] [130]

The ‘Y’ intercept value ‘α' was 0.015 and the slope ‘ß’ found to be -2.98 for the acquirer.

For the target firm the expected returns, abnormal returns and cumulative abnormal returns are as follows.

Table 5.40: Target: Amit spinning:

Date from Event day	Date	Amit Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	6 February 2006	9.2	9980.42					
-13	7 February 2006	9	10082.28	1.02%	-2.17%	-0.66%	-1.52%	
-12	8 February 2006	8.82	10044.82	-0.37%	-2.00%	0.00%	-2.00%	
-11	10 February 2006	8.67	10110.97	0.66%	-1.70%	-0.49%	-1.21%	
-10	13 February 2006	9.07	10173.25	0.62%	4.61%	-0.47%	5.08%	
-9	14 February 2006	8.78	10086.63	-0.85%	-3.20%	0.22%	-3.42%	
-8	15 February 2006	8.68	10113.18	0.26%	-1.14%	-0.30%	-0.84%	
-7	16 February 2006	8.86	10124.30	0.11%	2.07%	-0.23%	2.30%	
-6	17 February 2006	9.13	9980.42	-1.42%	3.05%	0.49%	2.56%	
-5	20 February 2006	9.08	10079.30	0.99%	-0.55%	-0.64%	0.10%	
-4	21 February 2006	8.93	10168.11	0.88%	-1.65%	-0.59%	-1.06%	
-3	22 February 2006	8.75	10224.32	0.55%	-2.02%	-0.44%	-1.58%	-1.58%
-2	23 February 2006	8.35	10244.05	0.19%	-4.57%	-0.27%	-4.30%	-5.88%
-1	24 February 2006	8.11	10200.76	-0.42%	-2.87%	0.02%	-2.89%	-8.77%
0	27 February 2006	8.69	10282.09	0.80%	7.15%	-0.55%	7.71%	-1.07%
1	28 February 2006	9.15	10370.24	0.86%	5.29%	-0.58%	5.88%	4.81%
2	1 March 2006	9.6	10565.47	1.88%	4.92%	-1.06%	5.98%	10.79%
3	2 March 2006	9.89	10626.78	0.58%	3.02%	-0.45%	3.47%	14.26%

[93] [131]

The ‘Y’ intercept value ‘α' was -0.001 and the slope ‘ß’ found to be -0.47 for the target firm.

Both acquirer and target firms reflect increase in CAR on the event day. Both reflect increase from one day prior to event. The increase for target firm to a percentage of nearly 15% is more than the acquirer which reflects 8%. Overall shareholders have positive perception of the event as shown by the event window.

20. Acquiring firm: 'TELEVISION EIGHTEEN INDIA LTD'.

Target firm: 'INFOMEDIA INDIA LTD'.

Table 5.41: Acquirer: Television eighteen:

Date from Event day	Date	Tel.18 Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	22 November 2007	461.65	18526.32					
-13	23 November 2007	462.35	18852.87	1.76%	0.15%	0.24%	-0.09%	
-12	26 November 2007	466.26	19247.54	2.09%	0.85%	0.21%	0.64%	
-11	27 November 2007	474.64	19127.73	-0.62%	1.80%	0.51%	1.29%	
-10	28 November 2007	484.24	18938.87	-0.99%	2.02%	0.55%	1.47%	
-9	29 November 2007	475.57	19003.26	0.34%	-1.79%	0.40%	-2.19%	
-8	30 November 2007	474.82	19363.19	1.89%	-0.16%	0.23%	-0.39%	
-7	3 December 2007	478.82	19603.41	1.24%	0.84%	0.30%	0.54%	
-6	4 December 2007	473.82	19529.50	-0.38%	-1.04%	0.48%	-1.53%	
-5	5 December 2007	482.88	19738.07	1.07%	1.91%	0.32%	1.59%	
-4	6 December 2007	478.49	19795.87	0.29%	-0.91%	0.41%	-1.32%	
-3	7 December 2007	478.87	19966.00	0.86%	0.08%	0.35%	-0.27%	-0.27%
-2	10 December 2007	480.35	19930.68	-0.18%	0.31%	0.46%	-0.15%	-0.42%
-1	11 December 2007	487.68	20290.89	1.81%	1.53%	0.24%	1.29%	0.87%
0	12 December 2007	495.46	20375.87	0.42%	1.60%	0.40%	1.20%	2.07%
1	13 December 2007	496.79	20104.39	-1.33%	0.27%	0.59%	-0.32%	1.74%
2	14 December 2007	498.69	20030.83	-0.37%	0.38%	0.48%	-0.10%	1.64%
3	17 December 2007	487.97	19261.35	-3.84%	-2.15%	0.87%	-3.02%	-1.38%

[93] [132]

The ‘Y’ intercept value ‘α' was 0.004 and the slope ‘ß’ found to be -0.11 for the acquirer.

For the target firm the expected returns, abnormal returns and cumulative abnormal returns are as follows.

Table 5.42: Target: Infomedia India:

Date from Event day	Date	In.M Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	22 November 2007	206.95	18526.32					
-13	23 November 2007	207.9	18852.87	1.76%	0.46%	1.94%	-1.48%	
-12	26 November 2007	210.48	19247.54	2.09%	1.24%	2.03%	-0.79%	
-11	27 November 2007	208.64	19127.73	-0.62%	-0.87%	1.29%	-2.16%	
-10	28 November 2007	207.71	18938.87	-0.99%	-0.45%	1.19%	-1.64%	
-9	29 November 2007	207.82	19003.26	0.34%	0.05%	1.55%	-1.50%	
-8	30 November 2007	202.27	19363.19	1.89%	-2.67%	1.98%	-4.65%	
-7	3 December 2007	208.27	19603.41	1.24%	2.97%	1.80%	1.17%	
-6	4 December 2007	210.47	19529.50	-0.38%	1.06%	1.36%	-0.30%	
-5	5 December 2007	229.73	19738.07	1.07%	9.15%	1.75%	7.40%	
-4	6 December 2007	242.35	19795.87	0.29%	5.49%	1.54%	3.95%	
-3	7 December 2007	235.01	19966.00	0.86%	-3.03%	1.69%	-4.72%	-4.72%
-2	10 December 2007	241.71	19930.68	-0.18%	2.85%	1.41%	1.44%	-3.28%
-1	11 December 2007	261.53	20290.89	1.81%	8.20%	1.95%	6.25%	2.96%
0	12 December 2007	265.84	20375.87	0.42%	1.65%	1.57%	0.07%	3.04%
1	13 December 2007	243.09	20104.39	-1.33%	-8.56%	1.10%	-9.65%	-6.62%
2	14 December 2007	236.53	20030.83	-0.37%	-2.70%	1.36%	-4.06%	-10.67%
3	17 December 2007	241.93	19261.35	-3.84%	2.28%	0.41%	1.87%	-8.80%

[93] [133]

The ‘Y’ intercept value ‘α' was 0.014 and the slope ‘ß’ found to be 0.273 for the target.

It is seen that for acquirer there is increase on the event day and for target firm the CAR remains more or less stable on the day of event. While pre event speculation for the merger was positive, post event reaction by shareholders reflect negative reaction to the event.

21. Acquiring firm: 'THE WEST COAST PAPER MILLS LTD'.

Target firm: 'RAMA NEWSPRINT & PAPERS LTD'.

Table 5.43: Acquirer: West coast paper:

Date from Event day	Date	WC Stock price Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	18 August 2003	195.68	3977.73					
-13	19 August 2003	195	4006.91	0.73%	-0.35%	-0.63%	0.29%	
-12	20 August 2003	193.41	4056.60	1.24%	-0.82%	-0.44%	-0.37%	
-11	21 August 2003	192.8	4095.39	0.96%	-0.32%	-0.55%	0.23%	
-10	22 August 2003	189.48	4125.12	0.73%	-1.72%	-0.64%	-1.09%	
-9	25 August 2003	184.04	4004.63	-2.92%	-2.87%	-2.02%	-0.85%	
-8	27 August 2003	183.09	4205.56	5.02%	-0.52%	0.99%	-1.51%	
-7	28 August 2003	182.48	4212.29	0.16%	-0.33%	-0.85%	0.52%	
-6	29 August 2003	181.36	4244.73	0.77%	-0.61%	-0.62%	0.01%	
-5	1 September 2003	186.71	4324.76	1.89%	2.95%	-0.20%	3.15%	
-4	2 September 2003	184.55	4339.20	0.33%	-1.16%	-0.79%	-0.37%	
-3	3 September 2003	186.17	4257.94	-1.87%	0.88%	-1.62%	2.50%	2.50%
-2	4 September 2003	184.34	4310.51	1.23%	-0.98%	-0.44%	-0.54%	1.96%
-1	5 September 2003	182.91	4369.17	1.36%	-0.78%	-0.40%	-0.38%	1.58%
0	8 September 2003	187.65	4434.25	1.49%	2.59%	-0.35%	2.94%	4.52%
1	9 September 2003	198.84	4425.20	-0.20%	5.96%	-0.99%	6.95%	11.47%
2	10 September 2003	190.64	4434.26	0.20%	-4.12%	-0.83%	-3.29%	8.18%
3	11 September 2003	184.94	4393.13	-0.93%	-2.99%	-1.26%	-1.73%	6.45%

[93] [134]

The 'Y' intercept value 'α' was -0.009 and the slope 'ß' found to be 0.379 for the acquirer.

For the target firm the expected returns, abnormal returns and cumulative abnormal returns are as follows.

Table 5.44: Target: Rama newsprint:

Date from Event day	Date	RN Stock prices Rs	Sensex Rs	Market Returns %	Stocks returns %	Expected return %	Abnormal return %	CAR %
-14	18 August 2003	8.23	3977.73					
-13	19 August 2003	8.34	4006.91	0.73%	1.34%	-0.28%	1.62%	
-12	20 August 2003	8.12	4056.60	1.24%	-2.64%	0.16%	-2.80%	
-11	21 August 2003	8.85	4095.39	0.96%	8.99%	-0.09%	9.08%	
-10	22 August 2003	9.46	4125.12	0.73%	6.89%	-0.29%	7.18%	
-9	25 August 2003	8.83	4004.63	-2.92%	-6.66%	-3.47%	-3.19%	
-8	27 August 2003	8.85	4205.56	5.02%	0.23%	3.45%	-3.22%	
-7	28 August 2003	8.53	4212.29	0.16%	-3.62%	-0.78%	-2.83%	
-6	29 August 2003	8.08	4244.73	0.77%	-5.28%	-0.25%	-5.02%	
-5	1 September 2003	8.13	4324.76	1.89%	0.62%	0.72%	-0.10%	
-4	2 September 2003	8.02	4339.20	0.33%	-1.35%	-0.63%	-0.72%	
-3	3 September 2003	7.6	4257.94	-1.87%	-5.24%	-2.56%	-2.68%	-2.68%
-2	4 September 2003	7.61	4310.51	1.23%	0.13%	0.15%	-0.02%	-2.70%
-1	5 September 2003	8.28	4369.17	1.36%	8.80%	0.26%	8.54%	5.84%
0	8 September 2003	8.82	4434.25	1.49%	6.52%	0.37%	6.15%	11.99%
1	9 September 2003	8.21	4425.20	-0.20%	-6.92%	-1.10%	-5.81%	6.17%
2	10 September 2003	7.99	4434.26	0.20%	-2.68%	-0.75%	-1.93%	4.24%
3	11 September 2003	7.94	4393.13	-0.93%	-0.63%	-1.73%	1.11%	5.35%

[93] [135]

The ‘Y’ intercept value ‘α' was -0.009 and the slope ‘ß’ found to be 0.872 for the target.

Both the firms witness increase in CAR on the event day. Post event day while there is increase for acquirer the target firm faces decline in CAR. Two days prior to the event for the target shareholders info gave them positive perception but after the event with further information some degree of apprehension is reflected. For both the firms, in the window period there is increase in CAR. For acquirer 2.5% CAR had increased to 6.5% and for target firm -2.6% CAR has gone up to 5.35%.

5.2.1. ANOVA for non cement sector:

Acquirers and target firms have been taken as two groups to see if there is significance in the difference of CAR values using ANOVA.

If we consider the CAR’s on the event days for acquirers and target firms separately and do ANOVA test the result is as follows:

ANOVA for acquirers:

Table 5.45: Sum and average values of acquirers:

SUMMARY	Count	Sum	Average	Variance
-3	21	0.085	0.004	0.001
-2	21	0.066	0.003	0.003
-1	21	0.373	0.018	0.007
0	21	0.323	0.015	0.012
1	21	0.338	0.016	0.017
2	21	0.568	0.027	0.019
3	21	0.201	0.01	0.017

Table 5.45 (Contd.):

SUMMARY	Count	Sum	Average	Variance
Tele 18	7	0.043	0.006	0
West Coast	7	0.367	0.052	0.001
Spentex	7	-0.025	-0.004	0.002
RSWM	7	0.435	0.062	0.001
Reliance Capital	7	-0.039	-0.006	0
Ranbaxy	7	-0.089	-0.013	0.001
M&M	7	0.73	0.104	0.002
Kalpatharu	7	0.372	0.053	0.003
IVRCL	7	0.018	0.003	0
IPCA	7	0.492	0.07	0.002
Industrial Invest	7	-0.881	-0.126	0.009
Idea	7	-0.451	-0.064	0.003
HB Stock	7	1.968	0.281	0.022
Emami	7	0.549	0.078	0.001
Dabur	7	0.719	0.103	0.005
Consolidated Security	7	-0.876	-0.125	0.007
Consolidated Security	7	-0.239	-0.034	0
Canara Bank	7	-0.622	-0.089	0.001
Bajaj Hindustan	7	-0.077	-0.011	0.001
Apar Ind	7	-0.371	-0.053	0.001
AB Nuvo	7	-0.066	-0.009	0.001

[136]

Table 5.46: ANOVA values:

ANOVA						
Source of Variation	**SS**	**Df**	**MS**	**F**	**P-value**	**F crit**
Rows	0.0089	6	0.0015	0.4843	0.818966	2.175006
Columns	1.1569	20	0.0578	18.9266	3.86E-28	1.65868
Error	0.3668	120	0.0031			
Total	1.5326	146				

[136]

We see there is no significance in variation between the event days for the firms as the ‘F’ value is 0.4843 and the critical table value is 2.175. But when we see the difference between the firms for the different event days the calculated ‘F’ value is 18.92 against a critical value of 1.65, and p- value is zero, which means there is lot of variation among the firms.

ANOVA for Target firms:

Table 5.47: Sum and average values of target firms:

SUMMARY	Count	Sum	Average	Variance
-3	21	-0.229	-0.011	0.005
-2	21	-0.236	-0.011	0.008
-1	21	0.15	0.007	0.008
0	21	0.484	0.023	0.008
1	21	0.453	0.022	0.01
2	21	0.261	0.012	0.014
3	21	0.107	0.005	0.019

Table 5.47 (contd.):

SUMMARY	Count	Sum	Average	Variance
Info Media	7	-0.281	-0.04	0.003
Rama Newprint	7	0.282	0.04	0.003
Amit	7	0.126	0.018	0.007
Cheslind	7	-0.254	-0.036	0.002
TV Today	7	-0.065	-0.009	0.001
Zenotech	7	0.477	0.068	0.001
Swaraj Eng	7	0.348	0.05	0.001
JMC	7	-1.287	-0.184	0.007
Hindustan Dorr	7	0.224	0.032	0.001
Tonira	7	0.028	0.004	0.002
Indo Green	7	0.341	0.049	0.002
Spice	7	1.685	0.241	0.001
DCM Shriram	7	0.479	0.068	0.004
Zandu	7	0.118	0.017	0.014
Fem Care	7	-0.771	-0.11	0.005
Asian Oil	7	-0.508	-0.073	0.006
Moving Picture	7	0.471	0.067	0.002
Canfin Homes	7	0.556	0.079	0.006
BH Sugar	7	-0.411	-0.059	0.002
Uniflex	7	-0.681	-0.097	0.001
Apollo Sindhoori	7	0.114	0.016	0.002

[136]

Table 5.48: ANOVA values for the target firms:

Source of Variation	SS	df	MS	F	P-value	F crit
Rows	0.0243	6	0.0040	1.2061	0.307832	2.175006
Columns	1.0685	20	0.0534	15.9331	5.65E-25	1.65868
Error	0.4024	120	0.0034			
Total	1.4951	146				

[136]

Between the event days for the firms the difference in CAR values is not seen to be significant as the calculated 'F' value is 1.2 against a critical value of 2.175. Similar to acquiring firms for the target firms also the difference in CAR amongst the firms is significant as the calculated 'F' value is 15.93 against the critical table value of 1.65.

5.3. Analysis using 'Market model' for Indian cement sector:

For the sample cases taken for the study in Indian cement sector the cases listed in BSE had been taken as given in table number 5.2. By applying the Market model the results, case wise, are as given below.

1. GIL Vs L&T:
Acquirer: GIL, Target: cement division of L&T.

The acquirer and target firms had the share price fluctuations and returns as follows.

Table 5.49: Acquirer: GIL:

Event day	Date	Grasim Rs	Sensex Rs	Market Returns %	Stock Returns %	Expected Returns %	Abnormal returns %	CAR%
-14	23-Apr-04	1209.56	5925.58					
-13	27-Apr-04	1161.41	5712.28	-3.60%	-3.98%			
-12	28-Apr-04	1186.81	5713.09	0.01%	2.19%			
-11	29-Apr-04	1205.13	5668.43	-0.78%	1.54%			
-10	30-Apr-04	1235.73	5655.09	-0.24%	2.54%			
-9	3-May-04	1171.36	5584.99	-1.24%	-5.21%			
-8	4-May-04	1168.71	5647.15	1.11%	-0.23%			
-7	5-May-04	1184.99	5686.19	0.69%	1.39%			
-6	6-May-04	1219.56	5757.3	1.25%	2.92%			
-5	7-May-04	1203.77	5669.58	-1.52%	-1.29%			
-4	10-May-04	1162.97	5555.84	-2.01%	-3.39%			
-3	11-May-04	1111.22	5325.9	-4.14%	-4.45%	-5.40%	0.95%	0.95%
-2	12-May-04	1123.18	5358.35	0.61%	1.08%	1.43%	-0.36%	0.59%
-1	13-May-04	1136.94	5399.47	0.77%	1.22%	1.66%	-0.44%	0.15%
0	14-May-04	1082.44	5069.87	-6.10%	-4.79%	-8.23%	3.43%	3.59%
1	17-May-04	1004.73	4505.16	-11.14%	-7.18%	-15.47%	8.29%	11.87%
2	18-May-04	1041.95	4877.02	8.25%	3.70%	12.43%	-8.73%	3.15%
3	19-May-04	1062.79	5006.1	2.65%	2.00%	4.36%	-2.36%	0.78%

[93] [137]

For GIL the Y intercept was ‘00’ and slope β was 1.43.

On the event day there is increase in CAR and after that also increases before falling on the third day post event.

Table 5.50: Target: L&T:

Event Day	Date	L&T Rs	Sensex Rs	Market Returns %	Stock Returns %	Expected Returns%	Abnormal returns %	CAR %
-14	23-Apr-04	627.55	5925.58					
-13	27-Apr-04	588.97	5712.28	-3.60%	-6.15%	-6.80%		
-12	28-Apr-04	584.35	5713.09	0.01%	-0.78%	0.24%		
-11	29-Apr-04	568.37	5668.43	-0.78%	-2.73%	-1.31%		
-10	30-Apr-04	570.42	5655.09	-0.24%	0.36%	-0.25%		
-9	3-May-04	551.37	5584.99	-1.24%	-3.34%	-2.21%		
-8	4-May-04	566.89	5647.15	1.11%	2.81%	2.38%		
-7	5-May-04	577.52	5686.19	0.69%	1.88%	1.55%		
-6	6-May-04	595.88	5757.3	1.25%	3.18%	2.64%		
-5	7-May-04	587.55	5669.58	-1.52%	-1.40%	-2.76%		
-4	10-May-04	563.77	5555.84	-2.01%	-4.05%	-3.70%		
-3	11-May-04	534.20	5325.9	-4.14%	-5.24%	-7.85%	2.61%	2.61%
-2	12-May-04	539.72	5358.35	0.61%	1.03%	1.40%	-0.36%	2.25%
-1	13-May-04	544.07	5399.47	0.77%	0.81%	1.70%	-0.90%	1.35%
0	14-May-04	522.52	5069.87	-6.10%	-3.96%	-11.68%	7.72%	9.07%
1	17-May-04	448.37	4505.16	-11.14%	-14.19%	-21.49%	7.30%	16.37%
2	18-May-04	461.46	4877.02	8.25%	2.92%	16.29%	-13.37%	3.01%
3	23-Jun-04	626.13	4644	-4.78%	35.68%	-9.10%	44.78%	47.79%

[93] [138]

The Y intercept was ‘00’ and slope β is 1.94.

Slope being more than 1 signals the share reacting faster than the market. The ‘CAR’ at the end of third day post event had been very good at 47%. The share market has welcomed the event. The case was having lot of issues and complications and finally when it got cleared the share market have reflected a sigh of relief. This is also true for the acquirer GIL also with good returns.

2. ACC ltd announcement of merger with its subsidiary Bargarh Cement Ltd:

Table 5.51: Acquirer: ACC (Bargarh merger):

Event Day	Date	ACC	Sensex Rs	Market Returns Rs	Stock Returns %	Expected Returns %	Abnormal returns %	CAR %
-14	18-Aug-05	463.33	7811.13					
-13	19-Aug-05	470.74	7780.76	-0.39%	1.60%	0.21%		
-12	22-Aug-05	468.64	7750.6	-0.39%	-0.45%	0.21%		
-11	23-Aug-05	464.67	7615.99	-1.74%	-0.85%	-0.10%		
-10	24-Aug-05	459.89	7612	-0.05%	-1.03%	0.29%		
-9	25-Aug-05	459.63	7660.42	0.64%	-0.06%	0.44%		
-8	26-Aug-05	467.99	7680.22	0.26%	1.82%	0.36%		
-7	29-Aug-05	472.79	7634.43	-0.60%	1.02%	0.16%		
-6	30-Aug-05	474.43	7745	1.45%	0.35%	0.63%		
-5	31-Aug-05	477.27	7805.43	0.78%	0.60%	0.48%		
-4	01-Sep-05	478.05	7876.15	0.91%	0.16%	0.51%		
-3	02-Sep-05	479.52	7899.77	0.30%	0.31%	0.37%	-0.06%	-0.06%
-2	05-Sep-05	483.26	7925.24	0.32%	0.78%	0.37%	0.41%	0.35%
-1	06-Sep-05	480.01	7946.78	0.27%	-0.67%	0.36%	-1.03%	-0.68%
0	08-Sep-05	481.86	8052.56	1.33%	0.39%	0.60%	-0.22%	-0.90%
1	09-Sep-05	480.84	8060.01	0.09%	-0.21%	0.32%	-0.53%	-1.43%
2	12-Sep-05	477.63	8138.42	0.97%	-0.67%	0.52%	-1.19%	-2.62%
3	13-Sep-05	474.41	8193.96	0.68%	-0.67%	0.45%	-1.13%	-3.75%

[93] [139]

The Y intercept had been ‘0’ and slope β had been 0.22.

The CAR had been negative at the end of the event period. The Target firm was a subsidiary being merged with the parent. When the target was taken over it was a struggling firm which

ACC took over for market expansion as part of strategy. The CAR reflects the market had not welcomed the merger of struggling firm.

