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CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
1.	SERVICE QUALITY DIMENSIONS IN RETAIL SETTINGS: AN EMPIRICAL STUDY AT SELECTED APPAREL SPECIALTY STORES OF MUMBAI <i>DR. SUDHEER DHUME</i>	1
2.	REDUCING HEALTH INEQUALITIES: KERALA COMPREHENSIVE HEALTH INSURANCE SCHEME A ROLE MODEL FOR DEVELOPING COUNTRIES <i>DEVI NAIR & KORA TUSHUNE</i>	6
3.	FACTOR AFFECTING FOREIGN DIRECT INVESTMENT (FDI) INFLOW IN THE BUILDING AND CONSTRUCTION SECTOR <i>DR. S.A. BUSTANI, I.S. YESUFU, E.A. UFUAH & DR. S.M. JIMAH</i>	13
4.	ESTABLISHING CRM IN SMALL ENTERPRISES <i>BORIS MILOVIC</i>	18
5.	FINANCIAL DEVELOPMENT AND AGRICULTURAL SECTOR GROWTH IN CAMEROON <i>DR. ARMAND GILBERT NOULA & NEBA CLETUS YAH</i>	22
6.	ECONOMIC COST IMPLICATIONS OF THE USE OF GENERATORS AS ALTERNATIVE SOURCE OF ENERGY IN KANO METROPOLIS - NIGERIA <i>DR. AHMAD MUHAMMAD TSAUNI & ABUBAKAR HASSAN</i>	28
7.	FACTORS INFLUENCING PATIENT'S DECISION OF SELECTING A HOSPITAL <i>MOHAMMED ARIF RAZA</i>	34
8.	AVAILABILITY AND AWARENESS OF MICROFINANCE IN JAMMU & KASHMIR STATE <i>MUBASHIR NABI & DR. ASHOK AIMA</i>	40
9.	RURAL LIVELIHOOD MARKETS AND ECONOMIES <i>DR. NITIN RAGHUNATH ZAWARE</i>	48
10.	NREGA UNDER SOCIAL AUDIT: A SWOT ANALYSIS <i>S.P. NAGANAGOUD & DR. H. H. ULIVEPPA</i>	51
11.	PERCEPTION AND PRACTICES OF INDIVIDUALS ON PUBLIC HEALTH CENTRES <i>V. SANGEETHA, DR. G. PAULRAJ, DR. S. RAMESHKUMAR & L. DINESH.</i>	56
12.	THE EFFECT OF MERGERS AND ACQUISITIONS ON SHAREHOLDERS' WEALTH – AN EMPIRICAL ANALYSIS <i>DR. S. VANITHA & DR. M. SELVAM</i>	59
13.	A STUDY ON ROADSIDE FOOD STALLS IN TIRUCHIRAPPALLI CORPORATION WITH SPECIAL REFERENCE TO FOOD INDUSTRY AND HOTEL INDUSTRY <i>DR. J. MOHAN RAJ</i>	70
14.	BIOFUELS CONSUMPTION IN EASTERN HIMALAYAS HOUSEHOLDS - AN EMPIRICAL ANALYSIS <i>DR. RABINJYOTI KHATANIAR & DR. BIDYUT JYOTI BHATTACHARJEE</i>	75
15.	IMPACT OF WOMAN EMPOWERMENT THROUGH MICRO FINANCE INSTITUTES: SOCIO-ECONOMIC AND BEHAVIORAL PERSPECTIVES AFFECTING TO RULER SEGMENT WOMAN OF GANDHINAGAR IN GUJARAT <i>URVI AMIN & BANSI PATEL</i>	81
16.	A STUDY OF BANK TRANSACTION COST OF PCARDBS IN MYSORE DISTRICT <i>DR. C. MAHADEVA MURTHY & DR. VEENA. K.P</i>	89
17.	WOMEN ENTREPRENEURSHIP THROUGH SELF-HELP GROUPS: A CASE STUDY OF TIRUNELVELI DISTRICT, TAMIL NADU <i>A. ANGEL ANILA</i>	93
18.	HANDLOOM AS AN ACTIVITY TO ENSURE FOOD SECURITY SPECIAL REFERENCE TO WEST BENGAL <i>CHITTARANJAN DAS</i>	97
19.	AGRICULTURAL INFRASTRUCTURE DEVELOPMENT IN THE GENERATION OF INCOME AMONG THE SMALL AND MARGINAL FARMERS <i>DR. C. GUNASEKARAN</i>	102
20.	FACTORS INFLUENCING THE EFFECTIVE FUNCTIONING OF THE SELF-HELP GROUPS - AN ANALYTICAL STUDY <i>DR. M. GURUPANDI</i>	104
21.	PUBLIC DISTRIBUTION SYSTEM IN TAMIL NADU NEEDS DEFINITE OVERHAULING <i>DR. S. MAYILVAGANAN & B. VARADARAJAN</i>	108
22.	PERCEPTION OF ORGANIZATIONAL CLIMATE: A STUDY OF SMALL ENTERPRISES IN AMRITSAR <i>DR. GURPREET RANDHAWA & KULDEEP KAUR</i>	110
23.	ROLE OF EXCESS OF MALES IN MARRIAGE SQUEEZE OF INDIA AND ITS EAG STATES <i>RANJANA KESARWANI</i>	114
24.	PERFORMANCE EVALUATION OF MUTUAL FUNDS IN INDIA: AN APPLICATION OF RISK-ADJUSTED THEORETICAL PARAMETERS <i>JOITY TOMER</i>	120
25.	SMALL FAMILY NORMS IN INDIA AND ITS QUALITATIVE IMPLICATIONS ON CHILD CARE: A MULTIVARIATE ANALYSIS <i>RITWIKA MUKHERJEE</i>	134
	REQUEST FOR FEEDBACK	142