3. ACC Ltd announcement of merger of its subsidiary Damodhar Cements Ltd:

Table 5.52: Acquirer: ACC (Damodhar):

Event Day	Date	ACC	Sensex Rs	Market Returns %	Stock Returns %	Expected Returns %	Abnormal returns %	CAR %
-14	07-Nov-05	465.66	8206.83					
-13	08-Nov-05	475.30	8317.8	1.35%	2.07%	0.85%		
-12	09-Nov-05	480.68	8308.78	-0.11%	1.13%	0.69%		
-11	10-Nov-05	481.10	8308.93	0.00%	0.09%	0.70%		
-10	11-Nov-05	482.18	8471.04	1.95%	0.22%	0.92%		
-9	14-Nov-05	483.16	8494.29	0.27%	0.20%	0.73%		
-8	16-Nov-05	480.66	8595.92	1.20%	-0.52%	0.84%		
-7	17-Nov-05	481.26	8649.52	0.62%	0.12%	0.77%		
-6	18-Nov-05	499.04	8686.65	0.43%	3.69%	0.75%		
-5	21-Nov-05	502.13	8610.74	-0.87%	0.62%	0.61%		
-4	22-Nov-05	501.33	8534.97	-0.88%	-0.16%	0.61%		
-3	23-Nov-05	500.44	8638.34	1.21%	-0.18%	0.84%	-1.02%	-1.02%
-2	24-Nov-05	507.09	8744.04	1.22%	1.33%	0.84%	0.49%	-0.52%
-1	25-Nov-05	510.62	8853.21	1.25%	0.70%	0.84%	-0.15%	-0.67%
0	28-Nov-05	514.76	8994.94	1.60%	0.81%	0.88%	-0.07%	-0.74%
1	29-Nov-05	517.03	8931.16	-0.71%	0.44%	0.63%	-0.19%	-0.93%
2	30-Nov-05	519.35	8788.81	-1.59%	0.45%	0.53%	-0.08%	-1.01%
3	01-Dec-05	520.59	8944.78	1.77%	0.24%	0.90%	-0.66%	-1.67%

[93] [139]

The Y intercept is ‘0’ and β, slope, is 0.1.

Here too like with merger of Bargarh cement the case had been a merger of subsidiary and the market may not have appreciated the case as the CAR is negative. The share price had increased post event slightly but the expected returns based on the regression equation shows the abnormal returns are negative.

4. ACC Ltd announcement of takeover of cement company Bargarh Cements Ltd:

Table 5.53: Acquirer: ACC (Bargarh takeover):

Event day	Date	ACC Rs	Sensex Rs	Market Returns %	Stock Returns %	Expected Returns %	Abnormal returns %	CAR %
-14	02-Dec-03	232.87	5186.08					
-13	03-Dec-03	236.51	5221.9	0.69%	1.56%	-0.11%		
-12	04-Dec-03	232.09	5225.9	0.08%	-1.87%	-0.56%		
-11	05-Dec-03	231.70	5131.72	-1.80%	-0.17%	-1.95%		
-10	08-Dec-03	220.97	5131.54	0.00%	-4.63%	-0.62%		
-9	09-Dec-03	222.27	5229.34	1.91%	0.59%	0.79%		
-8	10-Dec-03	223.84	5285.54	1.07%	0.71%	0.17%		
-7	11-Dec-03	221.97	5299.96	0.27%	-0.84%	-0.42%		
-6	12-Dec-03	224.07	5315.81	0.30%	0.95%	-0.40%		
-5	15-Dec-03	229.69	5390.88	1.41%	2.51%	0.42%		
-4	16-Dec-03	226.29	5437.05	0.86%	-1.48%	0.01%		
-3	17-Dec-03	225.58	5418.23	-0.35%	-0.31%	-0.88%	0.56%	0.56%
-2	18-Dec-03	225.71	5455	0.68%	0.06%	-0.12%	0.18%	0.74%
-1	19-Dec-03	231.87	5541.35	1.58%	2.73%	0.55%	2.18%	2.92%
0	22-Dec-03	233.10	5577.96	0.66%	0.53%	-0.13%	0.66%	3.58%
1	23-Dec-03	233.01	5564.33	-0.24%	-0.04%	-0.80%	0.76%	4.35%
2	24-Dec-03	232.86	5641.92	1.39%	-0.07%	0.41%	-0.47%	3.87%
3	26-Dec-03	243.47	5699.24	1.02%	4.56%	0.13%	4.43%	8.30%

[93] [139]

The Y intercept had been ‘0’ and slope β had been 0.73.

In spite of the slight fall on the second day post event the market had welcomed the takeover. ACC had done this take over strategically as it got a BIFR referred company with good asset base. Market seems to have appreciated the case.

5. Holcim Ltd takeover of ACC Ltd:

Table 5.54: Target: ACC (Holcim):

Event day	Date	ACC Rs	Sensex Rs	Market Returns %	Stock Returns %	Expected Returns %	Abnormal returns %	CAR %
-14	17-Feb-05	366.10	6589.29					
-13	18-Feb-05	366.15	6584.32	-0.08%	0.02%	-0.03%		
-12	21-Feb-05	362.49	6534.68	-0.75%	-1.00%	-0.34%		
-11	22-Feb-05	361.01	6589.41	0.84%	-0.41%	0.38%		
-10	23-Feb-05	364.24	6582.5	-0.10%	0.90%	-0.05%		
-9	24-Feb-05	361.97	6574.21	-0.13%	-0.62%	-0.05%		
-8	25-Feb-05	360.97	6569.72	-0.07%	-0.28%	-0.03%		
-7	28-Feb-05	364.54	6713.86	2.19%	0.99%	0.99%		
-6	01-Mar-05	365.66	6651.08	-0.94%	0.31%	-0.42%		
-5	02-Mar-05	366.40	6686.89	0.54%	0.20%	0.24%		
-4	03-Mar-05	370.99	6784.72	1.46%	1.25%	0.66%		
-3	04-Mar-05	374.67	6849.48	0.95%	0.99%	0.43%	0.56%	0.56%
-2	07-Mar-05	371.26	6878.98	0.43%	-0.91%	0.20%	-1.11%	-0.55%
-1	08-Mar-05	369.28	6915.09	0.52%	-0.53%	0.24%	-0.77%	-1.32%
0	09-Mar-05	368.98	6892.82	-0.32%	-0.08%	-0.14%	0.06%	-1.25%
1	10-Mar-05	369.21	6907.65	0.22%	0.06%	0.10%	-0.04%	-1.29%
2	11-Mar-05	368.93	6853.73	-0.78%	-0.08%	-0.35%	0.27%	-1.02%
3	14-Mar-05	367.00	6810.04	-0.64%	-0.52%	-0.28%	-0.24%	-1.26%

[93] [139]

The Y intercept had been ‘0’ and slope β had been 0.44.

The CAR had been negative in the window period. This is a case a performing domestic company getting taken over by a multinational giant, ‘Holcim’.

6. Holcim Ltd takeover of ACL:

Table 5.55: Target: ACL (Holcim):

Event day	Date	Ambuja Rs	Sensex Rs	Market Returns %	Stock Returns %	Expected Returns %	Abnormal returns %	CAR %
-14	06-Mar-06	91.15	10735.36					
-13	07-Mar-06	91.85	10725.67	-0.09%	0.76%	0.62%		
-12	08-Mar-06	93.68	10508.85	-2.02%	1.99%	-0.58%		
-11	09-Mar-06	95.56	10573.54	0.62%	2.01%	1.06%		
-10	10-Mar-06	100.18	10765.16	1.81%	4.84%	1.80%		
-9	13-Mar-06	98.96	10803.71	0.36%	-1.22%	0.90%		
-8	14-Mar-06	99.04	10801.72	-0.02%	0.08%	0.66%		
-7	16-Mar-06	99.49	10878.74	0.71%	0.45%	1.12%		
-6	17-Mar-06	98.25	10860.04	-0.17%	-1.25%	0.57%		
-5	20-Mar-06	98.92	10941.11	0.75%	0.69%	1.14%		
-4	21-Mar-06	98.32	10905.2	-0.33%	-0.61%	0.47%		
-3	22-Mar-06	95.96	10841.35	-0.59%	-2.39%	0.31%	-2.70%	-2.70%
-2	23-Mar-06	95.93	10840.59	-0.01%	-0.04%	0.67%	-0.71%	-3.41%
-1	24-Mar-06	96.30	10950.3	1.01%	0.39%	1.30%	-0.91%	-4.32%
0	27-Mar-06	98.49	11079.02	1.18%	2.27%	1.40%	0.87%	-3.45%
1	28-Mar-06	99.77	11086.03	0.06%	1.30%	0.71%	0.59%	-2.86%
2	29-Mar-06	100.82	11183.48	0.88%	1.05%	1.22%	-0.17%	-3.03%
3	30-Mar-06	103.71	11307.04	1.10%	2.87%	1.36%	1.51%	-1.52%

[93] [140]

The Y intercept is ‘0’ and slope β had been 0.61.

Like ACC here too the market had viewed with apprehension of the takeover of a performing domestic player in cement industry by a player from abroad, for which this is a second take over in less than a year’s time. The earlier one was taking over of ACC.

7. ACL announcement of merger with ACRL:

Table 5.56: Acquirer: ACL (ACRL merger):

Event day	**Date**	**Ambuja Rs**	**Sensex Rs**	**Market Returns %**	**Stock Returns %**	**Expected Returns %**	**Abnormal returns %**	**CAR %**
-14	12-May-04	319.11	5358.35					
-13	13-May-04	321.46	5399.47	0.77%	0.74%	0.38%		
-12	14-May-04	311.36	5069.87	-6.10%	-3.14%	-3.42%		
-11	17-May-04	283.01	4505.16	-11.14%	-9.11%	-6.21%		
-10	18-May-04	281.17	4877.02	8.25%	-0.65%	4.53%		
-9	19-May-04	291.67	5006.1	2.65%	3.73%	1.43%		
-8	20-May-04	294.66	4932.11	-1.48%	1.03%	-0.86%		
-7	21-May-04	290.97	4961.57	0.60%	-1.25%	0.29%		
-6	24-May-04	305.24	5123.23	3.26%	4.91%	1.76%		
-5	25-May-04	305.86	5102.22	-0.41%	0.20%	-0.27%		
-4	26-May-04	308.68	5081.95	-0.40%	0.92%	-0.26%		
-3	27-May-04	303.40	5058.55	-0.46%	-1.71%	-0.30%	-1.42%	-1.42%
-2	28-May-04	291.19	4835.39	-4.41%	-4.02%	-2.48%	-1.54%	-2.95%
-1	31-May-04	278.59	4759.62	-1.57%	-4.33%	-0.91%	-3.42%	-6.37%
0	01-Jun-04	288.59	4835.12	1.59%	3.59%	0.84%	2.75%	-3.62%
1	02-Jun-04	294.52	4923.69	1.83%	2.06%	0.97%	1.08%	-2.54%
2	03-Jun-04	289.78	4817.99	-2.15%	-1.61%	-1.23%	-0.38%	-2.92%
3	04-Jun-04	284.81	4889	1.47%	-1.72%	0.78%	-2.49%	-5.41%

[93] [140]

The Y intercept was ‘0’ and slope β had been 0.55.

The merger with a loss making company had not been fully viewed with confidence by the stock market. On the event day there is improvement in pricing and the abnormal return had been positive but over all CAR had been negative.

8. ACC Ltd takeover of EIL:

Table 5.57: Acquirer: ACC (EIL):

Event day	Date	ACC Rs	Sensex Rs	Market Returns %	Stock Returns %	Expected Returns %	Abnormal returns %	CAR %
-14	22-Jan-02	176.06	3368.28					
-13	23-Jan-02	172.39	3373.07	0.14%	-2.08%	0.10%		
-12	24-Jan-02	167.80	3357.79	-0.45%	-2.66%	-2.06%		
-11	25-Jan-02	163.27	3332.3	-0.76%	-2.70%	-3.17%		
-10	28-Jan-02	160.98	3317.64	-0.44%	-1.40%	-2.02%		
-9	29-Jan-02	159.92	3313.28	-0.13%	-0.66%	-0.90%		
-8	30-Jan-02	156.80	3298.79	-0.44%	-1.95%	-2.01%		
-7	31-Jan-02	160.51	3311.03	0.37%	2.37%	0.93%		
-6	01-Feb-02	164.01	3333.92	0.69%	2.18%	2.09%		
-5	04-Feb-02	159.81	3317.01	-0.51%	-2.56%	-2.26%		
-4	05-Feb-02	158.47	3311.73	-0.16%	-0.83%	-1.00%		
-3	06-Feb-02	164.47	3427.39	3.49%	3.78%	12.25%	-8.47%	-8.47%
-2	07-Feb-02	168.97	3436.94	0.28%	2.74%	0.59%	2.15%	-6.32%
-1	08-Feb-02	168.60	3493.92	1.66%	-0.22%	5.59%	-5.81%	-12.14%
0	11-Feb-02	169.86	3515.45	0.62%	0.75%	1.82%	-1.07%	-13.20%
1	12-Feb-02	169.37	3497.68	-0.51%	-0.29%	-2.25%	1.96%	-11.24%
2	13-Feb-02	166.80	3519.87	0.63%	-1.52%	1.88%	-3.40%	-14.64%
3	14-Feb-02	166.19	3557.06	1.06%	-0.36%	3.41%	-3.78%	-18.41%

[93] [139]

The Y intercept had been ‘0’ and slope was 3.62.

Any value of β being more than 1 shows the stock going in line with market at a faster pace. The CAR reflects markets apprehension of the takeover. This is slightly a vertical takeover as EIL uses ACC cement as its raw material for cement fiber sheet manufacturing.

Table 5.58: Target: EIL:

Event day	Date	Everest Rs	Sensex Rs	Market Returns %	Stock Returns %	Expected Returns %	Abnormal returns %	CAR %
-14	22-Jan-02	22.65	3368.28					
-13	23-Jan-02	21.11	3373.07	0.14%	-6.80%	-0.84%		
-12	24-Jan-02	20.72	3357.79	-0.45%	-1.85%	-1.09%		
-11	25-Jan-02	20.42	3332.3	-0.76%	-1.46%	-1.22%		
-10	28-Jan-02	20.24	3317.64	-0.44%	-0.87%	-1.08%		
-9	29-Jan-02	20.35	3313.28	-0.13%	0.51%	-0.96%		
-8	30-Jan-02	20.77	3298.79	-0.44%	2.07%	-1.08%		
-7	31-Jan-02	20.50	3311.03	0.37%	-1.29%	-0.75%		
-6	01-Feb-02	19.98	3333.92	0.69%	-2.56%	-0.61%		
-5	05-Feb-02	20.35	3311.73	-0.67%	1.85%	-1.18%		
-4	06-Feb-02	20.78	3427.39	3.49%	2.14%	0.55%		
-3	07-Feb-02	20.75	3436.94	0.28%	-0.16%	-0.79%	0.62%	0.62%
-2	08-Feb-02	21.02	3493.92	1.66%	1.32%	-0.21%	1.53%	2.15%
-1	11-Feb-02	20.19	3515.45	0.62%	-3.97%	-0.64%	-3.33%	-1.17%
0	12-Feb-02	20.58	3497.68	-0.51%	1.95%	-1.11%	3.07%	1.89%
1	13-Feb-02	21.34	3519.87	0.63%	3.67%	-0.64%	4.31%	6.20%
2	14-Feb-02	22.50	3557.06	1.06%	5.44%	-0.46%	5.90%	12.10%
3	15-Feb-02	24.23	3602.02	1.26%	7.69%	-0.38%	8.07%	20.17%

[93] [141]

The Y intercept had been ‘0’ and β was 0.4.

The CAR had been very good after the event day. Market has welcomed the takeover of this company by ACC though for ACC the CAR had been negative for the event window period.

9. OCL India merger with Dalmia cement (Mehalaya) Ltd:

Table 5.59: Target: OCL India Ltd:

Event day	Date	OCL Rs	Sensex Rs	Market Returns %	Stock Returns %	Expected Returns %	Abnormal returns %	CAR %
-14	10-Sep-07	145.61	15596.83					
-13	11-Sep-07	147.95	15542.77	-0.35%	1.61%	0.48%		
-12	12-Sep-07	147.00	15505.36	-0.24%	-0.64%	0.53%		
-11	13-Sep-07	148.32	15614.44	0.70%	0.90%	1.02%		
-10	14-Sep-07	149.51	15603.8	-0.07%	0.80%	0.62%		
-9	17-Sep-07	148.03	15504.43	-0.64%	-0.99%	0.33%		
-8	18-Sep-07	157.85	15669.12	1.06%	6.64%	1.20%		
-7	19-Sep-07	159.96	16322.75	4.17%	1.34%	2.79%		
-6	20-Sep-07	156.37	16347.95	0.15%	-2.25%	0.74%		
-5	21-Sep-07	160.07	16564.23	1.32%	2.37%	1.33%		
-4	24-Sep-07	161.35	16845.83	1.70%	0.80%	1.53%		
-3	25-Sep-07	156.48	16899.54	0.32%	-3.02%	0.82%	-3.84%	-3.84%
-2	26-Sep-07	158.85	16921.39	0.13%	1.51%	0.72%	0.79%	-3.05%
-1	27-Sep-07	160.69	17150.56	1.35%	1.16%	1.35%	-0.19%	-3.24%
0	28-Sep-07	161.38	17291.1	0.82%	0.43%	1.08%	-0.65%	-3.89%
1	1-Oct-07	160.99	17328.62	0.22%	-0.24%	0.77%	-1.01%	-4.90%
2	3-Oct-07	161.60	17847.04	2.99%	0.38%	2.19%	-1.81%	-6.71%
3	4-Oct-07	160.89	17777.14	-0.39%	-0.44%	0.46%	-0.89%	-7.60%

[93] [142]

The Y intercept was '0' and slope β was 0.51.

Throughout the event period The CAR had been negative reflecting shareholders apprehension on the event.

10. Heidelberg Cements takeover of MyCL:

Table 5.60: Target: MyCL:

Event day	Date	Heidelberg Rs	Sensex Rs	Market Returns %	Stock Returns %	Expected Returns %	Abnormal returns %	CAR %
-14	17-Aug-06	51.17	11477.48					
-13	18-Aug-06	51.41	11465.72	-0.10%	0.46%	0.21%		
-12	21-Aug-06	51.73	11511.68	0.40%	0.63%	0.13%		
-11	22-Aug-06	51.77	11502.62	-0.08%	0.08%	0.21%		
-10	23-Aug-06	52.28	11406.65	-0.83%	0.99%	0.33%		
-9	24-Aug-06	52.66	11531.95	1.10%	0.72%	0.02%		
-8	25-Aug-06	52.71	11572.2	0.35%	0.09%	0.14%		
-7	28-Aug-06	52.50	11619.52	0.41%	-0.40%	0.13%		
-6	29-Aug-06	52.51	11706.85	0.75%	0.02%	0.08%		
-5	30-Aug-06	52.01	11723.92	0.15%	-0.95%	0.17%		
-4	31-Aug-06	52.02	11699.05	-0.21%	0.02%	0.23%		
-3	01-Sep-06	52.67	11778.02	0.68%	1.25%	0.09%	1.16%	1.16%
-2	04-Sep-06	52.81	11914.21	1.16%	0.26%	0.01%	0.24%	1.40%
-1	05-Sep-06	52.79	11904.6	-0.08%	-0.02%	0.21%	-0.23%	1.17%
0	06-Sep-06	53.26	11933.21	0.24%	0.88%	0.16%	0.72%	1.90%
1	07-Sep-06	53.46	11853.85	-0.67%	0.37%	0.30%	0.07%	1.97%
2	08-Sep-06	53.42	11918.65	0.55%	-0.07%	0.11%	-0.18%	1.79%
3	11-Sep-06	53.46	11550.69	-3.09%	0.07%	0.68%	-0.61%	1.18%

[93] [143]

The Y intercept was 0 and slope β was -0.15.

The CAR increase had been positive though the increase is not steep. The takeover had been made by a huge corporate and the market had viewed the target to be benefitted.

11. GIL takeover of SDCCL:

Table: 5.61: Acquirer: GIL:

Event day	Date	Grasim Rs	Sensex Rs	Market Returns %	Stock Returns %	Expected Returns %	Abnormal returns %	CAR %
-14	22-Jun-98	275.92	3078.51					
-13	23-Jun-98	279.02	3037.34	-1.34%	1.12%	-0.26%		
-12	24-Jun-98	287.22	3143.64	3.50%	2.94%	2.56%		
-11	25-Jun-98	290.93	3208.54	2.06%	1.29%	1.72%		
-10	26-Jun-98	307.65	3168.82	-1.24%	5.75%	-0.20%		
-9	29-Jun-98	336.75	3289.56	3.81%	9.46%	2.74%		
-8	30-Jun-98	328.62	3250.69	-1.18%	-2.42%	-0.17%		
-7	01-Jul-98	331.03	3230.6	-0.62%	0.73%	0.16%		
-6	02-Jul-98	332.15	3180.73	-1.54%	0.34%	-0.38%		
-5	03-Jul-98	316.92	3089.02	-2.88%	-4.59%	-1.17%		
-4	06-Jul-98	293.39	3178.31	2.89%	-7.42%	2.21%		
-3	07-Jul-98	303.78	3195.94	0.55%	3.54%	0.84%	2.70%	2.70%
-2	08-Jul-98	214.15	3245.88	1.56%	-29.50%	1.43%	-30.94%	-28.24%
-1	09-Jul-98	296.48	3331.98	2.65%	38.44%	2.07%	36.38%	8.14%
0	10-Jul-98	292.53	3401.74	2.09%	-1.33%	1.74%	-3.07%	5.07%
1	13-Jul-98	295.17	3322.17	-2.34%	0.90%	-0.85%	1.75%	6.81%
2	14-Jul-98	292.25	3371.5	1.48%	-0.99%	1.39%	-2.37%	4.44%
3	15-Jul-98	292.44	3365.72	-0.17%	0.06%	0.42%	-0.35%	4.09%

[93] [137]

The Y intercept was ‘0’ and slope β was 0.58.

Post event there had been fall in share price and returns but one day before the increase was very good which makes CAR remain positive. This is a case of takeover of sick company strategically as the asset base is good and helps extra geographical area for GIL.

12. ICL takeover and merger with RCL:

Table 5.62: Acquirer: ICL:

Event day	Date	ICL Rs	Sensex Rs	Market Returns %	Stock Returns %	Expected Returns %	Abnormal returns %	CAR %
-14	04-Feb-98	60.00	3319.19					
-13	06-Feb-98	57.25	3366.7	1.43%	-4.58%	-0.69%		
-12	09-Feb-98	53.00	3348.35	-0.55%	-7.42%	-1.09%		
-11	10-Feb-98	54.00	3317.7	-0.92%	1.89%	-1.17%		
-10	11-Feb-98	53.60	3292.91	-0.75%	-0.74%	-1.14%		
-9	12-Feb-98	54.85	3293.89	0.03%	2.33%	-0.98%		
-8	13-Feb-98	55.00	3373.53	2.42%	0.27%	-0.49%		
-7	16-Feb-98	55.00	3449.77	2.26%	0.00%	-0.53%		
-6	17-Feb-98	55.00	3413.36	-1.06%	0.00%	-1.20%		
-5	18-Feb-98	53.50	3401.88	-0.34%	-2.73%	-1.05%		
-4	19-Feb-98	54.50	3437.64	1.05%	1.87%	-0.77%		
-3	20-Feb-98	55.50	3417.3	-0.59%	1.83%	-1.10%	2.94%	2.94%
-2	23-Feb-98	55.50	3478.4	1.79%	0.00%	-0.62%	0.62%	3.56%
-1	24-Feb-98	54.45	3484.69	0.18%	-1.89%	-0.95%	-0.94%	2.62%
0	26-Feb-98	55.90	3571.63	2.49%	2.66%	-0.48%	3.14%	5.76%
1	27-Feb-98	61.40	3622.22	1.42%	9.84%	-0.70%	10.54%	16.29%
2	02-Mar-98	57.65	3772.61	4.15%	-6.11%	-0.14%	-5.97%	10.33%
3	03-Mar-98	51.90	3646	-3.36%	-9.97%	-1.67%	-8.31%	2.02%

[93] [144]

The Y intercept was ‘0’ and slope β was 0.2.

The event day and the next day saw very good returns but after that there had been decline. On the event day and the next day there has been an instinctive positive reaction for the acquirer. This is a case of a strong player in South India further strengthening the position by taking over a popular brand in some Andra Pradesh, namely 'Raasi Cement'.

13. L&T takeover of NCL:

Table 5.63: Acquirer: L&T:

Event day	Date	L&T Rs	Sensex Rs	Market Returns %	Stock Returns %	Expected Returns %	Abnormal returns %	CAR %
-14	21-Dec-98	148.30	2973.37					
-13	22-Dec-98	148.14	2976.58	0.11%	-0.10%	0.59%		
-12	23-Dec-98	152.32	2962.5	-0.47%	2.82%	-0.16%		
-11	24-Dec-98	150.84	2963.45	0.03%	-0.97%	0.49%		
-10	28-Dec-98	156.65	3054.73	3.08%	3.85%	4.44%		
-9	29-Dec-98	158.54	3046.29	-0.28%	1.20%	0.10%		
-8	30-Dec-98	166.92	3110.33	2.10%	5.29%	3.17%		
-7	31-Dec-98	164.14	3055.41	-1.77%	-1.66%	-1.83%		
-6	01-Jan-99	160.87	3060.34	0.16%	-1.99%	0.66%		
-5	04-Jan-99	166.87	3122.04	2.02%	3.73%	3.06%		
-4	05-Jan-99	166.78	3149.06	0.87%	-0.06%	1.57%		
-3	06-Jan-99	170.24	3205.68	1.80%	2.08%	2.78%	-0.70%	-0.70%
-2	07-Jan-99	178.37	3299.09	2.91%	4.77%	4.22%	0.55%	-0.15%
-1	08-Jan-99	193.81	3397.84	2.99%	8.66%	4.33%	4.33%	4.18%
0	11-Jan-99	203.03	3433.21	1.04%	4.76%	1.80%	2.96%	7.14%
1	12-Jan-99	196.24	3353.22	-2.33%	-3.35%	-2.56%	-0.78%	6.35%
2	13-Jan-99	195.23	3310.46	-1.28%	-0.51%	-1.20%	0.68%	7.04%
3	14-Jan-99	188.99	3292.28	-0.55%	-3.20%	-0.26%	-2.94%	4.09%

[93] [138]

The Y intercept was 1 and slope β was 1.29.

Here on the event day there was increase in returns but later it fluctuates. The overall CAR at the end of the period is positive. This was also a strategic takeover of L&T for market expansion in Gujarat region with the takeover of a company which was not financially in a very healthy position but having assets which can be made use of L&T.

14. Cimpor De Portugal takeover of SDCCL:

Table 5.64: Target: SDCCL:

Event day	Date	SDCCL Rs	Sensex Rs	Market Returns %	Stock Returns %	Expected Returns %	Abnormal returns %	CAR %
-14	10-Jan-08	39.24	20582.08					
-13	11-Jan-08	38.78	20827.45	1.19%	-1.18%	1.43%		
-12	14-Jan-08	39.73	20728.05	-0.48%	2.46%	-0.08%		
-11	15-Jan-08	39.58	20251.09	-2.30%	-0.38%	-1.73%		
-10	16-Jan-08	38.53	19868.11	-1.89%	-2.67%	-1.36%		
-9	17-Jan-08	38.70	19700.82	-0.84%	0.44%	-0.41%		
-8	18-Jan-08	38.21	19013.7	-3.49%	-1.25%	-2.80%		
-7	21-Jan-08	36.36	17605.35	-7.41%	-4.84%	-6.34%		
-6	22-Jan-08	32.84	16729.94	-4.97%	-9.68%	-4.14%		
-5	23-Jan-08	34.41	17594.07	5.17%	4.77%	5.02%		
-4	24-Jan-08	34.53	17221.74	-2.12%	0.36%	-1.56%		
-3	25-Jan-08	33.66	18361.66	6.62%	-2.52%	6.34%	-8.86%	-8.86%
-2	28-Jan-08	34.81	18152.78	-1.14%	3.40%	-0.67%	4.07%	-4.79%
-1	29-Jan-08	36.99	18091.94	-0.34%	6.27%	0.05%	6.22%	1.43%
0	30-Jan-08	38.72	17758.64	-1.84%	4.69%	-1.31%	6.00%	7.42%
1	31-Jan-08	38.36	17648.71	-0.62%	-0.94%	-0.21%	-0.74%	6.69%
2	01-Feb-08	38.29	18242.58	3.36%	-0.18%	3.40%	-3.57%	3.11%
3	04-Feb-08	38.51	18660.32	2.29%	0.59%	2.42%	-1.83%	1.28%

[93] [145]

The Y intercept was ‘0’ and slope β was 0.9.

The struggling company taken over by a player from abroad had witnessed slight upward movement before the event but later the price had remained stagnant post event and hence the returns had come down. The market had shown improvement in the period.

15. ACL Takeover of ACEL:

Table 5.65: Acquirer: ACL (ACEL):

Event day	Date	Ambuja Rs	Sensex Rs	Market Returns %	Stock Returns %	Expected Returns %	Abnormal returns %	CAR %
-14	25-Jan-01	182.20	4330.22					
-13	29-Jan-01	191.61	4234.57	-2.21%	5.16%	-0.77%		
-12	30-Jan-01	191.46	4372.04	3.25%	-0.08%	3.62%		
-11	31-Jan-01	192.65	4326.72	-1.04%	0.63%	0.17%		
-10	01-Feb-01	186.47	4286.11	-0.94%	-3.21%	0.25%		
-9	02-Feb-01	190.97	4352.26	1.54%	2.41%	2.25%		
-8	05-Feb-01	204.09	4370.47	0.42%	6.87%	1.34%		
-7	06-Feb-01	211.18	4375.29	0.11%	3.47%	1.09%		
-6	07-Feb-01	207.54	4312.93	-1.43%	-1.72%	-0.14%		
-5	08-Feb-01	213.23	4381.19	1.58%	2.74%	2.28%		
-4	09-Feb-01	209.12	4397.33	0.37%	-1.93%	1.30%		
-3	12-Feb-01	208.31	4406.3	0.20%	-0.38%	1.17%	-1.55%	-1.55%
-2	13-Feb-01	198.43	4363.05	-0.98%	-4.74%	0.22%	-4.96%	-6.51%
-1	14-Feb-01	196.91	4363.11	0.00%	-0.77%	1.01%	-1.77%	-8.28%
0	15-Feb-01	203.07	4437.99	1.72%	3.13%	2.38%	0.74%	-7.54%
1	16-Feb-01	198.04	4330.32	-2.43%	-2.48%	-0.95%	-1.53%	-9.07%
2	19-Feb-01	194.00	4350.65	0.47%	-2.04%	1.38%	-3.42%	-12.49%
3	20-Feb-01	203.05	4359.22	0.20%	4.66%	1.16%	3.50%	-8.99%

[93] [140]

The Y intercept was ‘0.1’ and slope β was 0.8.

The CAR for the event window period had been negative. Before the event day there was decline in prices but on the event day there was slight upwards trend but overall the takeover of the ailing firm though strategically done by ACL had the investors’ apprehensions.

5.3.1. ANOVA Analysis of CAR values for cement sector:

Table 5.66: Anova values of Cement sector acquirers:

ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	0.01987	6	0.003312	1.329592	0.260152	2.271989
Acquirers	0.203044	9	0.02256	9.057899	3.46E-08	2.05852
Error	0.134497	54	0.002491			
Total	0.35741	69				

[136]

Table 5.67: Anova values of Cement sector targets:

ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	0.051039	6	0.008507	1.738882	0.140131	2.363751
Columns	0.133958	6	0.022326	4.563891	0.00154	2.363751
Error	0.176111	36	0.004892			
Total	0.361108	48				

[136]

5.4. Findings:

5.4.1. Non Cement sector:

Event Study:

Across industries in India the CAR values at the end of the event window, for both acquirers and respective target firms, are case specific and do not have general pattern.

When the cases are taken as each pair, as an acquirer and target, for analysis the following points are inferred.

On the event day, i.e., ‘0’, on 7 cases both acquiring and target firms are seen to have drop in CAR. The cases are namely ‘RSWM-Cheslind’, ‘Ranbaxy-Zenotech’, ‘M&M-Swaraj’, ‘Dabur-Femcare’, ‘Con.Sec-Asian oil’, ‘Apar-Uniflex’, ‘AB nuvo-Apollo’.

On the event day on 12 cases the acquiring firms are seen to have a fall in CAR, namely, ‘RSWM’, ‘Ranbaxy’, ‘M&M’, ‘IPCA’, ‘Ind.Inv.’, ‘Idea’, ‘Dabur’, ‘Con.Sec.’, ‘Can. Bank’, ‘ Baj.Hind.’, ‘Apar’, ‘AB Nuvo’.

On the event day on 7 cases the target firms are seen to have a fall in CAR. The firms are the same as the ones who had decline along with acquirers.

On the event day on 8 cases both acquiring and target firms are seen to have improvement in CAR. The pairs are namely, ‘Westcoast-RNPrint’, ‘Spentex-Amit’, ‘Rel.cap-TV Today’, ‘Kalpataru-JMC’, ‘IVRCL-H.Dorr’, ‘HB Stk-DCM’, ‘Emami-Zandu’, ‘Con.Sec-M.Pic’, “Tel 18- Info”.

On all the occasions when there had been improvement in CAR on the event day for the acquirer the target firm has also had Improvement in CAR.

Overall it is seen that CAR changes for a firm are bound to happen on case to case basis and there is no fixed pattern across industries. Depending on context involved the CAR changes are bound to take place. One significant finding is that when there is positive perception of acquirer on the event day of merger or takeover announcement the target firm also is viewed positively

and the CAR improvement reflect investors viewing the deal as win-win for both, acquiring and target firms.

5.4.2. Cement sector:

The events results show that the cement market is maturing. In cases where there were apprehensions involved the CAR had been negative. For example in ACC takeover by Holcim and ACL take over by Holcim, both are performing players taken over by a global giant 'Holcim'. When ACC merged with two subsidiaries Bargarh and Damodhar in the same year, the results have reflected negative returns. ACC is a performing company and both these subsidiaries were taken over by ACC when they were struggling. In case of Heidelberg, another global player taking over Mysore cement and Cimpor, a multinational, taking over SDCCL the CAR had been good. Both these companies were struggling for survival and a multinational taking over had been appreciated by the stock market. When ACC took over a struggling firm Bargarh strategically it was welcome by the market with positive returns.

The reactions show the market being matured and reacting analytically and not following blindly with a trend.

5.4.3. Findings with the ANOVA:

The fact that between firms in case of both acquirers and targets the variation in CAR is significant reflects the reactions and returns are case specific and there is no general pattern towards the event like M&A's. The reactions are based on the informations, calculations and speculations by the share market on a case to case basis and hence both, when sample was taken across industries and in the cement sector, the difference are significant between firms.

The fact that between the event days for both the acquirers and the targets the variation is 'insignificant' reflects the maturity that Indian stock market has attained. Once a reading is made the behavioural pattern difference is not much with in the event window period which substantiates the maturity by way of case specific reaction by the stockholders. The specific points that come to light can be presented as follows.

1. There is significant variance in values of CAR's between acquirers in the non cement sector. The 'F' value of 18.9 is far above critical value and the p value '0'.

2. There is significant variation in values of CAR's between target firms in the non cement sector. The 'F' value of 15.9 is far above critical value and the p value '0'.
3. There is significant variation in values of CAR's between acquirers in the cement sector. The 'F' value of 9.05 is far above critical value and the p value '0'.
4. There is significant variation in values of CAR's between target firms in the cement sector. The 'F' value of 4.5 is above critical value and the p value '0'.
5. Within the 'event window' the difference is 'not Significant' in the cement sector for both, acquirers and the targets.
6. In the non cement sector also this observation, within the 'event window', is similar.
7. Since the CAR difference between firms is 'Significant', it reflects that the reactions of the investors is case specific, both among the cement sector and when samples taken across sectors. There is no set pattern for acquirers or the targets in both cement sector and for sample group across sectors.
8. All these reflect Indian stock market maturity in reacting as per the cases and not with general apprehension or assumptions.

After the reaction of share prices and its returns, the financial and operational analysis has been worked in the next chapter.

Chapter-VI

Analysis and Interpretation of Financial and Operational Parameters

Based on the financial and operational parameters taken for analysis, the performances of the sample cases have been worked out. First the financial parameters and value addition parameters for the shareholders have been studied and as the next step the operational parameters have been taken up. Then the composite performance, by combining the financial and operational parameters, during the period has been studied. For the study, the data of three years prior to the event year has been taken for pre-event performance. The data of the year of event and the subsequent two years has been taken for post event performance.

The comparison of both financial and operational parameters has been done company wise and then taking entire sample lot, in two stages as below.

1. First stage is the comparison of the mean values of the respective parameters between the pre event period and the post event period.
2. M&A activity involves taking up resources and improving profitability in multiple ways and one important way is gaining synergy with the resources. Since cement manufacturing is a process of many steps and market management, the betterment in performance in the post event period has been studied between first year of the event and the third year after the event. The improvement in the three years can be a real indicator of direction in which the M&A deal is progressing.

6.1. Financial parameters:

6.1.1. Company wise financial performances:

1. DCBL merger with DSL:

Table 6.1: Financial parameters of DCBL:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Merger	2006-07	2003-04	Dalmia cement+ Sugar business	21	7	0.81	13
		2004-05		16	7	1.39	10
		2005-06		17	13	1.6	10
		2006-07		27	20	1.35	20
		2007-08		33	21	1.38	21
		2008-09		30	9	1.84	16

Source: Annual reports of DCBL

Table 6.1: DCBL merged with its sugar division in the year 2006-07. The primary motive had been capital reconstruction of the company. OPM has increased sharply post event though there is a slight drop on the third year. NPM saw immediate increase post event but in the third year there had been a steep fall. ROCE had been improving though had experienced fall on the third year post event. Just prior to event year, the D/E ratio had been 1.6 had increased to 1.84 by the third year after the event. When companies merge with a motive of capital reconstruction, one of the benefits seen is getting debts at lesser rate of interest utilizing the capital restructuring. So from this point of view the increased debt is understandable due to factory expansion. Overall financially there have been positive signs but on the third year, 2008-09, there had been fall in the parameters [146] [147] [148] [149].

2. ZCL takeover of SVCL:

Table 6.2: Financial parameters of SVCL:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Takeover	2001-02	1998-99	Sri Vishnu cements ltd	12	1	2.81	30
		1999-00		6	-7	7.12	12
		2000-01		16	6	4.66	27
		2001-02		12	0	7.7	36
		2002-03		2	-13	1.95	4
		2003-04		9	-8	3.99	18

Source: Annual reports of SVCL

Table 6.2: SVCL has got OPM, NPM and ROCE declined post event. Prior to the sale of the company, in year 1999-00, the firm had experienced negative returns after which recovered and had again faced decline post event. Financially the takeover had not turned around positive for the target company [150] [151] [152] [153]. From the results seen in the company, lack of increase in revenues had been a stumbling block. The revenue movement between the periods 1998-99 to 2003-04 had been (Rs. Crores) 145, 137, 143, 123, 120, 132. While the expenses had increased the same could not be passed on to the customers to retain margins.

Table 6.3: Financial parameters of ZCL:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Takeover	2001-02	1998-99	Zuari cements ltd	13	2	1.56	11
		1999-00		12	-2	1.79	21
		2000-01		19	-13	1.16	8
		2001-02		20	-4	0.9	9
		2002-03		6	-25	0.53	2
		2003-04		11	-9	0.56	4

Source: Annual reports of ZCL

Table 6.3: On the third year post event there has been improvement in the financial parameters. The OPM and ROCE have increased and the negative level of NPM had come down. In Post event period there had been improvement in D/E ratio, getting reduced to less than ‘1’. Prior to event itself the NPM had been negative and has shown improvement on third year. ROCE,

though has improved in third year has shown decline post event in comparison to pre event levels [154] [155] [156] [157] [158]. Except for D/E other parameters have declined post event.

3. Heidelberg takeover of Mysore Cements Ltd:

Table 6.4: Financial parameters of MyCL:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Takeover	2006	2003-04	Heidelberg cement India ltd	6	-11	12.97	10
		2004-05		9	-6	26.31	19
		2005-06		-7	-21	-4.71	-24
		2006*		15	-1	0	37
		2007		19	16	0	54
		2008		17	17	0.02	35

Source: Annual reports of MyCL; *-9 months period (Apr-Dec).

Table 6.4: This is a case of global player taking over a domestic cement company. Heidelberg is a global player and after its takeover, the domestic company MyCL has turned around from having negative returns to positive returns. The firm carried out losses reflected by negative D/E changing to positive levels. The OPM, NPM, ROCE all have shown improvements. Takeover has been excellent for the company financially [159] [160] [161] [162] [163].

4. L&T takeover of NCL:

Table 6.5: Financial parameters of NCL:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Takeover by L&T	1999-2000	1996-97	Narmada cement ltd	12	6	0.54	34
		1997-98		2	-3	0.99	5
		1998-99		-7	-21	2.14	-13
		1999-2000		1	-10	2.14	2
		2000-01		3	-8	1.51	7
		2001-02		4	-7	1.43	13

Source: Annual reports of NCL

Table 6.5: NCL had shown improvement in all aspects of OPM, NPM, D/E and ROCE post event. L&T the acquirer had been an all India player and the takeover had benefitted the target company. The NPM though negative has shown progressive improvement post event. The target

company though not financially healthy has turned from negative returns to positive returns and the signs are on the progressive side [164] [165] [166] [167].

Table 6.6: Financial parameters of L&T:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Takeover of NCL	1999-2000	1996-97	Larsen &Toubro Ltd	14	8	0.64	24
		1997-98		15	9	0.82	21
		1998-99		16	6	0.91	25
		1999-2000		11	5	1.03	15
		2000-01		13	4	1.07	18
		2001-02		13	4	1.06	28

Source: Annual reports of L&T

Table 6.6: The all India player had cement as one of its core divisions in late nineties. After the liberalization and opening up of the cement sector had showed regular progress in the industry. The takeover of another company in the cement sector had been strategically done and financial performance post event had been good with ROCE. In three years post event the NPM has been lower than pre event levels but had been positive. D/E is just around ‘1’, which is not a danger. OPM is also at a lesser level than the pre event standards, but L&T being a corporate had problems from other divisions, as cement was averaging only 35% of the companies income [168] [169] [170].

5. Holcim ltd takeover of ACC:

Table 6.7: Financial parameters of ACC:

Type	Event year	Year	Company	OPM%	NPM%	D/E ratio	ROCE %
Take over	2005-06	2002-03	ACC Ltd	13.5	3.64	1.3	18.42
		2003-04		15.9	6.09	1	23.51
		2004-05		17.27	9.69	0.88	28.32
		2005-06*		31.18	19.66	0.4	53.72
		2007		33.89	20.57	0.07	92.21
		2008		28.31	16.58	0.1	68.87
***- 18 months**							

Source: Annual reports of ACC

Table 6.7: ACC has shown marked improvement financially in all the parameters. As one of the four companies with pan India presence having close to 10% of the all India market share the good performance post event is a good sign for the industry in the country. Post event the financial year had been changed from April-Mar to Jan-Dec as followed by Holcim Ltd at global level. Holcim is a global leader who entered India with takeover of ACC and ACL. The success of such a takeover can be expected to set a trend and boost the confidence for other MNC's from abroad and also for making Indian domestic players improvement of their standards and going across the border for expansions. During the period ACC also merged two of its subsidiaries namely Damodhar Cement and Bargarh Cement [171] [172] [173] [174] [175] [176].

6. Holcim ltd takeover of ACL:

Table 6.8: Financial parameters of ACL:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Take over	2005-06	2002-03	Ambuja Cements Ltd	29	13	0.56	15
		2003-04		32	17	0.63	19
		2004-05		31	18	0.52	24
		2005-06*		36	24	0.25	56
		2007		54	31	0.07	72
		2008		36	22	0.05	46
***- 18 months**							

Source: Annual reports of ACL

Table 6.8: Similar to ACC, ACL also after the takeover by Holcim had shown remarkable improvement in performance in all the financial parameters. ACC and ACL put together have close to 20% of the country's production share and as major players their good performance is a good sign for the industry in the country [177] [178] [179] [180] [181].

7. GIL takeover of SDCCL:

Table 6.9: Financial parameters of SDCCL:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Takeover by GIL	1998-99	1995-96	Shree Digvijay cement co ltd (target)	9	1	1.09	14
		1996-97		5	-4	1.37	12
		1997-98		0	9	2.99	1
		1998-99		-13	-30	-1.88	-34
		1999-2000		6	-17	-1.85	200
		2000-01		8	-18	-1.48	-31

Source: Annual reports of SDCCL

Table 6.9: SDCCL after suffering from losses had been referred to Board for Industrial Financial Reconstruction (BIFR). Grasim had taken over the company to make use of the assets, further to its plans of increasing its presence as a major cement player in the country. This was expected to be a win-win deal as a sick company will also get benefitted due to takeover by a big player. The OPM had shown improvement towards positive side while there had been progress in NPM over the first year post takeover. The ROCE, post event has shown extreme fluctuations due to the capital employed becoming extremely low further to the losses getting carried on the balance sheet. The losses were making the 'capital employed' switch from negative to very low positive levels giving such extreme readings. The positive signs are; the OPM had improved from being negative at the time of takeover, NPM had shown recovery direction by reduction in the negative levels. The D/E shows negativity because of loss of previous years eroding the reserves [182] [183] [184] [185].

Table 6.10: Financial parameters of GIL:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Takeover of SDCCL	1998-99	1995-96	Grasim Industries Ltd (Acquirer)	28	12	0.99	22
		1996-97		23	9	0.96	18
		1997-98		20	7	0.91	17
		1998-99		18	4	0.92	15
		1999-2000		18	5	0.76	17
		2000-01		19	8	0.57	22

Source: Annual reports of Grasim

Table 6.10: GIL with its plan of improving its presence as a major cement player with takeover of SDCCL and a mini plant in Tamilnadu by way of Dharani Cement Ltd in the same year of

1998-99 has shown progress in all the financial parameters in the third year after the event in comparison to the first two years after the event, which is a very good sign [186] [187] [188] [189] [190].

8. ICL takeover and merger of RCL:

Table 6.11: Financial parameters of ICL and RCL:

Type	Event year	Year	Company	OPM %	NPM %	D/E	ROCE %
Takeover and merger	1998-99	1995-96	India cements ltd + Raasi cement ltd	22	12	0.79	25
		1996-97		24	11	1.12	20
		1997-98		26	8	2.11	15
		1998-99		26	7	2.04	17
		1999-00		23	4	2.03	13
		2000-01		25	4	2.24	14

Source: Annual Reports of ICL and RCL

Table 6.11: ICL after takeover of RCL immediately merged the target with the parent firm. ICL is major player in southern part of India and with the takeover it had motive of increasing its base in South India. With the takeover the D/E had increased but OPM is healthy. ROCE had been nearly stagnant in the post event period and the NPM had declined due to debt costs which is an area of concern [80] [191] [192] [193] [194] [195].