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THE EFFECT OF MERGERS AND ACQUISITIONS ON SHAREHOLDERS' WEALTH – AN EMPIRICAL ANALYSIS

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ABSTRACT

Corporate Restructuring has become a major component in the financial and economic environment all over the world. Industrial restructuring has raised important issues for business decisions as well as for public policy formulation. Since 1991, Indian industries have been increasingly exposed to both domestic and international competition and competitiveness. Hence, in recent times, companies have started restructuring their operations around their core business activities through Mergers and Acquisitions (M & As). But M & A is an area of potential good as well as potential harm in corporate strategy. It is necessary that management always pursues policies so as to maximize the shareholders' wealth and ensures that shareholders do not suffer due to wealth decreases as a result of their company merging with other companies. Therefore, an attempt has been made to analyze the security returns and to find out the net wealth increase or decrease to the shareholders. Hence the proposed evaluation study on mergers and acquisitions of manufacturing companies. In India, there are totally 58 manufacturing companies which have undergone mergers and acquisitions during three years pre and post mergers and acquisitions periods. Thirty percentage from the total population was taken as sample size (i.e. 17 companies out of 58). The present study is mainly based on secondary data. In order to analyze the effect of share price reaction resulting from M & A, Cumulative Abnormal Returns, Market Model and Market Adjusted Model have been used as tools of analysis.

KEYWORDS

Corporate Restructuring, Cumulative Abnormal Returns, Market Adjusted Model, Market Model, Mergers and Acquisitions.

INTRODUCTION

The Mergers and Acquisitions (M&As) were, in the beginning, prevalent only in the economically advanced Western Countries but they have become relatively popular in India in recent times, particularly after the economic reforms of 1991. Though the enthusiasm towards M&As of firms in any country can be attributed to economic and cultural characteristics of the people of that country, M&A has become mandatory for many industries in our country. It is important to note that corporate sectors have come to face more intensive competition in domestic market after India has embarked on financial deregulation and liberalization. The M&A has become an alternative strategy for many companies in our country to avoid competitiveness, to gain latest technology and to achieve internal growth. Merging of two firms, involving the same nature of business activity, has nowadays become popular in India. Many researchers worldwide have empirically found that the shareholders' wealth of the acquiring firms decreased while it increased in the case of acquired firms. A company may grow internally, or externally. The objective of the firm in either case is to maximize the wealth of the existing shareholders. Most corporate growth occurs by internal expansion, which takes place when a firm's existing divisions grow through normal capital budgeting activities. The mergers, takeovers, divestitures, spin-offs and so on, referred to collectively as **Corporate Restructuring**, have become a major trend in the financial and economic environment all over the world. The industrial restructuring has raised important issues both for business decisions as well as for public policy formulation. On the more positive side, M&As may be critical to the healthy expansion of business firms as they evolve through successive stages of growth and development. The successful competition in international markets may depend on capabilities obtained in a timely and efficient fashion through M&As. The competitiveness has become imperative for survival. Hence, in recent times, companies have started restructuring their operations around their core business activities through M&As. Indian manufacturing industry is classified into seven categories - Food & Beverages, Textiles, Chemicals, Non-Metallic Mineral Products, Metal and Metallic Products, Machinery, Miscellaneous Manufacturing and Diversified.