9. GIL takeover of cement division of L&T:

Table 6.12: Financial parameters of UTCL:

Type	Event year	Year		OPM %	NPM %	D/E	ROCE %
Takeover by GIL	2004-05	2001-02	Ultratech cement ltd	13	4	1.06	28
		2002-03		10	5	0.89	34
		2003-04		17	2	1.52	13
		2004-05		11	0	1.43	11
		2005-06		18	7	1.4	24
		2006-07		30	16	0.9	47

Source: Annual reports of UTCL, L&T

Table 6.12: UTCL which was cement division of L&T before takeover has improved post event in all the parameters. In all the years there had been progress across the parameters. One

limitation however is the fact that before event the figures are of L&T as a whole company and after the event the cement division had been a separate company named as Ultratech cement ltd. The figures of L&T's cement division alone for all the financial parameters are not presented by the company [196] [197] [198] [199] [200] [201].

Table 6.13: Financial parameters of GIL:

Type	Event year			OPM %	NPM %	D/E	ROCE %
Takeover of L&T	2004-05	2001-02	Grasim industries ltd	18	7	0.76	17
		2002-03		20	8	0.7	19
		2003-04		29	15	0.57	28
		2004-05		29	14	0.46	31
		2005-06		24	13	0.4	26
		2006-07		31	18	0.47	32

Source: GIL annual reports

Table 6.13: Similar to the target company, the acquirer had also improved in performances across all parameters. Since UTCL and GIL together account for 20% of the country's market share the improvement is a significant development for the industry [202] [203] [204] [205] [206].

10. ACL takeover and merger of ACRL:

Table 6.14: Financial parameters of ACL and ACRL:

Type	Event year			OPM %	NPM %	D/E	ROCE %
Takeover and Merger	2004-05	2001-02	Ambuja cement ltd + Ambuja cement Rajastan ltd	35	13	1.1	14
		2002-03		32	13	1.1	17
		2003-04		34	17	0.6	20
		2004-05		31	18	0.5	24
		2005-06		28	18	0.5	16
		2006-07		34	21	0.25	50

Source: Annual reports of ACL, ACRL

Table 6.14: Ambuja Cement Rajastan ltd was taken over and merged with ACL, one of the major Indian players. The performance has been very good in the entire financial parameters post event which is a very good boost for the industry [177] [178] [179] [180] [207] [208] [209].

11. Amalgamation of divisions of cement, steel and real estate with parent company JAL:

Table 6.15: Financial parameters of JAL:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Amalgamation	08'-09	05'-06	Jaiprakash associates ltd	31	17	1.57	20
		06'-07		29	12	1.91	16
		07'-08		32	14	1.81	14
		08'-09		34	15	1.96	13
		09'-10		33	15	2.11	18

Source: JAL Annual reports

Table 6.15: In this case only two years have gone across post event at the time of study and hence data is for two years, post event. In this case capital restructuring had been one of the motives for the amalgamation. Jaiprakash Associates Ltd had been an engineering conglomerate and had presence in steel, cement and real estate as well. In 2008-09 the board had approved of the amalgamation of all the three to the parent company. There is improvement in performance in all the parameters except D/E which had been close to 2 and had crossed 2 during the year of amalgamation. The management had taken the decision with a long term point of view based on capacity additions planned [210] [211] [212] [213] [214].

12. Cimpor de Portugal takeover of SDCCL:

Table 6.16: Financial parameters of SDCCL:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Takeover by Cimpor	07'-08	04'-05	Shee Digvijay cement co ltd	2	-11	30.44	600
		05'-06		28	23	24.8	311
		06'-07		24	21	0.52	84
		07'-08		-3	-6	0.7	-8
		08'-09		13	7	0.44	21
		09'-10(Ap-Dec)		17	14	0.01	38

Source: SDCCL annual reports

Table 6.16: Cimpor De Portugese is a multinational player who has entered India recently. Post event the signs are positive financially in different parameters. The OPM and NPM which had been negative had turned around subsequently. The debts also had got turn around coming less

than 1 from very high pre event levels. SDCCL had been taken over by GIL ten years earlier and got sold off to the global player in 2007-08. The ROCE is seen to be abnormally high during pre event due to the 'capital employed' getting reduced due to the loss getting adjusted in the balance sheet. Due to this abnormality, the post event performance of ROCE has to be judged without comparing it with pre event levels. The return of 38% in ROCE in third year is a good healthy sign of the event being successful [215] [216] [217] [218].

13. OCL India merger with Dalmia cement (Mehalaya) ltd:

Table 6.17: Financial parameters of OCLIL:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Takeover	07'-08	04'-05	OCL India Ltd	15	6	1.93	15
		05'-06		16	6	1.86	16
		06'-07		22	10	1.15	23
		07'-08		30	15	0.9	25
		08'-09		24	10	1.08	22
		09'-10		31	12	1.04	29

Source: Annual reports of OCLIL

Table 6.17: reflects good improvement in OPM and ROCE. The NPM is positive though the percentage has come down when compared to first year of the event. Dalmia Cement (Mehalaya) was a unit of Dlamia Cement (Bharat) ltd which started operations in mid 2006-07. This new unit got merged with OCL India of Orrisa. The company has reported expansion plans in near future and with aim of becoming one of the main regional players had undertaken the acquisition [219] [220] [221] [222] [223]. Overall effective improvement is visible.

14. ACL takeover of ACEL:

Table 6.18: Financial parameters of ACEL:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Take over	1997-98	1994-95 (n.a)	Ambuja cement eastern ltd	n.a	n.a	n.a	n.a
		1995-96		10	-20	-2.73	10
		1996-97		-11	-60	-1.54	-23
		1997-98		-32	-54	5	-75
		1998-99		11	1	4.65	41
		1999-2000		8	-19	-22.02	24

Source: Annual reports of ACEL

Table 6.18: ACEL was a financially ailing company taken over by a leading player of the industry, namely, ACL. There are signs of turn around with OPM and ROCE turning positive. The NPM had been positive in second year post event though had fallen apart next year. The debt level had been bad and the losses carried forward had affected the same. Overall the financially sick company had not fully recovered within the three year period post event [224] [225] [226] [227].

Table 6.19: Financial parameters of ACL:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Take over	1997-98	1994-95	Ambuja Cement Ltd	37	23	1.54	13
		1995-96		41	23	0.76	19
		1996-97		36	17	0.97	16
		1997-98		36	13	0.99	17
		1998-99		36	14	0.69	21
		1999-2000		61	38	0.78	27

Source: Annual reports of ACL

Table 6.19: ACL's financial performance had improved in all aspects post event. The primary objective of the takeover was market entry in additional areas of the country as the company has plans of becoming a national player in near future [228] [229] [230] [231].

15. ACC takeover of EIL:

Table 6.20: Financial parameters of EIL:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Takeover	02'-03	99'-00	Everest Industries Ltd	9	4	0.25	19
		00'-01		9	3	0.25	5
		01'-02		4	-2	0.18	5
		02'-03		11	5	0.16	28
		03'-04		13	4	0.02	37
		04'-05		15	8	0.1	39

Source: Annual reports of EIL

Table 6.20: As a 'fiber cement' sheet player, after being taken over by an all India cement player who produces one of the raw materials, has shown improvement in all financial aspects post event. Apart from the source of supply the benefit was the use of the image of All India player for improved performance and the result had been positive [232] [233] [234] [235].

Table 6.21: Financial parameters of ACC:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Takeover	02'-03	99'-00	ACC Ltd	8	-2	1.27	11
		00'-01		12	2	1.44	16
		01'-02		14	4	1.48	20
		02'-03		14	4	1.3	18
		03'-04		16	6	1	24
		04'-05		17	10	0.88	28

Source: Annual reports ACC

Table 6.21: ACC the acquirer has also shown remarkable performance post event in all the financial aspects under consideration. OPM, NPM, ROCE had improved while in spite of takeover the D/E has come down to less than '1' [171] [172] [173] [236] [237].

16. Italcementi takeover of ZCL:

Table 6.22: Financial parameters of ZCL:

Type	Event year	Year	Company	OPM %	NPM %	D/E ratio	ROCE %
Take over	2006	2003-04	Zuari cement Ltd	10	-9	0.56	4
		2004-05		10	-6	0.57	4
		2005-06		13	6	0.26	19
		2006(Ap-Dec)		26	16	0.25	17
		2007		37	18	0.2	25
		2008		34	17	0.25	23

Source: Annual reports of ZCL and Italcementi

Table 6.22: Italcementi of Italy is one of the top '5' global players, and has entered India in southern region. In 2005 the company had taken control of the management although they had entered the scheme earlier around the year 2000. There had been excellent improvement in the entire parameters post event. The change in management control had paid off well [158] [238] [239] [240] [241].

6.1.2. OPM Comparison between Pre event and Post event means:

From the data taken above, comparison is done between the mean values of OPM's in the pre event period with that of the post event period, for testing the hypothesis.

Table 6.23: 'OPM' mean comparison between Pre event and Post event (%):

Combination	Category	Firm	OPM Pre event Mean	OPM Post event Mean
DCBL+DSL	Merged entity	DCBL+DSL	18.1	30.0
With ZCL	Target	SVCL	11.0	7.8
With SVCL	Acquirer	ZCL	14.5	12.2
With Heidelberg	Target	MyCL	2.9	17.4
With L&T	Target	NCL	2.4	2.7
With NCL	Acquirer	L&T	15.0	12.3
With Holcim	Target	ACC	15.6	31.1
With Holcim	Target	ACL	30.7	41.9
With GIL	Target	SDCCL	4.6	0.3
With SDCCL	Acquirer	GIL	23.6	18.2
With ACEL	Acquirer	ACL	38.0	44.4
ICL+ RCL	Merged entity	ICL+RCL	23.9	24.9
With GIL	Target	L&T/UTCL	13.4	19.7
With L&T	Acquirer	GIL	22.3	27.9
With ACRL	Acquirer	ACL	33.4	31.1
Amalgamation	Merged entity	JAL	31.0	33.5
With Cimphor	Target	SDCCL	17.7	9.0
With Dalmia(M)	Target	OCLIL	17.5	28.2
With ACL	Target	ACEL	-0.3	-4.4
With EIL	Acquirer	ACC	11.3	15.6
With ACC	Target	EIL	7.5	13.2
With Italcementi	Target	ZCL	11.3	32.0
Average			16.6	20.4
t' Value	2.3	Critical Value	2.08	
P-Value	0.03	Result	**SIG**	

Table 6.23: shows there has been an overall increase in the OPM in post event period over pre event period, and the change is significant. The overall average of all the 22 companies involved in 16 event of merger or acquisitions has move from 16.6% pre event to 20.4% post event. A 3% increase in OPM can be considered good for the industry and is significant improvement. It can

be noticed that 14 of the 22 cases showed increase in OPM, post event over pre event. The biggest ones of the deals, which are also some of the biggest seen in the country across sectors, namely L&T and GIL, ACC with Holcim, ACL with Holcim have shown increase in OPM post event. Considering the fact that these four companies controlled by two groups have 40% of the Indian cement industries share, one can infer that the change is a positive one in the industry. The hypothesis needs to be rejected and there are good signs for the industry. Comparison between 1st year and 3rd year post event has also been done to get additional information.

6.1.3. NPM Comparison between Pre event and Post event means:

From the data analyzed earlier, the comparison between the mean NPM in the pre event period has been compared with the mean NPM in post event period for testing the hypothesis.

NPM:

NPM study for the M&A cases comparing pre event mean and post event mean:

Table 6.24: 'NPM' mean comparison between Pre event and Post event (%):

Combination	Category	Firm	NPM Pre event Mean	NPM Post event Mean
DCBL+DSL	Merged entity	DCBL+DSL	8.9	16.7
With ZCL	Target	SVCL	0.1	-6.9
With SVCL	Acquirer	ZCL	-4.5	-12.9
With Heidelberg	Target	MyCL	-12.8	10.8
With L&T	Target	NCL	-5.7	-8.3
With NCL	Acquirer	L&T	7.7	4.3
With Holcim	Target	ACC	6.5	18.9
With Holcim	Target	ACL	16.0	26.0
With GIL	Target	SDCCL	2.2	-21.7
With SDCCL	Acquirer	GIL	9.2	5.9
With ACEL	Acquirer	ACL	21.1	22.0
ICL+ RCL	Merged entity	ICL+RCL	10.1	5.0
With GIL	Target	L&T/UTCL	3.5	7.7
With L&T	Acquirer	GIL	9.9	15.0
With ACRL	Acquirer	ACL	14.3	18.9
Amalgamation	Merged entity	JAL	14.4	14.6
With Cimphor	Target	SDCCL	10.8	5.1
With Dalmia(M)	Target	OCLIL	7.2	12.5
With ACL	Target	ACEL	-39.7	-24.1
With EIL	Acquirer	ACC	1.1	6.5
With ACC	Target	EIL	2.0	5.6
With Italcementi	Target	ZCL	-3.1	17.1
Average			3.6	6.3
t' Value	1.2	Critical Value	2.08	
P-Value	0.24	Result	**Not Sig**	

Table 6.24: The table reflects the Indian cement industries NPM levels in the post event period against the pre event period. Here in 13 of the 22 cases there has been an increase in NPM % in

the post event period over pre event period. The overall average has grown from 3.6% to 6.3% which is good change but statistically not significant. The main deals of L&T, GIL, ACC and ACL have shown improvement in post event over pre event. In spite of the deals involving huge capitals there had been increase in OPM and NPM. The four companies forming 40% of the countries market share have shown improvement in OPM and NPM post event which can be expected to have good influence in the industry. The hypothesis needs to be accepted but there are good sign by way of the change being positive in post event period over pre event period.

6.1.4. 'ROCE' Comparison between Pre event and Post event means:

From the data analyzed company wise earlier, the comparison between the mean ROCE in the pre event period has been compared with the mean ROCE in post event period for testing the hypothesis.

ROCE:

ROCE study for the M&A cases comparing pre event mean and post event mean:

Table 6.25: ROCE comparison between Pre event and Post event (%):

Combination	Category	Firm	ROCE Pre event Mean	ROCE Post event Mean
DCBL+DSL	Merged entity	DCBL+DSL	11.0	19.1
With ZCL	Target	SVCL	22.8	19.7
With SVCL	Acquirer	ZCL	13.3	4.8
With Heidelberg	Target	MyCL	1.7	41.8
With L&T	Target	NCL	8.5	7.5
With NCL	Acquirer	L&T	23.2	19.9
With Holcim	Target	ACC	23.4	71.6
With Holcim	Target	ACL	19.4	58.0
With SDCCL	Acquirer	GIL	19.3	18.3
With ACEL	Acquirer	ACL	16.0	21.7
ICL+ RCL	Merged entity	ICL+RCL	19.9	14.7
With GIL	Target	L&T/UTCL	24.9	27.1
With L&T	Acquirer	GIL	21.5	29.4
With ACRL	Acquirer	ACL	16.9	30.1
Amalgamation	Merged entity	JAL	16.8	15.7
With Dalmia(M)	Target	OCLIL	18.1	25.6
With ACL	Target	ACEL	-6.3	-3.2
With EIL	Acquirer	ACC	15.8	23.4
With ACC	Target	EIL	9.5	34.6
With Italcementi	Target	ZCL	8.8	21.8
With GIL	Target	SDCCL	8.8	44.9
With Cimphor*	Target	SDCCL	331.6	17.0
Average			14.5	23.9
t' Value	2.8	Critical Value	2.08	
P-Value	0.01	Result	**SIG**	

(*-Due extremely low values of Cap employed giving extreme figures, the SDCCL fig's not considered for overall result. The capital employed became low due to heavy losses getting adjusted in Balance sheet)

Table 6.25: The figures show an overall improvement which is statistically significant and is a very good sign for the industry. In 13 of the 22 cases there had been increase in ROCE in post event. That is proof of more than half of the cases having been benefitted. The biggest deals of players who have the most influential role in the industry have shown significant increases. The increase had been namely, L&T from 24.9% to 27.1%, GIL from 21% to 29%, ACC from 23.4% to 71.6%, ACL from 19.4% to 58%. The hypothesis is rejected, and the improvement has been extremely good for the industry.

6.1.5. D/E Comparison between Pre event and Post event means:

From the data above the comparison between the mean D/E in the pre event period has been compared with the mean D/E in post event period for testing the hypothesis.

D/E Ratio:

D/E ratio study for the M&A cases comparing pre event mean and post event mean:

Table 6.26: D/E Ratio comparison between Pre event and Post event periods:

Combination	Category	Firm	D/E Pre event Mean	D/E Post event Mean
DCBL+DSL	Merged entity	DCBL+DSL	1.3	1.5
With ZCL	Target	SVCL	4.9	4.5
With SVCL	Acquirer	ZCL	1.5	0.7
With Heidelberg	Target	MyCL	11.5	0.0
With L&T	Target	NCL	1.2	1.7
With NCL	Acquirer	L&T	0.8	1.1
With Holcim	Target	ACC	1.1	0.2
With Holcim	Target	ACL	0.6	0.1
With GIL	Target	SDCCL	1.8	-1.7
With SDCCL	Acquirer	GIL	1.0	0.7
With ACEL	Acquirer	ACL	1.1	0.8
ICL+ RCL	Merged entity	ICL+RCL	1.3	2.1
With GIL	Target	L&T/UTCL	1.2	1.2
With L&T	Acquirer	GIL	0.7	0.4
With ACRL	Acquirer	ACL	0.9	0.4
Amalgamation	Merged entity	JAL	1.8	2.0
With Cimphor	Target	SDCCL	18.6	0.4
With Dalmia(M)	Target	OCLIL	1.6	1.0
With ACL	Target	ACEL	-2.1	-4.1
With EIL	Acquirer	ACC	1.4	1.1
With ACC	Target	EIL	0.2	0.1
With Italcementi	Target	ZCL	0.5	0.2
Average			2.4	0.7
t' Value	-1.8	Critical Value	2.08	
P-Value	0.08	Result	**SIG***	

* Reduction in D/E to less than ‘1’ needs to be considered as ‘SIGNIFICANT’ in cement industry.

Table 6.26: From this table the inference is the D/E has come down with 'Significance' at 10% confidence level. The calculation included the values of ACEL(ACL), and the result is in spite of the high negative values in both pre event and post event periods of this case. This is an extraordinary case of taking over a company in BIFR by ACL. The change has been negative overall by '-2X' which can be considered significant. The hypothesis is rejected and the change in D/E post event has been significant and favorable one. Since the value of D/E less than 1 is considered good, the reduction of average from 2.4 to less than 1 can be considered significant even at 5% confidence level. At 10% confidence level the statistical result directly shows significance.

6.1.6. Comparison of OPM between 1st year and 3rd year post event:

Synergy in performance helping to improve profitability is an important aspect in M&A's and hence a manufacturing sector like cement needs to be analyzed for synergy in the post event period.

OPM:

Comparison of OPM between first year and third year post event:

Table 6.27: OPM between 1st year and 3rd year Post event (%):

Combination	Category	Firm	OPM 1st Yr Post event	OPM 3rd Yr Post event
DCBL+DSL	Merged entity	DCBL+DSL	27.0	30.0
With ZCL	Target	SVCL	12.5	8.7
With SVCL	Acquirer	ZCL	20.4	10.5
With Heidelberg	Target	MyCL	15.4	17.4
With L&T	Target	NCL	0.8	4.3
With NCL	Acquirer	L&T	10.7	13.0
With Holcim	Target	ACC	31.2	28.3
With Holcim	Target	ACL	35.8	36.3
With GIL	Target	SDCCL	-13.3	8.4
With SDCCL	Acquirer	GIL	17.9	18.9
With ACEL	Acquirer	ACL	36.3	60.7
ICL+ RCL	Merged entity	ICL+RCL	26.4	25.0
With GIL	Target	L&T/UTCL	11.0	30.1
With L&T	Acquirer	GIL	28.6	30.9
With ACRL	Acquirer	ACL	31.0	34.3
Amalgamation	Merged entity	JAL	32.4	33.4
With Cimphor	Target	SDCCL	-2.6	16.7
With Dalmia(M)	Target	OCLIL	29.6	30.5
With ACL	Target	ACEL	-31.9	7.6
With EIL	Acquirer	ACC	13.5	17.3
With ACC	Target	EIL	11.4	15.3
With Italcementi	Target	ZCL	25.6	33.7
Average			16.8	23.2
t' Value	2.65	Critical Value	2.080	
P-Value	0.015	Result	**SIG**	

Table 6.27: The inference from the table shows significant change between first year and third year OPM in the industry. In 18 out of the 22 case there had been increase in OPM. Since the industry is cyclic and since the event cases have been taken over a period of more than a decade the change can be considered significant showing M&A having an impact on synergy. The overall average had moved from 16.8% to 23.2% which is a significant change. In two of the four cases where there had been drop, the drop had been marginal. These are the cases of ICL and ACC (Holcim). The other two are small firms namely SVCCL and ZCL with a capacity of about 2 mtpa. Hence the hypothesis is rejected and there is significant change on the positive side seen in the industry in the OPM performance between first year and third year post event.

6.1.7. Comparison of NPM between 1st year and 3rd year post event:

NPM:

Comparison of NPM between first year and third year post event:

Table 6.28: NPM between 1st year and 3rd year Post event (%):

Combination	Category	Firm	NPM 1st Yr Post event	NPM 3rd Yr Post event
DCBL+DSL	Merged entity	DCBL+DSL	20.0	9.0
With ZCL	Target	SVCL	0.2	-7.7
With SVCL	Acquirer	ZCL	-4.2	-9.5
With Heidelberg	Target	MyCL	-0.5	16.5
With L&T	Target	NCL	-10.1	-6.6
With NCL	Acquirer	L&T	4.5	4.3
With Holcim	Target	ACC	19.7	16.6
With Holcim	Target	ACL	24.0	22.5
With GIL	Target	SDCCL	-30.0	-18.4
With SDCCL	Acquirer	GIL	4.4	7.8
With ACEL	Acquirer	ACL	13.5	38.3
ICL+ RCL	Merged entity	ICL+RCL	7.3	3.8
With GIL	Target	L&T/UTCL	0.1	15.9
With L&T	Acquirer	GIL	14.2	17.9
With ACRL	Acquirer	ACL	18.0	20.8
Amalgamation	Merged entity	JAL	14.2	14.6
With Cimphor	Target	SDCCL	-5.5	13.7
With Dalmia(M)	Target	OCLIL	15.2	11.9
With ACL	Target	ACEL	-54.2	-18.9
With EIL	Acquirer	ACC	3.6	9.7
With ACC	Target	EIL	4.5	8.3
With Italcementi	Target	ZCL	16.4	16.8
Average			3.4	8.5
t' Value	2.12	Critical Value	2.080	
P-Value	0.046	Result	**SIG**	

Table 6.28: A change of NPM from the test indicates excellence and the statistical inference is it is ‘Significant’ (p value at 0.046). In 14 of the 22 case there had been improvement on 3rd year post event over the 1st year. The hypothesis is rejected and there is significant change post merger between 1st year performance and 3rd year performance. There has been overall improvement in operational and financial aspects as the NPM relates revenue with net income.