STATEMENT OF THE PROBLEM

It is true that dramatic events like mergers, takeovers, restructuring and corporate controls occupy the Indian business newspapers almost daily. Further, they have become central focus of public and corporate policy issues. Some assert that the activities of mergers and acquisitions represent a new force in creativity and productivity. Some others view it as a blight on our economy. Regardless of these views, they do represent a major trend in the contemporary and economic environment. This is an area of potentially good as well as harm in corporate strategy. If management pursues policies of shareholders' wealth maximization, then shareholders should not suffer as a result of their company merging with other companies. Therefore an attempt has been made to analyze the security returns in order to find out whether there was the net wealth increase or decrease to the shareholders. Hence the proposed evaluation study on mergers and acquisitions. This study attempts to assess the success or otherwise of mergers and acquisitions as a strategy.

OBJECTIVES OF THE STUDY

The present study proposes to study the reaction of security prices to the announcement of merger and acquisition decision.

HYPOTHESES OF THE STUDY

The present study tests the following null hypothesis.

There is no significant change in the shareholders' wealth of acquiring firms in the event of mergers and acquisitions.

METHODOLOGY**SELECTION OF THE SAMPLE**

While selecting sample companies, all industries coming under manufacturing sector were taken into consideration to constitute the total population. In the manufacturing sector, there are totally 58 companies which have undergone mergers and acquisitions during three years pre mergers (i.e. is 2000, 2001, and 2002) and post mergers three years (i.e. 2003, 2004 & 2005). The sample companies were identified at random with the help of Lottery Method and accordingly 30 per cent from the total population was taken as sample size (i.e. 17 companies out of 58). The details of sample size are given below.

S. No.	Name of the Sector	Total Merged Companies	Sample Merged Companies (30%)
1.	Food & Beverages	8	2
2.	Textiles	11	3
3.	Chemicals	11	3
4.	Non-Metallic Mineral Products	4	1
5.	Metal & Metallic Products	9	3
6.	Machinery	12	4
7.	Miscellaneous Manufacturing & Diversified	3	1
Total		58	17

Source: Prowess Database Software in CMIE.

SOURCE AND COLLECTION OF DATA

The present study is mainly based on secondary data which were collected from the Prowess Corporate Database Software. Further, the available secondary data were collected from the Annual Reports, Published Research Reports by various industries, and research organization, books, periodicals and websites like www.sebi.gov.in, www.indiaonline.com and www.rbi.org.

TOOLS USED FOR ANALYSIS

The present study has analyzed share price reaction, by using the following tools.

a) Standard Event Study Methodology has been adopted to determine the Abnormal Returns (ARs) and Cumulative Abnormal Returns (CAR) for the sample company involved in acquiring other companies. To estimate the acquiring companies' abnormal returns (AR_{it}), the following two different methods, Market Model and Market Adjusted Returns Model have been used. The above two event study methods are briefly discussed below.

b) The *Market Model* assumes that stock returns are determined by the ordinary least squares equation and abnormal returns are calculated by using parameters estimated from this model. The equation for Market Model Abnormal Returns is given by

$$MMAR_{it} = R_{it} - \alpha_i - \beta R_{mt}$$

where, MMAR_{it} is the Market Model Abnormal Returns on security 'i' over time 't'

R_{it} is the returns on security 'i' at time 't'

R_{mt} is the market returns (BSE 100) at time 't'

α & β are the OLS parameters estimated for security 'i' over the 90 trading days before and 30 days after the merger events.

c) The *Market Adjusted Returns Model* assumes that ex ante and expected returns are the same and equal for all companies in any period and equal to the expected returns of the market index. The Market Adjusted Returns Model could also be considered as a special case of the Market Model with the parameters

$\hat{\alpha}_i = 0$ and $\hat{\beta}_i = 1$. The equation for Market Adjusted Abnormal Returns ("MAAR") is:

$$MAAR_{it} = R_{it} - R_{mt}$$

where, MAAR_{it} is the market adjusted abnormal returns on security 'i' over time 't'

R_{it} is the returns on security 'i' at time 't'

R_{mt} is the market returns (BSE 100) at time 't'

ANALYSIS OF EFFECT OF M&A ON SHAREHOLDERS' WEALTH – AN EMPIRICAL ANALYSIS

As stated earlier, the effect of merger and acquisition of these sample firms on their shareholders' wealth have been empirically analysed with the help of Abnormal Returns (AR) and Cumulative Abnormal Returns (CAR) arrived at through Market Model (MM) and Market Adjusted Model (MAM). The analysis is done as below:

1. Company-wise Mean Returns, Standard Deviation (Unsystematic Risk) and Beta (Systematic Risk) for Normal and Abnormal Days,
2. Distribution of Cumulative Abnormal Returns (CAR) BEFORE Merger and Acquisition Period- Market Model,
3. Distribution of Cumulative Abnormal Returns (CAR) AFTER Merger and Acquisition Period- Market Model,
4. Distribution of Cumulative Abnormal Returns (CAR) BEFORE Merger and Acquisition Period- Market Adjusted Model,
5. Distribution of Cumulative Abnormal Returns (CAR) AFTER Merger and Acquisition Period- Market Adjusted Model,
6. Average Abnormal Returns and Cumulative Average Abnormal Returns Industry-wise,
 - Daily Average Abnormal Returns and Cumulative Average Abnormal Returns for FOOD Sector- Market Model and Market Adjusted Model,
 - Daily Average Abnormal Returns and Cumulative Average Abnormal Returns for TEXTILES Sector- Market Model and Market Adjusted Model,
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 - Daily Average Abnormal Returns and Cumulative Average Abnormal Returns for MACHINERY Sector- Market Model and Market Adjusted Model,
 - Daily Average Abnormal Returns and Cumulative Average Abnormal Returns for NON-METAL & OTHERS Sector- Market Model and Market Adjusted Model, and
 - Daily Average Abnormal Returns and Cumulative Average Abnormal Returns for ALL Sectors- Market Model and Market Adjusted Model
7. Cumulative Abnormal Returns for Various Event Windows
- Company-wise Abnormal Returns for Various Time Period Surrounding the Announcement Day of Merger & Acquisition During the Period, 1999-00 to 2003-04- Market Model and Market Adjusted Model, and
- Sector-wise and all sectors' Abnormal Returns for Various Time Period Surrounding the Announcement Day of Merger & Acquisition During the Period, 1999-00 to 2003-04- Market Model and Market Adjusted Model.

COMPANY-WISE MEAN RETURNS, STANDARD DEVIATION (UNSYSTEMATIC RISK) AND BETA (SYSTEMATIC RISK) FOR NORMAL AND ABNORMAL DAYS

The company-wise average returns, unsystematic risk (standard deviation) and systematic risk (beta) for normal days and abnormal days have been presented in **Table-1**. The perusal of the above **Table** reveals that the mean returns is positive for most of the sample firms during normal days whereas it is negative for abnormal days. That is, for most of the sample acquiring firms, the mean returns is negative during abnormal days. However, the volatility in the price movement is less during abnormal days compared to that during normal days as the standard deviation is comparatively less for many sample firms for event period to non-event period. Further, the stock price movement is more prone to systematic risk during normal days than during abnormal days as the beta coefficient for many of the sample acquiring firms is higher for normal days. The negative beta coefficient on normal days and positive coefficient on abnormal days for Forbes, Modirub, Matrix and Skanska have indicated that their stock prices behaved poorly during normal days and managed to do well after the leakage of information about M & A by these firms.

DISTRIBUTION OF CUMULATIVE ABNORMAL RETURNS (CAR) BEFORE MERGER AND ACQUISITION PERIOD- MARKET MODEL

The cumulative abnormal returns (CAR) for 17 acquiring firms under study for 15 day event period before merger and acquisition (M & A) as well as on the day of the press report (official) of the announcement of M & A based on market model (risk adjusted model) are presented in **Table-2**. It is surprising to see that all acquiring firms except MODIRUB and ALFALVL experienced negative abnormal returns in all 15 days before the announcement event of M & A. That is, just 2 out

of 17 acquiring firms experienced positive CAR over the event period (-15,-1) before announcement of M & A. As the abnormal returns is the residual returns after removing the effect of systematic and unsystematic risk for the acquiring firms, it can be perceived from the above results of negative CARs that the earlier leakage of information about M & A of these firms might have induced the market, which reacted negatively to it.