6.1.8. Comparison of ROCE between 1st year and 3rd year post event:

ROCE:

Comparison of ROCE between first year and third year post event:

Table 6.29: ROCE between 1st year and 3rd year Post event (%):

Combination	Category	Firm	ROCE 1st Yr Post event	ROCE 3rd Yr Post event
DCBL+DSL	Merged entity	DCBL+DSL	19.6	16.5
With ZCL	Target	SVCL	36.3	18.4
With SVCL	Acquirer	ZCL	8.5	4.1
With Heidelberg	Target	MyCL	36.6	34.7
With L&T	Target	NCL	2.0	13.4
With NCL	Acquirer	L&T	14.6	27.6
With Holcim	Target	ACC	53.7	68.9
With Holcim	Target	ACL	55.6	46.4
With SDCCL	Acquirer	GIL	15.3	22.4
With ACEL	Acquirer	ACL	17.3	27.1
ICL+ RCL	Merged entity	ICL+RCL	17.0	14.0
With GIL	Target	L&T/UTCL	10.7	47.0
With L&T	Acquirer	GIL	30.6	31.9
With ACRL	Acquirer	ACL	24.4	49.6
Amalgamation	Merged entity	JAL	14.1	18.1
With Dalmia(M)	Target	OCLIL	25.5	29.2
With ACL	Target	ACEL	-74.7	24.0
With EIL	Acquirer	ACC	18.4	28.3
With ACC	Target	EIL	27.9	38.7
With Italcementi	Target	ZCL	17.1	23.0
With Cimphor*	Target	SDCCL	-8.0	38.1
Average			17.6	27.8
t' Value	2.3	Critical Value	2.086	
P-Value	0.032	Result	**SIG**	

Table 6.29: Here in the ROCE the change between first year and third year had been extremely good as the overall average had increase from 17.6% t 27.8%. The events have involved small players and big players and domestic M&A as well as foreign players taking over big domestic players. Since the mix of the cases reflects the industry the change can be considered significant for the industry. In 15 out of the 22 cases there had been increase in ROCE between the periods considered. The result reflects significant improvement.

6.1.9. Comparison of D/E between 1st year and 3rd year post event:

D/E Ratio:

Comparison of D/E between first year and third year post event:

Table 6.30: D/E between 1st year and 3rd year Post event:

Combination	Category	Firm	D/E 1st Yr Post event	D/E 3rd Yr Post event
DCBL+DSL	Merged entity	DCBL+DSL	1.4	1.8
With ZCL	Target	SVCL	7.7	4.0
With SVCL	Acquirer	ZCL	0.9	0.6
With Heidelberg	Target	MyCL	0.0	0.0
With L&T	Target	NCL	2.1	1.4
With NCL	Acquirer	L&T	1.0	1.1
With Holcim	Target	ACC	0.4	0.1
With Holcim	Target	ACL	0.2	0.1
With GIL	Target	SDCCL	-1.9	-1.5
With SDCCL	Acquirer	GIL	0.9	0.6
With ACEL	Acquirer	ACL	1.0	0.8
ICL+ RCL	Merged entity	ICL+RCL	2.0	2.2
With GIL	Target	L&T/UTCL	1.4	-0.9
With L&T	Acquirer	GIL	0.5	0.5
With ACRL	Acquirer	ACL	0.5	0.3
Amalgamation	Merged entity	JAL	1.8	2.1
With Cimphor	Target	SDCCL	0.7	0.0
With Dalmia(M)	Target	OCLIL	0.9	1.0
With EIL	Acquirer	ACC	1.3	0.9
With ACC	Target	EIL	0.2	0.1
With Italcementi	Target	ZCL	0.3	0.2
With ACL	Target	ACEL*	5.0	-22.0
Average			1.1	0.7
t' Value	-1.82	Critical Value	2.086	
P-Value	0.084	Result	SIG**	

*-Due to extreme values the reading of ACEL not considered for overall result, **-Reduction in D/E to less than 1 needs to be considered SIG.

Table 6.30: From the table it can be inferred that the change is significant at 10% confidence level. It can be seen that the vale has come down for 14 cases between the periods. Any D/E below 1 is welcome across sectors and cement industry is no exception. Considering the high investments in capital, betterment in D/E by way of reduction below '1' is welcome sign and the change has been considered significant. The hypothesis is rejected and there had been significant change in D/E post event between the periods.

6.1.10. Analysis of EVA, MVA and RONW post event:

The shareholders' value addition working has been done by taking in to account the market value of shares, the capital employed, cost of equity and debts, the tax rates and interests on debts. **EVA, MVA and RONW Analysis:**

Table 6.31: Details of EVA, MVA and RONW:

Company	Financial period	Economic Value added(EVA) (Rs.crores)	Market Value Added (Rs.crores)	RONW (%)
DCBL+DSL	2006-07	-80	789	30
	2007-08	-114	1157	30
	2008-09	32	-637	13
GIL	1998-99	-66	-1468	6
(SDCCL)	1999-2000	-312	-69	8
	2000-01	-89	-757	12
SDCCL	1998-99	-67	-79	-67
(GIL)	1999-2000	-31	-107	-25
	2000-01	-30	-140	-19
MyCL	2006	-189	706	-4
(Heidelberg)	2007	-93	605	27

Table 6.31(Contd.):

Company	Financial period	Economic Value added(EVA) (Rs.crores)	Market Value Added (Rs.crores)	RONW (%)
	2008	78	-375	21
ACC (Holcim)	2006	-2841	17219	39
	2007	-2406	15072	35
	2008	-592	4095	25
ACL (Holcim)	2004-05	-1164	5981	21
Hol-05-06	2006	-2827	18161	43
ACRL-04-05	2007	-2745	17910	38
	2008	-747	5073	25
ACL (ACEL)	1997-98	-255	852	12
	1998-99	-322	1211	13
	1999-2000	-148	1375	28
L&T (NCL)	1999-00	-1057	3134	9
	2000-01	-797	1562	8
	2001-02	-560	1193	10
SDCCL(Cimphor)	2007-08	-66	229	-49
	2008-09	2	-41	16
	2009-10	-12	64	21
OCLIL	2007-08	-55	304	21
(Dalmia(M))	2008-09	63	-397	18
	2009-10	26	-110	21
EIL (ACC)	2002-03	2	-59	10
	2003-04	39	3	60
	2004-05	-25	110	17
ACC (EIL)	2002-03	-367	1279	10
	2003-04	-697	3133	15
	2004-05	-910	4845	24

Table 6.31(Contd.):

Company	Financial period	Economic Value added(EVA) (Rs.crores)	Market Value Added (Rs.crores)	RONW (%)
JAL	2008-09	-1060	3288	14
	2009-10	-4660	23337	20
ICL (RCL)	1998-99	-14	-195	12
	1999-00	-170	283	6
	2000-01	-56	-284	6
GIL (L&T/UTCL)	2005-06	-2894	13805	17
	2006-07	-2277	12841	25
	2007-08	-2502	15545	27
L&T/UTCL (GIL)	2005-06	-1464	7428	22
	2006-07	-1135	7822	44
	2007-08	-922	6953	37

[Annexure I]

(Only companies listed in Bombay Stock Exchange (BSE) have been taken for the analysis. JAL's event happened in the year 2008-09 and hence post event data available only for two years)

Table 6.31: In EVA it is a combination of market value of stocks, expected level of returns after expenditures, after taking in to account the 'effective tax' rates, cost of 'debts' and 'equity'. Since the calculation had been over a decade period across various deals the results are dynamic.

For L&T between year 1999 and 2002, EVA had turned negative but kept improving post event. Later when cement division of L&T was taken over by GIL and formed as separate unit as 'UTCL' a similar pattern is witnessed between the periods 2005-08. Same is the case for GIL as after taking over L&T's cement division, the share price had been dynamic going up, but after it had taken over SDCCL in late nineties, the share prices declined. SDCCL takeover was a case of accepting a BIFR referred case and market reaction had reflected the risk involved.

For the other cement giant ACC between years 2002-05 it had increased negativity but between 2006 and 2008 it had been improving post event in similar lines with UTCL.

The classical example is ACL which had been negative in 2004-05 with takeover of ACRL, the very next year with the combination of Holcim its negativity increased. Then as the cement industry demand increased around 2007 the firm's value had started improving.

MyCL which is a regional player in south had been struggling and after takeover by foreign firm Heidelberg has seen turnaround.

These reflects the dynamics of the cement industry as when there is a cyclic boom public expect the firms to do well and it is a combination of performance and expectations. Out of the total of 16 cases, for 12 cases there has been improvement in EVA from first year to third year post event.

MVA has clearly reflected economic condition in the industry. In the period 2005-07 the MVA had been excellent as seen for the giants ACC, ACL, UTCL, GIL. These four companies had been involved in M&A event activities in the period, apart from being involved at other periods. In the year 2008 there had been a fall in MVA as there was excess supply in the industry which put pressure on prices. Global crisis effect had huge drop in share prices in 2008 for the giants. On occasions when EVA is negative MVA is positive which shows expectations from the public in spite of cyclic fall which can be on case to case basis. JAL has long term plans in its amalgamations and with high level of borrowing its profitability is low and hence the EVA is low in spite of increase in share prices. The MVA is positive which reflects positive expectations of the public.

RONW has increased in 11 of the 16 cases which is also an excellent sign for the industry. The shareholders' value addition has been positively reflected over all in the industry. Even when EVA had been negative RONW had been positive along with MVA. When realizations improve with increase in demand EVA's are bound to be in right direction.

The overall impact of M&A on the financial parameters of the industry and addition of value to shareholders' are seen to be significant.

6.2. Operational parameters analysis

6.2.1. Company wise operational parameter analysis:

1. DCBL merger with DSL:

Table 6.32: Operational parameters of DCBL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	Dalmia cement+ Sugar Business	%	mtpa	mtpa	mtpa	%	KwH/T
2003-04		3.60	36.10	1.23	1.30	105	71
2004-05		3.80	36.80	1.23	1.40	113	75
2005-06		3.67	43.60	3.50	1.60	46	76
2006-07		5.41	49.90	3.50	2.70	77	77
2007-08		6.14	53.60	3.50	3.29	94	74
2008-09		5.67	59.70	3.50	3.38	97	73
Market share criteria:		Regional					
Region:		South					

Source: Annual reports of DCBL

Table 6.32: Post event DCBL had increased investment in capacity addition and increased its market share as a regional player existing in southern part of the country. The power usage had been very efficient (Standards set by industry 120 KwH/T) even before the event and has maintained the efficiency. The OR had come down but considering the higher installed capacity the reduced OR itself has given an increase in market share. Any OR above 90% is excellent by cement industry standards and overall improvement has been significant [146] [147] [148] [149].

2. ZCL takeover of SVCL:

Table 6.33: Operational parameters of SVCL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	Sri Vishnu cements ltd	%	mtpa	mtpa	mtpa	%	KwH/T
1998-99		3.02	24.84	0.60	0.75	125	109
1999-00		2.66	28.90	0.60	0.77	128	110
2000-01		2.27	27.30	0.60	0.62	103	108
2001-02		2.00	29.50	0.60	0.59	98	102
2002-03		2.04	33.40	1.30	0.68	52	100
2003-04		1.97	36.10	1.30	0.71	55	97
Market share criteria:		Regional					
Region:		South					

Source: Annual reports of SVCL

Table 6.33: The power usage had shown sign of improvement but the OR and MS had fallen post event. There had been capacity addition by the firm but the production levels by quantity had not improved which is an area of stagnancy. When the market consumption increases and companies production does not improve it has direct effect of reducing the market share. Operational efficiency had declined post event [150] [151] [153].

Table 6.34: Operational parameters of ZCL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	Zuari Cements Ltd	%	mtpa		mtpa	%	KwH/T
1998-99		1.93	24.84	0.50	0.48	96	86.12
1999-00		4.98	28.90	1.70	1.44	85	105.65
2000-01		5.35	27.30	1.70	1.46	86	98
2001-02		5.32	29.50	1.70	1.57	92	97.6
2002-03		4.67	33.40	1.70	1.56	92	96.7
2003-04		4.63	36.10	1.70	1.67	98	94.2
Market share criteria:		Regional					
Region:		South					

Source: Annual reports of ZCL

Table 6.34: Power usage has improved post event apart from maintenance of productivity. Since there is growth in the regional production levels, in spite of maintenance of productivity the MS had come down. A productivity of 98% is excellent for ZCL but still its MS has come down from the second year post event. This shows the company has to help its target firm SVCL to improve productivity and synergize operations to improve the overall market share [154] [157] [158].

3. Heidelberg takeover of MyCL:

Table 6.35: Operational parameters of MyCL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	Heidelberg Cement India Ltd	%	mtpa	mtpa	mtpa	%	KwH/T
2003-04		5.54	36.10	2.10	2.00	95	84
2004-05		5.52	36.80	2.10	2.03	97	88
2005-06		4.68	43.60	2.10	2.04	97	93
2006 (9months Apr-Dec)		4.28	37.43	1.57	1.60	102	91
2007		3.96	53.60	2.10	2.12	101	90
2008		4.05	59.70	3.06	2.42	79	89
Market share criteria:		Regional					
Region:		South					

Source: Annual reports of MyCL

Table 6.35: There is increase in capacity of production on third year post event which reflects additional investment post event. The production had increased from 2.1 mtpa to 2.4 mtpa but the productivity has come down. In cement industry gestation periods are long for new capacity additions and this could be a factor. The power usage had been efficient but increased slightly post event. The recommended standard being 120 KwH/T any use below 90 KwH/T is considered efficient and the results reflect improved performance post event [160] [161] [162] [163].

4. L&T takeover of NCL:

Table 6.36: Operational parameters of NCL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	Narmada Cement	%	mtpa	mtpa	mtpa	%	KwH/T
1996-97		2.45	29.46	1.00	0.72	72	110.2
1997-98		2.45	31.97	1.20	0.78	65	106.6
1998-99		2.25	33.69	1.20	0.76	63	104.1
1999-2000		2.83	37.80	1.20	1.07	89	102.6
2000-01		3.28	38.40	1.50	1.26	84	97.1
2001-02		3.99	32.10	1.50	1.28	85	97.9
Market share criteria:		Regional					
Region:		West					

Source: Annual reports of NCL

Table 6.36: Power usage had come below the level of 100 KwH/T, OR had also improved post event which has helped increase in MS. OR improving in spite of capacity addition is a welcome development for the target company. Operational improvement has been excellent [164] [165] [166] [167].

Table 6.37: Operational parameters of L&T:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	L&T	%	mtpa	mtpa	mtpa	%	KwH/T
1996-97		6.98	76.22	6.12	5.32	87	106
1997-98		7.34	83.16	8.60	6.10	71	101
1998-99		10.89	87.91	10.65	9.57	90	99
1999-2000		11.04	100.45	10.65	11.09	104	94
2000-01		10.07	100.11	13.50	10.08	75	91
2001-02		10.09	107.00	14.50	10.80	74	91
Market share criteria:		All India					
Region:		All India					

Source: Annual reports of L&T

Table 6.37: Overall production capacities at all India level have been increased in the period and the company had been in line with the industrial change. Significant improvement had also been made in power usage bringing it well below 100 KwH/T. The capacity additions reflect the

approach of the company as an all India player. The results show improved performance [168] [169] [170].

5. Holcim takeover of ACC:

Table 6.38: Operational parameters of ACC:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	ACC Ltd	%	mtpa	mtpa	mtpa	%	KwH/T
2002-03		12.03	111.40	16.10	13.40	83	90
2003-04		12.44	117.40	16.10	14.60	91	90
2004-05		12.02	127.60	16.80	15.34	91	86
2005-06 (21 months)		13.31	237.48	38.90	31.60	81	88
2007		12.78	155.70	22.40	19.90	89	89
2008		12.36	168.30	22.60	20.80	92	87
Market share criteria:		All India					
Region:		All India					

Source: Annual reports of ACC

Table 6.38: High OR had been maintained and power usage had also been efficient. In spite of increase in production the MS had come down due to the country's capacity expansion being very high in the period, going up from 127 mtpa before event to almost 170 mtpa in three years post event. The results show the operational efficiency had been excellent post event [171] [172] [173] [174] [175] [176].

6. Holcim takeover of ACL:

Table 6.39: Operational parameters of ACL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	Ambuja Cements Ltd	%	mtpa	mtpa	mtpa	%	KwH/T
2002-03		8.83	111.40	9.00	9.84	109	86
2003-04		8.83	117.40	12.86	10.37	81	86
2004-05		10.03	127.60	13.30	12.80	96	84
2005-06 (18 months)		11.01	205.59	16.30	22.63	139	86
2007		10.83	155.70	18.50	16.86	91	84
2008		10.55	168.30	22.00	17.75	81	86
Market share criteria:		All India					
Region:		All India					

(The years 2002-03 and 03-04 does not include Ambuja cement Rajastan ltd as it was merged from 2004-05 only). Source: Annual reports of ACL.

Table 6.39: Similar to ACC the other company, ACL, taken over by Holcim also has shown efficient usage of power being maintained apart from increase in production and high OR. In the year of the event the OR had seen extremely high performance of 139% which is not possible for any company to maintain. Hence the decline after that is not seen as a negative development. The OR of 81% in third year against a capacity addition of 3.5 mtpa is in right direction, as the production had increased in the year from 16.8 to 17.75 mtpa. New plant settling down to full capacity utilization will consume a gestation period. Significant improvement seen operationally [177] [178] [179] [180] [181].

7. GIL takeover of SDCCL:

Table 6.40: Operational parameters of SDCCL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	Shree Digvijay (target)	%	mtpa	mtpa	mtpa	%	KwH/T
1995-96		2.98	25.90	1.08	0.77	72	104
1996-97		3.22	29.46	1.08	0.95	88	104
1997-98		2.57	31.90	1.08	0.82	76	109
1998-99		3.63	33.60	1.61	1.22	76	102
1999-2000		2.35	37.80	1.08	0.89	83	101
2000-01		1.67	38.40	1.08	0.64	60	104
Market share criteria:		Regional					
Region:		West					

Source: Annual reports of SDCCL

Table 6.40: While Power usage has not shown much change, the OR had also come down. The company had come out of BIFR and taken over by GIL and the gestation period for improvement could have been the cause of slackness in the speed of improvement [182] [183] [184] [185].

Table 6.41: Operational parameters of GIL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	Grasim Industries Ltd (Acquirer)	%	mtpa	mtpa	mtpa	%	KwH/T
1995-96		12.63	25.90	5.00	3.27	65	110
1996-97		13.92	29.46	5.20	4.10	79	104
1997-98		14.73	31.90	5.20	4.70	90	100.2
1998-99		17.32	33.60	8.20	5.82	71	95
1999-2000		22.20	37.80	8.20	8.39	102	90.2
2000-01		23.70	38.40	9.86	9.10	92	89.7
Market share criteria:		Regional					
Region:		West (Till late 90's)					

Source: Annual reports of GIL

Table 6.41: Up to late nineties GIL had been regional player and later became an all India player, in the current decade. All round improvement seen in power usage, MS, production capacity and production levels. Since the capacity addition had been fast and since the gestation period of new plants are high, in the third year the OR is slightly below the second year post event [186] [187] [188] [189] [190].

8. ICL takeover and merger of RCL:

Table 6.42: Operational parameters of ICL and RCL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	Icl with Raasi	%	mtpa	mtpa	mtpa	%	KwH/T
1995-96		19.44	21.74	4.20	4.23	101	117.00
1996-97		20.09	21.65	4.20	4.35	104	115.00
1997-98		20.65	23.20	5.10	4.79	94	112.70
1998-99		21.98	24.84	5.50	5.46	99	105.40
1999-00		20.62	28.90	6.00	5.96	99	100.82
2000-01		19.34	27.30	6.00	5.28	88	96.92
Market share criteria:		Regional					
Region:		South					

Source: Annual reports of ICL and RCL

Table 6.42: The MS had increased as the company is a main player in southern part of the country. The OR is below 90% in third year post event which had affected the MS in that year. Power usage has also shown significant improvement post event. Overall improvement from the above factors has shown mixed results [80] [191] [192] [193] [194] [195].

9. GIL takeover of cement division of L&T:

Table 6.43: Operational parameters of UTCL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM		%	mtpa	mtpa	mtpa	%	KwH/T
2001-02	UTCL	11.56	102.10	15.00	11.80	79	91
2002-03		10.77	111.40	16.30	12.00	74	88
2003-04		10.39	117.40	17.00	12.20	72	84
2004-05		10.11	127.60	17.00	12.90	76	87
2005-06		9.75	140.50	17.00	13.70	81	89
2006-07		9.38	155.70	17.10	14.60	85	87
Market share criteria:		All India					
Region:		All India					

Source: Annual reports of UTCL

Table 6.43: Power usage and production levels have shown improved efficiency post event. The MS has fallen short due to increase in all India level addition in production capacities [196] [197] [198] [199] [200] [201].

Table 6.44: Operational parameters of GIL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	GIL	%	mtpa	mtpa	mtpa	%	KwH/T
2001-02		9.33	102.10	11.37	9.53	84	90.26
2002-03		9.96	111.40	12.92	11.09	86	84.50
2003-04		10.09	117.40	13.12	11.85	90	85.28
2004-05		9.75	127.60	13.12	12.44	95	83.20
2005-06		9.84	140.50	13.12	13.83	105	79.85
2006-07		9.26	155.70	13.12	14.42	110	78.27
Market share criteria:		All India					
Region:		All India					

Source: Annual reports of GIL

Table 6.44: Very good efficiency had been shown in bringing down the power usage post event and the OR had also been kept over 100%. The MS had been low due to the higher capacity addition at all India level. Since the deal between L&T and GIL had been one of the biggest in the country and the biggest in the Indian cement industry the capacity additions have got delayed beyond three years post event. Operational efficiency improvement had been significant [202] [203] [204] [205] [206].

10. ACL takeover and merger of ACRL:

Table 6.45: Operational parameters of ACL and ACRL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	Ambuja cement ltd +ACRL	%	mtpa	mtpa	mtpa	%	KwH/T
2001-02		8.30	102.10	10.50	8.47	81	86
2002-03		10.13	111.40	10.50	11.29	108	86
2003-04		10.11	117.40	14.36	11.87	83	86
2004-05		10.03	127.60	13.30	12.80	96	84
2005-06(18 m)		11.01	205.59	16.30	22.63	139	86
2007		10.83	155.70	18.50	16.86	91	84
Market share criteria:		All India					
Region:		All India					

Source: Annual reports of ACL and ACRL

The 'OR' had been consistently good and improved after the event. Power usage had been efficient and got reduced by one or two units after the event. MS had dropped slightly due to all India capacity additions. The combined factors show good improvement in efficiency levels [177] [178] [179] [180] [207] [208] [209].

11. Amalgamation of JAL:

Table 6.46: Operational parameters of JAL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	Jaiprakash Industries Ltd	%	mtpa	mtpa	mtpa	%	KwH/T
05'-06		7.70	76.80	7.00	5.91	84	87
06'-07		7.96	83.90	7.00	6.68	95	86
07'-08		7.37	92.00	7.00	6.78	97	83
08'-09		7.96	95.90	14.70	7.63	52	87
09'-10		13.16	79.80	19.10	10.50	55	90
Market share criteria:		Regional					
Region:		North, Central and West					

Source: Annual reports of JAL

Table 6.46: Power usage had increased to 90 KwH/T level as many plants were new. The MS have shown good improvement post event. The 'OR' decrease is due to hectic capacity addition

by the company. Need to stabilize and sell the increased quantity involves time lag as a brand cannot be sold immediately with push sales and hence improvement viewed as significant [210] [211] [212] [213] [214]

12. Cimpor DePortugal takeover of SDCCL:

Table 6.47: Operational parameters of SDCCL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	Shee Digvijay Ltd	%	mtpa	mtpa	mtpa	%	KwH/T
04'-05		1.76	43.16	1.08	0.76	71	94
05'-06		1.89	47.21	1.08	0.89	83	98
06'-07		1.79	51.34	1.08	0.92	86	104
07'-08		1.49	53.77	1.08	0.80	74	111
08'-09		1.63	54.51	1.08	0.89	83	105
2009 (Ap-Dec)		2.44	34.45	0.81	0.84	104	102
Market share criteria:		Regional					
Region:		West					

Source: Annual reports of SDCCL

Table 6.47: OR has shown very good improvement in the third year post event and in the three years' post event power usage had shown improvement in efficiency though it is more than 100 Kw which means there is scope to reduce it further down. The production capacity addition had not been taken up post takeover and hence the MS does not show significant change. In the nine months period in the third year post event the market share signs are good. Since the takeover is by a multinational there can be increase in investment in near future in next two to five years [215] [216] [217] [218]. Operational improved result viewed as mixed in this case.