On the announcement day, only one acquiring firm, MODIRUB experienced positive CAR. For others, the CAR was negative on day 0. There was negative reaction in the market on the day of official announcement of M & A with regard to acquiring firms. The decline in shareholders' wealth was 8.68 per cent for CADBUR, 98.54 per cent for SAPTAR, 58.56 per cent for MYFELLOW, 47.52 per cent for DCLPOLY, 44.66 per cent for FORBES, 8.78 per cent for CASTROL, 8.75 per cent for MATRIX, 8.01 per cent for SANDVIK, 21.74 per cent for WARTSILA, 13.44 per cent for INDALUM, 13.80 for PHILIPS, 1.44 per cent for OTIS, 0.96 per cent for SKANSKA, 19.19 per cent for SRIVISHN and 25.95 per cent for FOSECO during the event period (-15, 0).

On the other hand, the shareholders' wealth of MODIRUB increased by 4.96 per cent on the event day (on the day of formal announcement of M&A) from its wealth level on day -15. However, the shareholders' value declined by 2.11 per cent on day 0 (4.96%) from its level on day -1 (7.07%), indicating that market reacted negatively to the day of formal M&A announcement for MODIRUB also. Similarly, the CAR of ALFALVL was positive for event period from -15 to -6 days of formal announcement and oscillating between positive and negative since then until day 0. However, on day 0 (announcement day), the decline in shareholders' value was very limited (-0.01%) and nearly '0'. The above analysis clearly demonstrates that the market reacted negatively to the leakages of information as well as formal announcement of M & A by 15 out of 17 acquiring firms under study. Only in the case of acquiring firm MODIRUB, the event had positive effect on shareholders' wealth while the market was silent towards M&A announcement of ALFALVL.

DISTRIBUTION OF CUMULATIVE ABNORMAL RETURNS (CAR) AFTER MERGER AND ACQUISITION PERIOD- MARKET MODEL

The post announcement scenario was the same as that of pre-event period for all the 17 acquiring firms in terms of CAR. The quick perusal of the results presented in **Table-3** reveals that the CAR was negative for almost all acquiring firms under study over event periods from 1 to 15 after formal (official) announcement (event day). Even for MODIRUB, which experienced positive CAR over 15 days event period before announcement and also on the event day, it was negative at 2.03 per cent on day +1 and there was an increase in negative CAR which stood at -20.31 per cent on day +15 despite its recovery on day +3 (0.16%) and day +12 (2.59%). ALFALVL, whose CAR was almost zero on day '0', also showed negative CAR on day +1 (-0.33%) and on day +15 (-0.67%). In all, the CAR was negative over (-15, +15) event period for all 17 acquiring firms. Among the 17 acquiring firms, FOSECO experienced the highest negative CAR of 94.96 per cent, followed by SAPTAR with 94.05 per cent, DCLPOLY with 89.62 per cent, MYFELLOW with 86.21 per cent and FORBES with 62.20 per cent, indicating huge decline in shareholders' wealth of these acquiring firms. In the case of CASTROL, PHILIPS, OTIS, SKANSKA, MODIRUB, SANDVIK, WARTSILA, INDALUM, SRIVISHN and MATRIX, the CAR for 31 days event period was negative but moderate and ranging between minimum of 12.83 per cent and maximum of 34.43 per cent for the event period (-15, +15). At the same time, the CAR over the event period (-15,+15) for ALFALVL's was meager (-0.67 per cent), which in turn reveals that shareholders' wealth of this acquiring firm was not affected by the M&A.

DISTRIBUTION OF CUMULATIVE ABNORMAL RETURNS (CAR) BEFORE MERGER AND ACQUISITION PERIOD- MARKET ADJUSTED MODEL

The CARs for sample acquiring firms based on Market Adjusted Model for days -15 to +15 are presented in **Table-4**. The Market Adjusted Model assumes that ex-ante and expected returns are the same for all firms and in any period it is equal to the expected returns of the market index. That is, it assumes that unsystematic risk is nil and systematic risk, that is, market risk is same for all firms during a normal period. From the above Table, it can be observed that 6 out of 17 acquiring firms' CAR was positive on day -15 and number of companies with positive CAR increased to 11 over 13 days of trading period (-15, -3) before M&A announcement. This shows significant positive effect on shareholders' wealth on day 3 before announcement. But, number of positive companies declined to 7 on day -2 and subsequently increased again to 10 on day -1. However, on announcement day, only three firms, namely, MYFELLOW (20.86%), OTIS (2.27%) and SRIVISHN (0.55%) out of 17 acquiring firms experienced positive CAR, which in turn reveals that the official announcement of M&A reduced the wealth of acquiring firms in general.