13. OCL India merger with Dalmia cement(Mehalaya) ltd:

Table 6.48: Operational parameters of OCLIL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	OCL India Ltd	%	mtpa	mtpa	mtpa	%	KwH/T
04'-05		7.22	18.70	1.45	1.35	93	91
05'-06		7.90	20.00	1.80	1.58	88	87
06'-07		8.50	22.00	2.00	1.87	94	87
07'-08		8.40	23.80	2.00	2.00	100	85
08'-09		10.35	25.90	5.35	2.68	50	76
09'-10		14.23	21.30	5.35	3.03	57	76
Market share criteria:		Regional					
Region:		East					

Source: Annual reports of OCLIL

Table 6.48: The MS had shown considerable increase at the eastern regional level and the power usage has also reflected very good efficiency brought the levels below to the level of 76 KwH/T which is amongst the lowest levels in the industry. The OR has dropped greatly due to increase in installed capacity and high gestation period in new plants. Overall efficiency improvement has been very good [219] [220] [221] [222] [223].

14. ACL takeover of ACEL:

Table 6.49: Operational parameters of ACEL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	Ambuja cement eastern ltd	%	mtpa	mtpa	mtpa	%	KwH/T
1994-95 (n.a)		n.a		n.a	n.a	n.a	n.a
1995-96		21.41	4.67	1.14	1.00	88	103
1996-97		18.59	4.97	1.14	0.92	81	108
1997-98		10.53	5.84	1.14	0.62	54	106
1998-99		19.63	5.35	1.14	1.05	92	88
1999-2000		20.16	6.20	1.14	1.25	110	87
Market share criteria:		Regional					
Region:		East					

Source: Annual reports of ACEL

Table 6.49: With the takeover by efficient player, ACL, the firm has shown considerable improvement in power usage and productivity. The MS had also shown improvement in the third year post event [224] [225] [226] [227].

Table 6.50: Operational parameters of ACL (with ACEL):

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	Ambuja Cement Ltd	%	mtpa	mtpa	mtpa	%	KwH/T
1994-95 (n.a)		n.a	n.a	n.a	n.a	n.a	n.a
1995-96		10.55	29.00	3.50	3.06	87	110
1996-97		12.06	34.00	5.00	4.10	82	105
1997-98		13.65	37.00	5.00	5.05	101	103
1998-99		15.41	39.00	5.00	6.01	120	96
1999-2000		13.14	44.00	5.50	5.78	105	89
Market share criteria:		East+ West					
Region:		East+ West (till late 90's)					

Source: Annual reports of ACL

Table 6.50: ACL had been multi regional player till late nineties before become a pan India player this decade. Capacity additions had been among the plans as shown in the post event period. Power usage has shown significant improvement post event [228] [229] [230] [231].

15. ACC Takeover of EIL:

Table 6.51: Operational parameters of EIL:

Year	Company	Production cap	Production	Operational rate
UOM	Everest Industries Ltd	('000 MT)	('000 MT)	%
99'-00		304	211	69
00'-01		288	184	64
01'-02		288	184	64
02'-03		360	330	92
03'-04		288	292	101
04'-05		288	293	102

Source: Annual reports of EIL

Table 6.51: EIL is a 'fiber' cement sheet player who has shown improvement in OR post event. Since the product is different from the one in the study the MS had not been taken in consideration [232] [233] [234] [235].

Table 6.52: Operational parameters of ACC:

Year	Company	Production cap	Production	Operational rate	Power Used
UOM	ACC Ltd	mtpa	mtpa	%	KwH/T
99'-00		12.00	10.00	83	98
00'-01		12.70	10.20	80	97
01'-02		15.50	11.50	74	92
02'-03		16.10	13.40	83	90
03'-04		16.10	14.60	91	90
04'-05		16.80	15.34	91	86
Market share criteria:		All India			
Region:		All India			

Source: Annual reports of ACC

Table 6.52: Both 'OR' and Power usage has shown good improvement post event and OR had also improved post event. EIL has factories in South, East, North and West of India. The takeover is a good strategic move to help both the target and the acquirer as the product of the acquirer is the raw material for the target. The distribution can be synergic as the distribution

network of target and acquirer can be integrated and used for both the firms [171] [172] [173] [236] [237].

16. Italcementi takeover of ZCL:

Table 6.53: Operational parameters of ZCL:

Year	Company	Market Share	Regional Production	Production cap	Production	Operational rate	Power Used
UOM	ZCL	%	mtpa	mtpa	mtpa	%	KwH/T
2003-04		6.65	36.10	3.40	2.40	71	n.a
2004-05		6.79	36.80	3.40	2.50	74	n.a
2005-06		6.42	43.60	3.40	2.80	82	85.11
2006(Ap-Dec)		4.81	49.90	2.55	2.40	94	84.36
2007		6.16	53.60	3.40	3.30	97	85.58
2008		5.53	59.70	3.40	3.30	97	82.00
Market share criteria:		Regional					
Region:		South					

Source: Annual reports of ZCL

Table 6.53: The OR had increased from an average of 75% pre event to 97% and MS for the southern region player had dropped from 6.6% to 5.5%. On the year of takeover the OR was 94% and changed to 97% on the third year after the takeover. MS had changed from 4.8% to 5.5% between the years. The drop of MS in the year 2008 can be attributed to increase in regional capacity while the company's installed capacity did not change. The increase in OR reflects excellent usage of the capacity to utilize the demand. The Power usage had been efficient at 85 KwH and had further improved in the year 2008 to 82 which is very important as the state of 'Andra Pradesh' where the companies factory is located had perennially suffered from power shortage and improvement in efficiency is a welcome development [158] [238] [239] [240] [241].

6.2.2. 'OR' analysis between pre event and post event period considering the mean values:

Table 6.54: Details of means of 'OR', pre event and post event (%):

Combination	Firm	OP Rate Pre event Mean %	OP Rate Post event Mean %
With ACC	EIL	66	98
With ACEL	ACL	85	109
With Italcementi	ZCL	75	96
With L&T	NCL	67	86
With ACRL	ACL	90	109
With L&T	GIL	87	103
With SDCCL	GIL	78	89
With EIL	ACC	79	88
With Holcim	ACL	95	104
With Cimphor	SDCCL	80	87
With GIL	L&T/UTCL	75	81
With SVCL	ZCL	89	94
With NCL	L&T	83	84
DCBL+DSL	DCBL+DSL	88	89
With ACL	ACEL	84	85
With Holcim	ACC	88	87
With Heidelberg	MyCL	96	94
ICL+ Raasi	ICL+Raasi	99	96
With GIL	SDCCL	79	73
With Dalmia(M)	OCLIL	91	69
Amalgamation	JAL	92	53
With ZCL	SVCL	119	68
Average		86	88
t' test value	0.62	Critical Value	2.08
P value	0.54	Result	**NS**

Table 6.54, gives the reflection of the overall ‘OR’ for the industry and it is noticeable that the change is not significant. The p value is as high as 0.54. This parameter ‘OR’ is an extremely important estimate in a cement industry and M&A impact on the factor needs further study and understanding as done below.

Table 6.55: Analysis of the ‘OR’ based on the Positive and Negative trends (%):

The positive change and negative changes have been segregated and studied for significance in change in table 6.55 details positive change cases.

Operation rates of cases with Positive Change			
Combination	**Firm**	**OP Rate Pre event Mean %**	**OP Rate Post event Mean %**
With ACC	EIL	66	98
With ACEL	ACL	85	109
With Italcementi	ZCL	75	96
With L&T	NCL	67	86
With ACRL	ACL	90	109
With L&T	GIL	87	103
With SDCCL	GIL	78	89
With EIL	ACC	79	88
With Holcim	ACL	95	104
With Cimphor	SDCCL	80	87
With GIL	L&T/UTCL	75	81
With SVCL	ZCL	89	94
With NCL	L&T	83	84
DCBL+DSL	DCBL+DSL	88	89
With ACL	ACEL	84	85
Average		81	94
t' test value	5.00	Critical Value	2.14
P value	0.00	Result	**SIG**

Table 6.55 (contd):

Operation rates of cases with Negative Change

Combination	Firm	OP Rate Pre event Mean %	OP Rate Post event Mean %
With Holcim	ACC	88	87
With Heidelberg	MyCL	96	94
ICL+ Raasi	ICL+Raasi	99	96
With GIL	SDCCL	79	73
With Dalmia(M)	OCLIL	91	69
Amalgamation	JAL	92	53
With ZCL	SVCL	119	68
Average		95	77
t' test value	-2.37	Critical Value	2.45
P value	0.06	Result	**SIG @ 10%**

Tables 6.55: ‘OR’ is related to reducing fixed cost of production and hence improve profitability, help render better service to neighboring towns near factory and is a clear sign of efficiency. In the above cases there are 15 cases out of 22 which have increase in ‘OR’ post event. But the remaining cases have performed so abnormally due to various factors that the overall change gets evened out. In the 15 cases of increase if the change is seen the average has moved from 81% to 94% which is significant. In the cases where there had been a drag on the OR’s the average had moved from 95% to 77% which is also significant. Here important point of consideration is any operational rate over 90% is extremely good for a cement firm and is extremely difficult to sustain it as it depends on lot of factors. This reflects, the changes in ‘OR’ is Indian cement industry is significant but caution has to be exercised on the macro factors which affect ‘OR’. In many cases the capacity expansion might have been fast but the sales in the market to fit that expanded capacity will take some time. In the above cases Dalmia cement is a classical example of green field expansion after merger with the sugar division that in spite of increase in sales the ‘OR’ was low. Before the event the capacity was 1.2 mtpa. After the event the capacity increased

to 3.5 mtpa. The production and sales before event was 1.4 mtpa and after the event was 3.1 mtpa. Thus in spite of good increase in sale the ‘OR’ was lower. The fact that gestation period in new plants in cement industry is high to the level of two years also plays a role in the difference in ‘OR’ rates.

6.2.3. Power Consumption analysis:

The Power consumption analysis has been done between pre event and post event considering the mean values.

Table 6.56: Details of comparison of means of Power Consumptions between pre event and post event periods (%):

Combination	Firm		Power Pre event Mean	Power Post event Mean
DCBL+DSL	DCBL+DSL		74	75
With ZCL	SVCL		109	100
With SVCL	ZCL		97	96
With Heidelberg	MyCL		88	90
With L&T	NCL		107	99
With NCL	L&T		102	92
With Holcim	ACC		89	88
With Holcim	ACL		85	85
With GIL	SDCCL		106	102
With SDCCL	GIL		105	92
With ACEL	ACL		108	96
With ACL	ACEL		106	94
ICL+ RCL	ICL+RCL		115	101
With GIL	L&T/UTCL		88	88
With L&T	GIL		87	80
With ACRL	ACL		86	85
Amalgamation	JAL		85	89
With Cimphor	SDCCL		99	106
With Dalmia(M)	OCLIL		88	79
With EIL	ACC		96	89
With Italcementi	ZCL		85.11	83.98
With ACC	EIL		n.a	n.a
Average			95.4	90.9
t' test value		-3.42	Critical Value	2.09
P value		0.00	Result	**SIG**

Table 6.56: Power consumption reduction is such an important need due to the difficulties in power supply. The significant change by way of reduction is an extremely welcome situation for the industry. The result shows there had been very good focus by all the companies on this aspect. The null hypothesis is rejected.

6.2.4. Market Share analysis:

The 'Market Share' analysis has been done between pre event and post event considering the mean values.

Table 6.57: Details of 'MS' between pre event and post event (%):

Combination	Firm		MS Pre event Mean	MS Post event Mean
DCBL+DSL	DCBL+DSL		3.7	5.7
With ZCL	SVCL		2.7	2.0
With SVCL	ZCL		4.1	4.9
With Heidelberg	MyCL		5.2	4.1
With L&T	NCL		2.4	3.4
With NCL	L&T		8.4	10.4
With Holcim	ACC		12.2	12.8
With Holcim	ACL		9.2	10.8
With GIL	SDCCL		2.9	2.1
With SDCCL	GIL		13.8	21.1
With ACEL	ACL		11.3	14.1
ICL+ Raasi	ICL+Raasi		20.1	20.6
With GIL	L&T/UTCL		10.9	9.7
With L&T	GIL		9.8	9.6
With ACRL	ACL		9.5	10.6
Amalgamation	Jaiprakash		7.7	10.6
With Cimphor	SDCCL		1.8	1.9
With Dalmia(M)	OCLIL		7.9	11.0
With ACL	ACEL		20.0	16.8
With Italcementi	ZCL		6.6	6.1
With Everest	ACC		n.a	n.a
With ACC	Everest		n.a	n.a
t' test value		1.85	Critical Value	2.09
P value		0.08	Result	**SIG @ 10%**

Table 6.57: The objective of increase in ‘MS’ is one of the factors considered in the Indian cement industry before expansion with M&A’s. The p value of .08 shows the hypothesis can be rejected at 10% confidence level and there is significant difference in the pre event and post event means and the positive value reflects increase in ‘MS’ post event.

Comparison of performance between 1st year post event with 3rd year post event:

The null hypothesis taken for ‘post event 1st year and 3rd year performance’ comparison as follows:

H1: There is no difference in 1st year and 3rd year performance values in the sample cases.

H2: There is difference between the values.

6.2.5. 'OR' analysis between first year and third year post event:

Table 6.58: Details of 'OR' between 1st year and 3rd year post event (%) segregating positive and negative trends:

Positive Trend cases:

Combination	Firm	OP R 1	OP R3
With ACL	ACEL	53.9	109.6
With Cimphor	SDCCL	74.4	104.3
With SDCCL	GIL	71.0	92.3
DCBL+DSL	DCBL+DSL	77.1	96.7
With L&T	GIL	94.8	109.9
With Holcim	ACC	81.2	92.0
With ACC	EIL	91.7	101.7
With GIL	L&T/UTCL	75.9	85.4
With EIL	ACC	83.2	91.3
With SVCL	ZCL	92.4	98.2
With ACEL	ACL	101	105
Amalgamation	JAL	51.9	55.0
With Italcementi	ZCL	94.1	97.1
Average		80	95
t' test value	3.73	Critical Value	2.18
P value	0.00	Result	**SIG**

Table 6.58 (Contd):

Negative trend cases:

Combination	Firm	OP R 1	OP R3
With L&T	NCL	89.2	85.3
With ACRL	ACL	96.2	91.1
ICL+ RCL	ICL+RCL	99.3	88.0
With GIL	SDCCL	75.7	59.5
With Heidelberg	MyCL	101.9	79.1
With NCL	L&T	104.1	74.5
With Dalmia(M)	OCLIL	100.0	56.6
With ZCL	SVCL	98.3	54.6
With Holcim	ACL	138.8	80.7
Average		100	74
t' test value	-4.09	Critical Value	2.31
P value	0.00	Result	**SIG**

The above table, 6.58, shows, 'OR' values between 1st and 3rd year shows 'Significant' change. In 13 cases there had been improvement in the performance between the periods and in the remaining cases the reduction is so high that both the results are 'Significant'. The hypothesis for the industry is rejected as seen in positive cases, and hence the industry can see great potential in M&A's.

6.2.6. Power consumption post event between 1st year and 3rd year:

Analysis of power consumption between 1st year and 3rd year post event.

Table 6.59: Details of power consumption between 1st year and 3rd year post event (KwH/T):

Combination	Firm		Power 1	Power 3
DCBL+DSL	DCBL+DSL		77.0	73.0
With ZCL	SVCL		102.0	97.0
With SVCL	ZCL		97.6	94.2
With Heidelberg	MyCL		91.0	89.0
With L&T	NCL		102.6	97.9
With NCL	L&T		94.0	91.0
With Holcim	ACC		88.0	87.0
With Holcim	ACL		86.0	86.0
With GIL	SDCCL		102.0	104.0
With SDCCL	GIL		95.0	89.7
With ACEL	ACL		103	89
With ACL	ACEL		106.0	87.0
ICL+ RCL	ICL+RCL		105.4	96.9
With GIL	L&T/UTCL		87.0	87.0
With L&T	GIL		83.2	78.3
With ACRL	ACL		84.0	84.0
Amalgamation	JAL		87.0	90.0
With Cimphor	SDCCL		111.0	102.0
With Dalmia(M)	OCLIL		85.0	76.0
With Italcementi	ZCL		84.4	82.0
With EIL	ACC		n.a	n.a
With ACC	EIL		n.a	n.a
Average			93.6	89.0
t' test value		-3.77	Critical Value	2.09
P value		0.00	Result	**SIG**

Table 6.59: The power consumption shows significant change similar to comparison of the mean values between pre event and post event. The hypothesis is rejected and there is considerable synergy involved in power saving post event in the Indian cement industry.

6.2.7. Coal Consumption analysis:

Table 6.60: **Trend analysis of Coal consumption between pre event and post event**:

	Years for pre event and post event				Years for post event					
Firm	**Units**	**-3**	**-2**	**-1**	**1**	**2**	**3**	**Pre event Mean**	**Post event mean**	**% change**
DCBL+DSL	Kgs/T	102	100	100	106	95	99	101	100	-1
SVCL	Tonne/Tonne	0.2	0.19	0.17	0.17	0.16	0.17	0.19	0.17	-11
ZCL	Tonne/Tonne	0.12	0.14	0.16	0.15	0.15	0.14	0.14	0.15	5
MyCL	%/T of clinker	11.76	13.17	13.88	14.67	17.21	16.82	13	16	25
NCL	k.cal /kg of cement	764	770	785	806	787	750	773	781	1
L&T(NCL)	Tonne/Tonne	0.17	0.16	0.15	0.14	0.13	0.13	0.16	0.13	-17
ACC (Holcim)	K.cal/Kg of clinker	765	759	736	736	752	754	753	747	-1
ACL(Holcim)	K.cal/Kg of clinker	729	728	715	730	742	744	724	739	2

Table 6.60 (Contd):

	Years for pre event and post event				Years for post event					
Firm	**Units**	**-3**	**-2**	**-1**	**1**	**2**	**3**	**Pre event Mean**	**Post event mean**	**% change**
SDCCL(GIL)	K.cal/Kg of clinker	768	788	758	768	769	808	771	782	1
GIL	Kg/Tonne	201	195	176	141	128.22	122.75	191	131	-31
ACEL	K.cal/Kg of clinker	n.a	728	738	787	794	831	733	804	10
ACL(ACEL)	K.cal/Kg of clinker	n.a	748	742	778	743	753	745	758	2
ICL+Raasi	%/Tonne	18.97	18.37	17.3	17.03	15.68	14.46	18	16	-14
L&T/UTCL	Tonne/Tonne	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.00
GIL	Kg/Tonne	129.51	127.61	135.7	127.1	95.12	96	131	106	-19
ACL(ACRL)	K.cal/Kg of clinker	742	729	728	715	730	742	733	729	-1
Jaiprakash	Kg/Tonne	140	143	141	147	145	0	141	146	3
ACC (EIL)	K.cal/Kg of clinker	815	800	782	765	759	736	799	753	-6
SDCCL(Cimpor)	K.cal/Kg of clinker	786	779	781	792	802	811	782	802	3
OCLIL	Kg/Tonne	118	109	101	100	84	106	109	97	-12

[146-238]

Table 6.60: Of the 20 cases where the data could be procured, in eleven cases there is decrease in coal usage post event and in eight cases there had been increase and in one case the change had been almost nil. This reflects overall the change is insignificant but there is lot of scope for improvement. The case of L&T and NCL reflects the improvement in the smaller player when an efficient big player takes over and translates good methods and systems. While L&T had a drop in coal consumption by 17%, NCL had a marginal change of 1% which reflects an area of need to apply bigger company's knowhow in the target company. A very good case of ICL and Raasi also exists when the bigger player ICL after merger was able to reduce coal consumption by 14%. When two pan India players GIL and L&T were involved the post event period reflected a reduction of 19% for GIL while L&T managed to maintain its low consumption levels. There is however an abnormal case involving a big player, GIL, taking over SDCCL. While GIL

managed to reduce consumption by over 31%, SDCCL usage increased by 1%. The OR of SDCCL had dropped to 60% on the third year post event and it's was a sick and ailing company with negative returns. The company had earlier been referred to BIFR before GIL took over. This is expected to have had effect on the need to improve in efficiency in energy usage.

6.3. Analysis of the firms by way of composite scores:

As per the weightages planned for various parameters the composite score of the companies has been made for every year during the analysis period.

Table 6.61: Weightages Planned:

	Weightages in %						
Firms	OPM	NPM	ROCE	D/E	OP.Rate	Power Con	M Share
Cement firms	15.0	15.0	15.0	12.5	12.5	15.0	15.0
EIL	25	25	25	10	15	n.a	n.a

Table 6.62: Composite score analysis details (no's):

Firm	Pre event			Post event			Pre event mean	Post event mean	Change
	(-) 3rd Yr	(-)2nd Yr	(-)1st Yr	1st Yr	2nd Yr	3rd Yr			no's
DCBL+DSL	9	8	1	9	13	10	6	10	4.5
SVCL(ZCL)	6	1	4	4	-9	-5	3	-4	-7.0
ZCL(SVCL)	3	0	-1	1	-5	0	1	-1	-1.9
MyCL	-1	0	-8	7	13	7	-3	9	12.4
NCL(L&T)	1	-7	-14	-5	-3	-2	-7	-4	3.2
L&T(NCL)	3	2	5	5	2	4	3	4	0.6
ACC(Holcim)	4	6	8	15	22	17	6	18	11.6
ACL(Holcim)	11	9	12	23	24	15	10	21	10.3
SDCCL(Gil)	-3	-2	-5	-17	24	-14	-3	-2	1.3
GIL(SDCCL)	3	4	5	3	9	9	4	7	2.9
ICL+Raasi	7	7	5	7	6	6	6	6	0.2
L&T/UTCL	5	5	2	1	5	13	4	6	2.4
GIL(L&T/UTCL)	5	7	11	12	12	15	7	13	5.8
ACL+ACRL	8	11	10	12	15	16	9	14	5.1
Jaiprakash	9	8	10	4	5	0	9	4	-4.7
SDCCL(cimpor)	80	47	15	-10	1	8	47	0	-47.2
OCLIL	4	5	8	11	5	8	6	8	2.6
ACC(EIL)	-2	0	1	2	5	7	0	4	4.8
Everest(ACC)	18	14	11	25	29	31	15	28	13.5
ACEL(ACL)	n.a	-1	-17	-32	9	8	-9	-5	3.8
ACL(ACEL)	n.a	8	6	9	14	21	7	14	7.0
ZCL(Ital)	n.a	n.a	4	9	12	12	4	11	6.7

(JAL data for third year not applicable as the event year was 2008-09, all the data's of were not available for the third year before the event in the case of ACEL and for two years in the case of ZCL (Ital))

Table 6.62: The scores have increased in the post event period in 18 out of the 22 cases. Out of the remaining the case of SDCCL gives extreme readings due to low capital outlay before the takeover. The composite score analysis gives an important aspect of synergy effect of M&A's. Since this is one of the main objectives of taking up an M&A in place of a green field expansion the aspect of the score improving in 18 out of the 22 cases is a very significant result. The overall performance of the industry shows significant positive impact of M&A's on the performances of the companies.

Table 6.63: Composite score analysis results:

Firm	Pre event mean Score	Post event mean Score	Post event 1st Yr	Post evt 3rd Yr
DCBL+DSL	6	10	9	10
SVCL	3	-4	4	-5
ZCL	1	-1	1	0
MyCL	-3	9	7	7
NCL	-7	-4	-5	-2
L&T	3	4	5	4
ACC	6	18	15	17
ACL	10	21	23	15
SDCCL	-3	-2	-17	-14
GIL	4	7	3	9
ICL+RCL	6	6	7	6
L&T/UTCL	4	6	1	13
GIL	7	13	12	15
ACL	9	14	12	16
JAL	9	4	4	0
SDCCL*	47	0	-10	8
OCLIL	6	8	11	8
ACC	0	4	2	7
EIL	15	28	25	31
ACEL	-9	-5	-32	8
ACL	7	14	9	21
ZCL	4	11	9	12
t Stat	3.54		1.89	
P Value	0.00		0.07	
critical	2.09		2.08	
Result	SIG		SIG @ 10%	

*-due to extreme values caused by low capital levels SDCCL value not considered.

Table 6.63: The‘t-test’ statistics value shows significant change between first year value and third year value of the composite score. When comparison is made between pre event mean and post event mean the‘t-test’ value shows significant improvement and the change is positive, with 18 out of 22 cases improving in scores. There are only three cases which have double figures as average score in pre event period but in post event period there are eight companies. When the analysis is made between first year and third year post event the statistical significance gets established. The p value is at .07 and is significant at 10% confidence level. The hypothesis is rejected and the conclusion is that M&A’s have significant impact on the composite performance of improvement post event.

6.4. Conclusion:

The financial parameters studied in this chapter reflect there is significant impact of M&A in the Indian cement industry. Between the means of pre event and post event the OPM parameter shows **significant** change and the average has moved up from 16.6% to 20.4% which is a good sign. The main players of the, the top four, UTCL, GIL, ACC and ACL have shown very increase in OPM in post event period.

The NPM change is **not significant** but the top four main players have got excellent impact of increase in NPM in post event period over pre event period.

ROCE when compared with mean of pre event and post event shows **significant** change and the change from an average of 14.5% to 23.9% is a very good indicator of improvement.

D/E ratio comparison shows **significant** change clearly at 10% confidence level. A reduction in D/E to less than ‘1’ is a very good improvement and needs to be considered significant.

In EVA, MVA and RONW there are reflections of the macro effect on the results.

When comparison is made between first year and third year results of post event period, the financial parameters OPM, NPM and ROCE show **significance** at 5% while D/E shows **significance** at 10% level.

The operational performance show **significant** change in different parameters. For the parameter 'OR', when the positive cases and negative cases are segregated and studied the results show significant changes. Among the negative cases; ACC (Holcim) had shown a reduction of 1% which is marginal; Mycl had come down from a level 96% to 94% and ICL had changed from 99% to 96%, where a OR value above 90% is considered very good in the industry; JAL, OCLIL and Dalmia were involved in capacity additions and hence the OR's are likely to fall due to gestation period of new plants.

The 'Power Consumption' change show **significance** which is a welcome need for the industry due to the power shortage in the country.

The 'Market Share' change show **significance** at 10% confidence level and at 5% confidence level itself the signs are good for the industry.

The coal consumption change is **not significant** but shows very good signs of improvement post event.

The composite score analysis reflect **significance** in change post event. This analysis showing significance is a very important result as it is a reflection of overall performance with the combination of financial and operational parameters.

Overall M&A's are reflecting **significant** impact on the overall performance improvement of cement firms in India.

After the analysis of the parameters and from the learnings as the next stage an event module has been prepared for the use of the Indian cement industry for future M&A deals.

Chapter-VII

Event module for Indian cement industry

For the Indian cement industry, based on the findings of the study a module has been prepared with the objective of making it be very useful for the industry for the future event activities. One of the significance of taking up this study was, though there has been increase in studies on M&A events in post liberalization era, a study for the cement industry was not done. Since cement forms one of the core sectors in India and since its growth is in line with the country's GDP growth, there are clear possibilities of companies restructuring their capital investments by way of M&A's in near future. With these under consideration a module has been prepared to be of use to the industry.

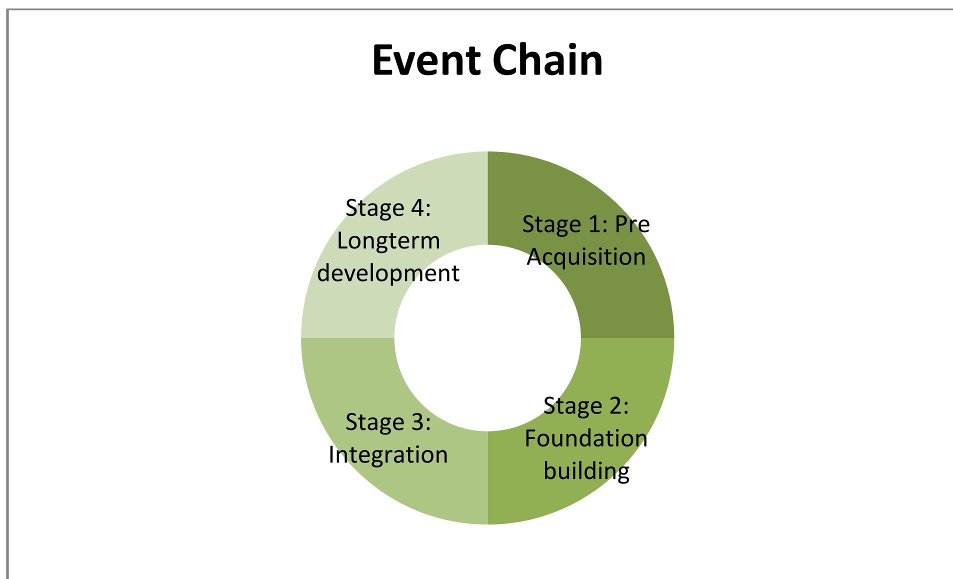
The acquisitions seen in the Indian cement industry has taken several sizes, shapes and forms [242]. The details can be depicted as below.

1. Mergers with a different company from the same industry- ICL with RCL.
2. Mergers with a subsidiary which is involved in other business- DCBL with DSL.
3. Amalgamations with subsidiaries which are in same business- ACC with Bargarh cements ltd and Damodhar cements.
4. Amalgamation with a subsidiary in related business- JAL's amalgamation of cement, real estate and construction businesses.
5. Takeover of ailing firms in the same industry- ACL takeover of ACEL, GIL takeover of SDCCL, L&T taking over NCL and ZCL takeover of SVCL.
6. Take over ailing firms by cement companies across the border- Heidelberg's takeover of Mysore cements ltd, Cimphor's take over SDCCL.
7. Takeover of company in related business and running as separate entity- ACC takeover of EIL.
8. Takeover of a division of another corporate- GIL takeover of cement division of L&T.
9. Takeover of performing giants by companies across border- Holcim's takeover of ACC and ACL, Italcementi's takeover of ZCL.

The different forms of M&A taking shape reflects the industry is continuously consolidating and when players across the border enter the country, the competition can be hectic in future as all the players who have entered are global players. With the combination of the above mentioned factors, for future M&A activities, four stages have been envisaged based on the present study [243].

The stages are 'Pre acquisition', 'Foundation building', 'Rapid integration' and 'Assimilation'.

Fig 7.1: In picturesque mode the stages can be depicted as below:



[243]

7.1 Pre acquisition:

Eye on targets: Across the country the performances of different companies needs to be monitored. The performance in both financial side and operational side apart from the image of the firm in influencing better pricing needs to be followed up. Fitness of the right target is one of the important aspects in cement due to variety of needs like manufacturing synergy and marketing synergy [244].

Cultural aspects: It has been seen from the studies that except for a few, majority of the firms are regional players. When expansion in other regions is one of the motives, as M&A's involve companies from different regions, culturally the teams are likely to be different. With in the

country different regions have different cultures. Also when the aspect of crossing the border for acquisition is considered cultural fitness and adjustments becomes an important need [244] [245].

Special team: A special team to do the due diligence in different aspects needs to be done. The special team can have a core team with a leader to carry out the work even after locating and deciding the target. Fitness in cement business can be tested for the target firms from the point of view of logistics, marketing, expansion of new areas, reducing operational rates, reducing power and fuel consumption and the financial aspects of debts and capital requirement. All these combined can help in success of the event and hence to be done using specialists in the field. Technology wise cement industry used the dry process mainly and technology transfer is not of high importance. Technology aspect is more to do with operational system improvements.

Logistics and its importance in fitness: Of the important areas described above all aspects other than logistics had been taken up due to lack of availability of company wise data for the cases involved. However since cost of transportation being high, cement being perishable commodity which needs huge temporary storage space, the logistics aspect had been studied by way of a survey. The survey was done taking urban areas of city of Chennai and its rural suburbs. From the customers point of view how important is logistics in the business was studied. The survey results were as follows.

During the month of December 09, a short study of "supply requirement of cement Consumers in Urban and rural areas" with reference to Chennai has been done. Customers from different pockets of the city and suburbs were selected. Different types of consumers were also selected from pockets of the city and the study was done. The survey was done using a questionnaire method to get their feedback. The feedback had been as follows:

Direct consumers:

- It was found most of the consumers were of the 'apartment building' type in city (more than 65%). Apart from this other consumers also exist in city and suburbs.
- Most of the consumers have building sites in multi locations. This signifies the 'multi-point delivery' need. Since transporters prefer single point delivery, the acceptance from transporters for this service gains importance.

- Most of the consumers give high preference for 'concreting work' (90% of the consumers). This means timely delivery gains significance for cement brands as concreting involves greater planning for consumers.
- While 28% of consumers get delivery within a day, others feel it takes more than 1 day. 24% of the consumers feel the delivery is varied i.e. unpredictable. This feedback shows there is room for improvement in reduction of time taken to delivery & being consistent in it.
- 78% of the consumers prefer supply lot of 5-10 MT. The importance of light commercial vehicle with loading capacity of less than 10 MT for transportation gains significance.
- 81% of consumers prefer delivery before noon. This feedback shows need for dispatch plan to gain edge over competitors.
- 27% of consumers do not have storage facility. This reflects that the cement companies cannot expect bulk orders from all sites always, as normally companies prefer bulk orders.

Retail consumers**:**

- Just one retailer among the population has big truck capable of being sent to factories for taking material. Thus, to improve market share with retailers', dispatch to retailers with company arranged trucks gains significance.
- 57% of the retailers find dispatches in a day. 43% find it takes more than a day. The areas which take longer time needs to be segregated and studied for improved service across all areas.
- 82% of retailers feel the need of dispatches of around 10 tons. Thus, 'multi-point delivery' acceptance of big truck (as big trucks loads more than 17MT) and increase in need of Light Commercial Vehicles (LCV) can be seen.
- 57% of supplies are seen to need a delivery for every 5mts. This also shows the need of multipoint delivery.

The above study reflects the importance of logistics for increasing sale with better customer service. When seeing the fitness of a target firm, the chances of improving customer service apart from reducing cost by reducing lead distance needs to be seen. From the research study it was found how GIL after taking over cement division of L&T shared the production facilities of

L&T to cater to the customers faster and also reduce the average lead distance to customers which can reduce costs for the companies.

The benefits that can be derived from the logistics aspects with the use of targets can be checked from the view points of improving the service, reducing the cost, increasing the productivity and increasing the market share as logistics has its impact on these in the industry.

Human capital of the target firm: Since human factors makes or breaks the usage of other resources, the fitness of the target firm from the human capital needs to be seen. If the target firm is high on human capital it can be used productively and if the acquirer has good human capital which can take additional workload and sharing the same may be used to make use of the target.

Negotiations: Shareholders approval forms such a key to approval of the scheme of events that the payment layout for a target must be without having to shell out more than what it deserves. After location of target, its enterprise value needs to be assessed. Before beginning any negotiation it is better to have the figures of 'enterprise value' of the target which can help avoid getting locked in high premiums. The assessment of the value can be done in several stages [66] [246].

Intrinsic value: When the target company runs as a separate entity, taking it as such at its current efficiency levels and growth rates, what could be the future cash flows and what would be the present value of such cash flows is the intrinsic value. This can be taken as the basic value of the target firm. If a profit making 'Target' Company can be acquired at the intrinsic value it can be considered as an advantage as when more and more events take place it is extremely difficult to get at the intrinsic value [247].

Market value: For a target company how much value is credited by the share market can be seen from the share price movement. If the future is good for the company and if it is seen to perform well under a given conditions of economy, share market is likely to appreciate its performance with good value. This value is also co-bidder values, as if other firms' eye on the same target then in all probability from the market they would quote the market value for acquisition.

Purchase price: This is the value which is at a premium over the intrinsic value that the target firm is willing to accept. Similar to acquirer the target company would have made calculations and would keep a value for acceptance of bids. This is the situation when negotiation plays a major role.

In the cases of our study the debt equity ratio post event had come down in majority of the cases (14 out of 22). Since debt forms an important component of usage with interest cost associated with it, the right purchase price with efficient negotiations can be seen in the overall cement industry and this needs to be considered as an important stage to be exercised using experts from the highest level of management.

Premium value: The difference between intrinsic value and purchase price is the premium value. If post event, synergies can take place to make target firm give good returns needs to be checked to know the worth of the premium.

Synergy value: The two managements can join to form synergy and improve profitability. In such case as a 'synergy company' what can be the future cash flows and what would be the present value of such cash flows is the synergic value. This is more of speculation and hope and involves lot of macroeconomic aspects and can be kept as a guide in negotiations.

Finalizing the price: Finally after the communications and negotiations a final price for purchase needs to be worked out and the deal price fixed.

7.2. Foundation building:

The plan for future: Jointly the managements can plan for the future actions. For future actions people involvement from both acquirer and target are required and hence for the plan at a senior level, heads from both the sides are to be involved.

In the current study it has been seen that the change been effective, in spite of the events taking several forms. For making improvement as a continuous process a strong foundation plan is envisaged as it can be jointly worked out. The initial plan can be case specific.

In the study the deal between L&T and GIL was so big; a plan for future was needed to be for over a year. On the other hand when ZCL took over SVCL the plant was not huge and in such cases a plan for a shorter duration may be envisaged. The plan needs to be case specific.

Company values: The acquirer and target companies will have corporate values and after take over, the new leaders have to be convinced of the acquirers' values. Here the acquirer can have an open mind to even amend some of its mission statement to improve coordination between the two companies.

Resources: Since cement M&A involves utilization of factories, facilities, customer network, brand addition or conversion, sufficient resources from different departments of the business needs to be fixed for future plans.

In our study in the case of GIL's deal with L&T, the cement division of L&T alone was purchased. The cement brand of L&T was sold in the name of 'L&T cement'. After purchase this name could not be used by GIL and hence had to change it and changed to 'UltraTech cement'. Converting an established brand to another is a herculean task and sufficient resources are needed. In the study we have seen the takeover of cement division had been successful for GIL.

7.3. Integration:

The integration can be done in different areas as given below.

In cement the areas can be divided broadly as manufacturing, finance, management, logistics and marketing. Human Resources (HR) department may be fitted for these divisions under two or three broad categories like 'HR' for marketing and distribution, 'HR' for manufacturing divisions.

Manufacturing: As seen in our study cement factories are concentrated on limestone resource areas. Hence accessibility and efficient quarrying is an area of knowledge two companies can share.

Use of both the brands of the companies as done by GIL after takeover also improves production.

Operational rates can be affected as the capacity additions can be faster than market development in the region surrounding the factory. In our study we have seen the case of DCBL suffering in productivity in spite of increase in sales quantities due to this reason. Thus, operational rates increase is a main objective for improving profits but the performance has to be seen with a caution as to at what pace a capacity addition had taken place.

Power consumption has seen significant change in the study and this can be achieved continuously with integrated efforts. The human resources from both the groups can be interchanged for improvement of power usage. Captive power generation investment by the management is also a way of self dependence coupled with efficient and cost effective use of power.

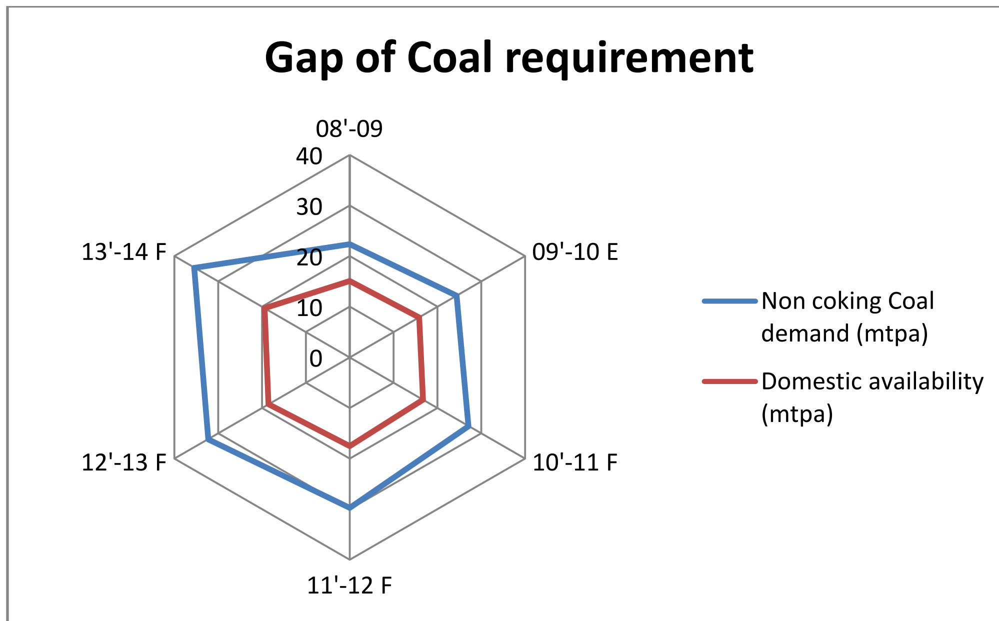
Coal consumption in manufacturing cement assumed importance due to the variety in the quality of coal, its availability and dynamic prices. While we have seen in our study that government allocates just 3.5% of the country's coal production for the cement industry, the efficient use of the material becomes important.

Table 7.1: The coal shortage in the country for the industry can be seen as below:

Details	08'-09	09'-10 E	10'-11 F	11'-12 F	12'-13 F	13'-14 F
Non coking Coal demand (mtpa)	22.4	24.4	27.1	29.7	32.3	35.5
Domestic availability (mtpa)	15.1	15.8	16.7	17.5	18.5	19.4
Gap (mtpa)	-7.3	-8.6	-10.4	-12.2	-13.8	-16.1

E- Expected, F- Forecast. Source: [248].

Fig 7.2: Gap of coal requirement widening for Indian Cement Industry:



The gap (table 7.1 and fig 7.2) can be fulfilled by imported coal but it suffers from price fluctuations. There is no development of captive mining in Indian cement industry as it exists in developed countries abroad. The research agency "Crisil" predicts increase in international coal prices for the next two years. The average cost of imported coal had been $55/MT in Sep 2009 and increased to $94/MT in March 2010 as per "Crisil". Considering these, synergic efforts in cement sector to reduce coal consumption are to be applied in cement sector.

Finance: As has come out from the study there is significant improvement in OPM and NPM between first year and third year post event. This shows the sector overall had been successful in M&A's. The success puts the needs on continued focus on applying finance judicially and also on reducing costs. When size of the company becomes big, it helps in procurement of finance at a lesser cost from financing institutions. The areas where cost reduction can be brought out in cement sector are manufacturing, distribution and market development.

Logistics: As shown by GIL efficient use of factories reducing the average distances of transportation to serve the customers is way of reducing logistics cost. ICL after its takeover of RCL merged together immediately which improved OPM to 27% for ICL immediately. When supplies are made quickly in cement the trucks come back to factory and load again. Truck availability in the open market is volatile and sometimes limited depending on season. For

example, in harvesting season truck availability can be lower. This implies when trucks can deliver quickly and come back it can have a direct effect on productivity, which will help improve OPM. The prices of cement brands are likely to be same over an area and hence if dispatches can be made to shorter distances at the same selling price the OPM increases.

Market share: Market share increase can be a main motive in an acquisition. In our study ACL acquired ACEL with a view of entry in the eastern part of India. The global players namely, Holcim, Heidelberg, Italcementi and Cimpor increased their global market share by making an entry in to Indian market through acquisitions. ICL after its takeover of RCL increased its market share. DCBL after consolidating its capital structure with merger of its own subsidiary DSL increased its market share by increasing its installed capacity and production. In 14 out of the 22 companies involved in M&A in Indian cement sector the market share had improved post event.

Main tool for increasing market share can be use of customer base of both the firms together even if they operate as separate companies. GIL-L&T, ZCL-SVCL, GIL- SDCCL, L&T-NCL, ACL-ACEL all had been domestic takeovers who did not merge the accounts immediately but used their marketing and management resources interchangeably for productive outputs. Use of the image or band equity of the bigger player who had taken over can be applied fruitfully as shown by L&T-NCL deal.

7.4. Long-term development:

Once the M&A event has taken right progress then long term plan can be implemented. One of the lessons of the study comes out as- 'the integration is not a one time or time bound process, but a continuous process'. After integration in different aspects of finance, manufacturing and others, how well the resources can be made as a long term investment needs to be seen. The way of expansion of existing factories, bringing additional products using the resources are areas of possibilities.

The fact that cement bricks are sold abroad by global players is a relatively new product for Indian region can be a way of expansion in Indian market. In India still the 'clay/sand bricks', which is an un-organized sector, is used for construction and there is irregularity in quality and supplies. Considering this the cement bricks sales is a real opportunity ahead. The growth projected in infrastructure for India reflects there can be good demand for the cement based

products like concretes, aggregates, and cement bricks apart from cement. Thus, these areas can be tapped for synergy and higher profitability and better service to the existing clients by the firms in the industry [38], [249], [250].

Chapter VIII

Conclusions and future scope of work

8.1. Conclusions:

8.1.1. Share price reactions on an M&A event:

For non cement sector: The study reflects Indian stock market maturing. There is no set pattern of returns for acquirers or target companies in non cement sector. The returns are case specific based on the availability of inputs to the public.

Across industries with respect to the variation in CAR values between companies the variation had come out as Significant in the ANOVA test. Acquirers and target firms do not get a set pattern of returns. The returns are case specific. Within a firm, with respect to the variation in CAR between the event days the result did not see significant change. The results which were varied reflect the variation between firms in their performances and the public's knowledge of the same.

For cement sector:

In cement sector also the maturity of the share market is visible from the results. For the same company based on the occasion of the 'M&A event' the results are varied. The case of ACC substantiates this finding. When it took over Bragarh cement (earlier named as IDCOL) in 2003 the CAR had been positive as the case was strategic and expansion oriented. When merger of Bargarh cement and Damodhar cement, which were subsidiaries, was announced in year 2004-05 the returns were negative. In May 2004 when L&T and GIL were involved in a tussle and when an agreement was arrived at and takeover announced openly, both the companies had positive CAR's. Within an years time when multinational Holcim took over performing local player ACC though it was also involved in a tussle and an agreement was arrived at the CAR's were negative. In this case the tussle was between two local leading players ACC and ACL and in between a player from abroad managed to make use of an opening and took over control of both the domestic companies which was not well appreciated by share market which reflects the returns are case specific and feedback based matured valuation of shares in taking place in India.

For acquirers and target firms there were no fixed pattern of returns. The study reflects that the shareholders take ‘M&A’s as an important event.

8.1.2. Financial Parameters analysis of M&A events:

Case of merger or takeover with different business:

In the study there are two cases of merger with different business. One is Dalmia cement bharat ltd with Dalmia sugars ltd and the other had been the amalgamation of Jaiprakash associates ltd of its real estate, steel and cement businesses with parent firm which is based on construction of projects.

In both the cases there had been improvement in OPM, ROCE during post event period. In case of DCBL the OPM had very sharp increase from 17% on the third year before event to 30% during third year after event. The NPM also seen to initially improve with DCBL before falling in the third year post event, and with JAL it had been consistent around 14.5%. But In both cases the D/E had increased to around 2. This is understandable from the capacity expansion plan of both the companies.

There had been a case of ACC taking over EIL which is basically a cement related but different business. EIL is a business body with sale of finished fiber based cement sheets. In this case both the acquirer and target have reflected excellent financial results post event. OPM, NPM, ROCE all have increased post event significantly and D/E has reduced post event for both. The deal has shown good financial impact for both the companies. Here it is pertinent to note that the effect of ACC over EIL, due to the high profile and size of the acquirer in relation to the target.

Cases of merger with other cement business:

There had been three cases of mergers between cement businesses. One was between ICL and RCL and the other between ACL and ACRL and the third between Dalmia cement Mehalaya ltd with OCL India ltd. The results had been mixed in the cases.

ICL had increase in OPM, Decline in NPM and ROCE and D/E increased over 2 post event.

ACL had marginal decline initially in OPM but NPM and ROCE increased post event. D/E had very good improvement coming down less than 0.5 post event.

OCL India has shown excellent improvement, post event, in all financial parameters of OPM, NPM, ROCE and D/E ratio.

Cases of takeovers of cement business:

The remaining cases have involved takeovers of other cement businesses. In some case it had been cases of taking over struggling firms. ZCL takeover of SVCL, Heidelberg takeover of MyCL, L&T takeover of NCL, GIL takeover of SDCCL, ACL takeover of ACEL, Cimpor takeover of SDCCL have all been cases of target firms financially not in a healthy shape. The other cases namely of Holcim takeover of ACC and ACL, GIL takeover of L&T's cement division, Italcementi takeover of ZCL had been takeover of profit making businesses.

In SVCL case the financial parameters have not shown improvement and the NPM had declined post event. The OPM and ROCE had remained positive but declined post event. The D/E ratio which was very high at over 7 during takeover had reduced to 4 by third year post event. In the case of acquirer ZCL also OPM had been inconsistent but remained positive. NPM had declined more after being negative already before acquiring. The ROCE had also declined post event. D/E had reduced to 0.56 on third year from being over 1 at the time of acquisition. The results show the deal had not made much impact on financial improvement in the cases.

Heidelberg takeover of financially struggling company MyCL had shown significant impact financially. OPM had turned around from negative to over 17%, NPM had turned around from negative -21% to positive 16%, D/E had turned around to getting wiped off almost entirely, ROCE had turned around from negative to positive over 34%. Between first year after takeover and third year also the changes are significant in all the parameters towards betterment. EVA had turned positive from being negative in the first year of takeover, RONW had also turned positive after being negative in the year of takeover, MVA after takeover had been good but suffered sharp decline on the third year in 2008 due to sharp fall in share prices. But during the year 2008 there had been fall for many companies across sectors due to global crisis. The impact of M&A had been significant towards improvement in the case.

NCL, the then struggling company, after takeover by L&T had its OPM turned around from negative to positive, NPM had remained negative but there is significant improvement over being more than -20% to getting reduced to level of -6.5%. D/E ratio which was well over 2 got

reduced to 1.4; ROCE had turned around from negative to positive. Financially the takeover had good impact of betterment on the firm. L&T had marginal decline in OPM but remained positive and stagnant and improved between first year and third year of takeover significantly from 10.7% to close to close to 12.8%, NPM had remained positive but stagnant, D/E had not changed much and remained around 1 which neither high nor low, ROCE had shown significant improvement between first year and third year of the event. EVA had shown improvement in all three years' post event, MVA had remained healthy but declined during the three years' post event, RONW had improved from 8.8% to 10.38% post event. From the aspect of synergy of improving from first year to third year there is significant impact of takeover on the firm.

GIL had taken over a BIFR referred company SDCCL. For the target the OPM had turned positive on third year post event after being negative earlier, NPM remained negative but had good improvement in getting reduced to -19% from -29% earlier, ROCE had shown extreme values due to low capital employed, arising out of continuous losses eroding the reserves. EVA from -67% at the time of takeover had improved to -30% on the third year, MVA had declined and RONW had remained negative but shown improvement between first year and third year. GIL on its part had made strategic investment and had good OPM, NPM and ROCE. D/E also had come down from 0.91 to 0.6. The same year GIL had also takeover a mini plant named Dharani cements in Tamil Nadu and expanded with green field plant of 2 mtpa near Dharani plant. EVA had remained negative in the three years and had been oscillating, MVA had also been fluctuating in the three years, and RONW had improved from 6% to over 12% in the period. Overall the takeover had mixed results on the acquirer and target.

ACL in late nineties as a strategic plan of expansions took over ailing company Modi cement ltd., which got renamed as Ambuja cement eastern ltd. The OPM had turned around from negative to positive from -31% at the time of takeover to 7.6%, NPM had remained negative after showing recovery in second year, ROCE had turned around to positive at 24% from being negative in the first year of takeover. D/E had remained bad with carryover of losses. ACL the acquirer had significant improvement in all financial parameters of OPM, NPM, ROCE and D/E had come down from 1 to 0.8. EVA had turned around from Rs.-255 crores to Rs. -148 crores. MVA had improved substantially from Rs 852 crores to Rs. 1375 crores. RONW had improved from 12% to 28%. The takeover had positive impact on both the acquiring and target companies.

Holcim takeover of ACC and ACL had happened with one year gap and both were profit making major players in the industry with all India presence. OPM, NPM, ROCE all had significant improvement for both the companies. D/E reduction had also been significant for both getting reduced to 0.1 and 0.5. Between first year of takeover and third also the improvements in this parameter has been significant for both the firms. EVA of ACC and ACL had been improving in the post event period. The year of 2008 was a year of global recession and market fall, and hence the EVA which is taken as a composite value was quite possible to decline due to macroeconomic effect. MVA had been substantially good for both the companies before falling in the year 2008. RONW had been sound for both but on the third year had fallen for both due to drop in profits after recession. Overall takeover had significant impact of improvement financially on both the companies.

GIL takeover of L&T's cement division was another major deal in the industry and here also for both target and acquirer there had been significant improvement in all the financial parameters of OPM, NPM, ROCE and reduction in D/E ratio. EVA, MVA and RONW all had significant improvement in the post event period for both the acquirer and the target showing the takeover having significant impact on the companies.

Cimpor of Portugal had taken over SDCCL from GIL and has made strategic entry in to India with the purchase. All the parameters of OPM, NPM, and ROCE have shown significant improvement on third year post event after struggling in the first year post event. D/E also got reduced substantially. EVA had been oscillating, MVA had suffered due to fall in share prices in year 2008 across industries and RONW had turned around from negative in first year to positive in third year. The takeover had significant impact of improvement financially on the target.

Italcementi takeover of ZCL had shown significant improvement in OPM, NPM, D/E and ROCE. The takeover by the MNC has shown excellent improvement on the target company.

Overall performance of financial parameters:

The overall finding is there is good impact of M&A on the financial performance of the cement companies in India. The aspects of OPM, ROCE when compared as mean values of pre event with post event show significance in change, and when compared between first year and third year post event also show significant improvement. D/E ratio shows significant change both as

mean value comparison between pre and post events as well as when compared between first year and third year post event.

In 14 cases out of 22 there has been increase in average value of OPM in post event period over pre event. The four top players of Indian cement Industry GIL, UTCL, ACC, ACL have shown significant improvement in post event mean values which can be a good inference of the industry as the four have a 40% market share of the country. When the comparison is made between 1st year and 3rd year performance post event the statistical inference with t-test is ‘Significant’ change. It is also observed that 18 out of 22 cases have shown improvement in OPM. The average had gone up from 16.8% to 23.2%.

The mean NPM in post event period does not show significant change but here also in 13 out of 22 cases there has been improvement in post event period over pre event which is a very good sign. In this parameter also the four top players have shown significant improvement. When comparison is made between first year and third year the change is ‘Significant’ with p value being 0.046. Here in 14 out of 22 cases there has been improvement.

In the case of ROCE there are 13 cases out of 22 which had shown improvement in post event mean values over pre event period, and the overall change had been significant. These are excellent signs for the industry. The top four players have shown remarkable improvement in post event period. When the comparison is made between first year and third year the overall change is ‘Significant’ with‘t-test’. In 15 out of 22 cases there had been improvement.

D/E had shown ‘Significant’ change at 10% confidence level in both mean value comparison as well as between first and third year performances. But up on considering the D/E had come down below 1 from being 2.4 in mean values comparison and below 1 from a value of 1.1 in comparison between first and third years the change is a additional positive inference.

EVA addition has the effect of macro economics in Indian cement industry. When events are coupled with good business cycles the returns are good and when good corporate (L&T, GIL, ACL, ACC) have M&A event in bad business cycles they have fall in EVA values. However between first year and third year post event there are good signs of improvement in EVA values.

MVA of the firms show share market views the industry with lot of feedback. Indian share market appears matured from the results. For some big companies (L&T, GIL) when EVA's are negative the MVA's are positive. That is, the share prices are good hoping for good performance in the given circumstances and for a good future. The stocks may be viewed as long term investment by the investors.

RONW has shown very good results with majority of the cases, 13 out of 16, showing improvement in ROCE in the post event period.

8.1.3. Operational Parameters analysis of M&A events:

Case of merger or takeover with different business:

DCBL had drop in OR post event but the exceptionally good power usage had been maintained. The standard set by industry is a use of 120 KwH/T but the usage of DCBL at 74 KwH/T is one of the lowest in the industry. The Market share had increased post event. The OR drop has to be considered against the fact that the capacity addition was very high at 3.3 mtpa against a pre event level of 1.2 mtpa. The drop in OR can be attributed to the new plants gestation period. As can be seen from the performance the production had gone up from 1.6 mtpa to 3.3 mtpa within two years which is an excellent development. Coal consumption had decreased post event by 1% which is a welcome sign as coal is in shortage in the country. Overall, the impact of merger had been good for the company operationally.

JAL after its amalgamation has slight drop in OR and marginal increase in power usage. Of these the OR drop needs to be seen against capacity addition done by the company from a level of 7 mtpa to 19.1 mtpa. The MS had increased for the regional player of North and western part of India. The regional production had a fall in the region in the year 2009-10 but the company's market share had increased which is significant. In coal usage there is a marginal increase of 3 % which is not significant but considering the preciousness of the material in the country must be considered as an area that needs improvement. The amalgamation operationally had shown significant impact and a good increase in MS is very important, which is a very important factor considered for the amalgamation undertaken by the company.

EIL after being taken over by bigger firm ACC has shown significant change in OR. Since the manufacture is of fiber sheets, the MS and power and coal consumption are not tabulated for the firm.

Cases of merger with other cement business:

ICL had shown slight decline in OR between pre event and post event mean values getting reduced from 99% to 96%, but still it is an excellent level of performance. Power consumption had reduced from 115 to 101 KwH/T which is quite a significant improvement. In coal usage there is significant reduction by 14%. Here the OR can be seen from the fact of adding capacity from 2.8 mtpa to the level of 6 mtpa. Considering the gestation period of new plants an OR of 83% is good which has helped the MS to go up significantly to 21.9%. Overall the merger has had significant impact on the company in improving operationally. Between first year and third year there is not significant change in the results of the parameters, but the performance levels are good.

With ACL merger with ACRL there is significant improvement in OR, getting over 139%. Any OR of 100% is considered as very good and so the improvement is significant. The MS and power consumption change had not been significant. But any power consumption less than 90 is an efficient performance. Coal consumption had been near stagnant with a slight improvement of 1%, at around 730 K cal/Kg clink against the industry norms of 800. During the period capacity additions had gone up at all India level and hence in spite of improved production the MS had not shown much change.

OCL India has had drop in OR to around 57% in post event. Here too capacity addition had been steep from 2 mtpa to 5.3 mtpa. Power consumption has shown significant reduction from 91 to 76 units per tonne. MS has shown significant improvement for the eastern region player, which is welcome as it was one of the main considerations for capacity addition.

Cases of takeovers of same business:

SVCL after takeover by ZCL has got drop in OR, Power usage has shown significant improvement in reducing by more than 10%, MS has declined. Coal usage has shown significant reduction by over 10%. The takeover reflects mixed results operationally for the target firm. ZCL

has improvement in OR and Power consumption reduction. The MS had reduced due to capacity additions in the region. Coal consumption had gone up by 5%, which is an area of concern. The acquirer's performance reflects improvement in three of the four parameters.

MyCL after takeover by Heidelberg has improved in OR in the first two years post event, Power consumption efficiency had remained stagnant, MS has got reduced in growing market, Coal consumption had gone up substantially by 25%. Takeover has mixed results operationally for MyCL. Considering that the market had grown from 35-40 mtpa to 60 mtpa and the capacity addition had also been there for the company from 2.1 to 3.06 mtpa, the MS decline should not have happened, except for the need of stabilization of the factory after expansion.

NCL after takeover by L&T had good improvement in OR from 66 % to 85%. Power usage had come down from 110 to less than 100 KwH/T. MS had improved from 2.38% to nearly 4% for the regional player. Coal consumption reduction from over 800 units in first year to a level of 750 in the third year is an excellent development. L&T had OR drop to 75% from being over 89%. Power reduction had been significant to 91 KwH /T from 106 KwH/T. Coal usage had also reduced by over 17%. The takeover had operationally significant positive impact on both the companies.

SDCCL after takeover by GIL in late nineties has drop in OR significantly, Power usage reduction has been there but not significant. MS has dropped significantly. Coal consumption had increased by 1%, but in the third year post event had crossed over 800 mark which is not a welcome sign. SDCCL had been referred to BIFR and was taken over by GIL. Takeover had significant decline in operational performance for the target company, and can take solace from the fact that it is on the path of revival. GIL had significant improvement in OR going up from 65% to 92%. Power consumption had significantly reduced from 110 to 89 KwH/T. MS had improved from 12.6% to 23.7%. Coal consumption had come down by 31%, but the base value was poor. The takeover had significant improvement for the acquirer.

ACEL takeover by ACL has ACEL significantly improve OR from below 90% to over 100%. Power consumption had come down from 103 to 87 KwH/T. MS had remained nearly stagnant. Coal usage had increased by 10%, which is an area of concern. ACL the acquirer had significant improvement in OR to well over 100%. Power usage reduction also had been significant from

110 to 89 KwH/T. MS had improved from pre event level of 12% to over 13% and once crossing 15% for the region. Coal usage had gone up slightly by 1.7%. The takeover has had significant improvement operationally on both acquirer and target companies.

Holcim had taken over both ACC and ACL within a short time of one year. ACC had improved in OR by maintaining it around 90% in spite of capacity additions. Power consumption had come down from 90 to 87 KwH/T. Average MS had dropped slightly below 12% from being over 13%. When MS drops in spite of good improvement in OR then it means capacity additions and market development having taken place at a very good pace. ACL had OR crossing 100% post event and still MS had come down due to market development at all India level. All India cement manufacturing capacity, which was at 127 mtpa just prior to the event and had gone up to 168 mtpa by the third year post event. Coal consumption had dropped marginally by 0.8%. ACL had drop in OR, from being above 100% once to 80% on third year post event. Power usage had been efficient, 86 KwH/ T, and the efficiency had been maintained. MS had improved from 8.8% to 10.5% on the third year post event. Coal consumption had slight increase of over 2%. Considering the capacity additions, the existing efficiency levels of power usage and coal usage, the impact of takeover had operationally significant change in ACC and good improvement in ACL though the operational changes are not significant as the performance standards were quite high for both the firms.

After GIL takeover of cement division of L&T, L&T productivity had gone up significantly from an average of 74.7% to 80.62%. There is efficiency in power usage at 87 KwH/T. MS had come down due to capacity additions in the country going up from 127 mtpa just prior to take over to 155 mtpa by the third year. UTCL had not added capacity addition during these years and increased productivity of the existing plant with increase in OR. Coal consumption which was efficient at 0.13 T/T (against industry norms of 0.15 T/T) and been maintained. GIL has had significant improvement in OR going up from 85% to over 100% post event. Power consumption had dropped significantly from 87 KwH/T to 78 KwH/T. MS had dropped marginally from average of 10.41% to around 9%. Considering the increase in all India capacity additions and the fact that GIL and UTCL was one of the biggest deals with high capital outlay the corresponding capacity additions were not fast with the companies immediately after the event. GIL has long term plans and the deal with L&T is strategic with long term view. Coal consumption had

reduced in GIL post event by 19%. Considering the context the reading is the takeover has had significant impact on both the companies.

After Cimpor takeover of SDCCL, the OR of target had improved from 87% to 91.38% which is good but not significant considering the fact that in spite of being a small player and capacity not getting added the OR had improved only by 4%. The power consumption had reduced from 111% in first year to 103% which is good sign. MS had dropped from around 2% in the region to less than 1.88%. Between first year of takeover and third year there is significant improvement in OR, power consumption reduction and market share, but coal consumption had increased from 792 to 811 K cal/Kg of Clink between the years. Operationally overall the takeover has had significant impact of improvement with the company.

ZCL after takeover of Italcementi had significantly improved in OR from 75% pre event to 97%, but MS had dropped due to increase in capacity additions in the southern region from around 43 mtpa in year 2005 to 60 mtpa in year 2008, but the company had not added capacities in the period.

Overall performance of operational parameters:

The operational parameters have also shown to have significant impact from the M&A's in the Indian cement sector. 'OR' has shown significant change, 'Power consumption' has also shown significant change, 'Market share' has shown significance at 10% confidence level and 'Coal consumption' reduction had not been significant but the direction is positive and signs are good.

The overall performance of 'OR' have shown significant change when the improvement cases have been segregated and tested. By the same way when the cases of 'OR' decrease have been taken separately and seen they also show significant decrease. Thus, with respect to 'OR' when change had been good it has been significant and when the change was bad then also the change had been significant.

Overall 'Power consumption' reduction has shown significant change when compared between pre event and post event and when compared between first year and third year post event. 't-test' values and p values in both the cases have reflected 'Significance' with nearly five units per

tonne on the average values. The p value had been near ‘0’ in both the‘t-tests’. M&A have had significant impact on improvement in power consumption.

The overall ‘MS’ change between pre event and post event has shown ‘Significance’ at 10% confidence level with ‘p’ value being 8%. The‘t-test’ value was 1.8 against the critical value of 2.09, at 5% confidence level.

In overall analysis of coal consumption reduction in 10 cases there has been reduction and in 1 case the good efficient level had been maintained by L&T. In 9 other cases there have been increase in usage. The overall impact is not significant but the events does show good signs with leading players UTCL, GIL, ACC, ACL, ICL, who consume over 45% of the market share in the country leading the way with efficient usage.

The overall composite performance shows significant impact of M&A on improvement in performance, post event. The pre event and post event means show very good signs with eight companies getting in to double figure scores post event.

8.1.4. Composite analysis of combining financial and operational parameters:

The composite score analysis has been done to see the combined effect of financial and operational parameters on the cases involved in an M&A event.

The‘t-test’ of the composite scores comparison between pre event and post event shows significant change and when compared between first year and third year post event has shown ‘Significance’ at 10% confidence level. When compared between pre event and post event periods, the fact that 6 companies which had not got double figure score managed to get it post event is a very good indication of improvement. The companies are DCBL, ZCL(Ital), ACL(ACRL), ACL(ACEL), GIL(L&T), ACC(Holcim). All are leading players at all India level or at regional levels. The fact that 18 companies out of 22 have shown improvement in scores is an excellent result.

8.2. Specific contributions:

Profitability parameters: For development of economy profitability of companies is a great need. Cement, being a core sector of the country, needs to develop as an industry and support the

country’s economic growth. When infrastructure expansions and economic developments happen in a developing economy and if an industry is closely associated with it, like Indian cement industry with a growth of 1.2 times the country’s GDP in current decade, M&A’s are likely to increase. When such activity related to economy happens and when it is studied and found that it helps profitability it is of great contribution to the country. In this study undertaken when taken as synergy after the event of merger or acquisition the improvement in OPM, NPM, ROCE and RONW had been significant.

Leverage parameters: The ‘D/E’ ratio reduction coming under 1 overall is a significant improvement for a business like cement manufacturing which needs huge capital outlay. ‘D/E’ ratio had shown ‘Significant’ reduction when compared between first year and third year post event as well as between pre event and post event period. This is a very good indication of helpful balancing act in the cement sector.

Shareholders value addition: The EVA improvement of major players in booming period this decade between years 2005-2007 reflect the good macroeconomic effect on the industry. It shows the industry is in line with macro economics and when country’s development takes place investment in the cement industry can be done with positive hope when it can be coupled with good management.

MVA as seen from the results show the maturity of the share market in valuing the companies with good insight. For good corporate like L&T, GIL, ACC, ACL when EVA had struggled the MVA had been positive which shows shareholders appreciation of the companies as assets with hope of better performance.

Support for the country: Out of 16 cases on six occasions struggling companies were taken over or merged by bigger players. They were ZCL takeover of SVCL, Heidelberg takeover of MyCL, ACL merger of ACRL (BIFR referred case), L&T takeover of NCL, GIL takeover of SDCCL (BIFR referred case), and ACL takeover of ACEL (BIFR referred case). When this happens this is an indication of consolidation in the industry. All these BIFR referred cases were registered under ‘Sick Industrial Companies (Special Provisions) Act, 1985’.

When a company is struggling and when another company is able to take it and improve or make it survive, it is a great boon for the industry, for the human lives involved as staff of ailing

company, and the country's economy. The shareholders value also gets survival; as otherwise a sick company's shareholders would have lost their values.

Event Module: With the use of the study an event module has been prepared bringing out sector specific factors. The module is divided in to four stages and within each stage the finer points have been presented. This has been done with aim of the study being useful for the Indian cement industry in future M&A cases.

8.3: Further scope of work:

- The study had been done for Indian cement industry which can be extended to other countries or at a global level.
- The study can be extended to other sectors associated with infrastructure development like constructions, projects, and other building materials such as tiles, sanitary wares, paints etc.
- The share price return analysis has been confined to a short period in the study as it was basically to know the share holders maturity level in the country in reacting to an important event like M&A. If the share price movement over a longer period of few months are taken then the shareholders reactions to economic developments at macro level can be studied for cement industry itself as well as for any other sector which has major players listed in stock exchange.
- There are four multinational players who were part of the study. A study can be done to see the comprehensive performance at global level and at domestic level of the multinationals in the cement industry.
- In future manufacturers from India may go abroad and in such cases a comprehensive study can be done taking purely cross border cases.
- In Indian cement sector vertical M&A is just starting. For example the 'Ready Mix Concrete (RMC)' division of L&T was sold to multinational player Lafarge in 2007-08. RMC uses cement as the raw material and the purchase is a vertical integration. In future more such cases can come up and vertical M&A cases can be specifically taken for impact of M&A on their performances.
- Legal aspects of M&A's in the industry can be analyzed deeply.

- Specific case of M&A can be taken and the bottle necks undergone to complete the deal and integrate future actions can be taken up for study to alleviate the same.
- Time duration for each portion of an M&A activity can be studied to know how to improve the efficiency.

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