DISTRIBUTION OF CUMULATIVE ABNORMAL RETURNS (CAR) AFTER MERGER AND ACQUISITION PERIOD- MARKET ADJUSTED MODEL

It can be observed from the results of CAR presented in **Table-5** for post-announcement event period that the number of companies with positive CAR increased to 7 on day +1, the very next day of the formal announcement. There were 5 companies on day +5, 8 on day +10 and again 5 companies on day +15 with positive CAR, indicating the dominance of negative CAR companies in all the event period after announcement. This exposes the fact that the market reacted negatively towards acquirers, which resulted in the downfall in the shareholders' wealth. On the other hand, observation of CAR for event period (-15, +15) based on market model (**Table-3**) and market adjusted model (**Table-5**) indicates that the CARs for acquiring firms based on market adjusted model are higher than that of market model. That is, negative CAR was less and positive CAR was more for the acquiring firms if ex-ante and expected returns are the same for all firms and in any period it is equal to the expected returns of the market index. In other words, it can be interpreted that the acquiring firms' CAR over event period would be less if there was no unsystematic risk for the firms and all the firms' systematic risk was 1. Hence, CAR based on market model clearly reveals that the decline in shareholders' wealth of acquiring firms might be mainly due to the internal risk (unsystematic risk) of these firms. This is because a well-known internal risk of the firms arising out of M&A would create an uncertainty among the investors and push them to presume that there would be dilution of ownership due to merger and acquisition of other firms. The above ambience would upset the market and adversely affect the shareholders' value.

AVERAGE ABNORMAL RETURNS AND CUMULATIVE AVERAGE ABNORMAL RETURNS – INDUSTRY WISE

As the size of acquisitions may vary across industries, this study attempts to determine whether the industry-wise M & A makes any difference in the abnormal returns. Hence abnormal returns of the acquiring firms under each industry, namely, Food, Textiles, Chemical, Metal, Machinery and Non-Metal & Others, are averaged for each day of event period. In order to provide additional insight into the pattern of abnormal returns over the event period, average abnormal returns are cumulated and examined. The industry category-wise results of AR and CAR based on market model and market adjusted model along with test statistics have been presented from **Table-6.a** to **Table-6.g**.

An examination of **Table-6.a** throws light on the Abnormal Returns (AR) and CAR for acquiring firms under food sector and shows statistically significant negative risk adjusted (market model) abnormal returns (AR) around the announcement period. The AR of acquiring firms in food sector is positive only on days -14, -3 and +3 during the event period. For the remaining days during the event period, AR is negative. Further, AR on day -2, day 0 and on day 1 is -4.98 per cent, 4.61 per cent, -4.60 per cent and 4.45 per cent respectively with corresponding t-statistics values of -2.11 ($p < 0.05$), -1.95 ($p < 0.10$), -1.95 ($p < 0.10$) and -1.89 ($p < 0.10$), which are significant at required conventional level. Also, negative ARs on days +5 (-4.46% $\rightarrow t = -1.89$; $p < 0.05$), 13 (-6.45% $\rightarrow t = -2.74$; $p < 0.01$), 14 (-4.67% $\rightarrow t = -1.98$; $p < 0.05$) and 15 (-6.10% $\rightarrow t = -2.59$; $p < 0.01$) following announcement date are found to be significant. On the other hand, the results show that Abnormal Returns for days from 3 to 15 preceding the announcement date are found to be almost equal to zero, as they are not statistically significant from zero, indicating that the market did not anticipate the acquisition event in respect of the acquiring firms under food sector even three days before the formal announcement. Only around the announcement period, that is two days before and one day after announcement, the market responded significantly to M&A of the acquiring firms under food sector. Subsequently the market failed to exhibit any significant reaction to the M&A for all days except day 5 up to 12 in the post-event period. However, on days 13, 14 and 15, the market reacted unfavourably to the sample firms involved in M&A under food sector.

The perusal of the CAR results based on Market Adjusted Model (MAM) for sample acquiring firms in food sector, as seen from **Table-6.a**, shows that both AR and CAR are comparatively less than that of based on Market Model (MM) (Risk adjusted model) for most of the event days. Particularly CAR based on MAM is much lower than that of MM on all event days. The positive ARs based on MAM are found for more number of days in event periods than that of based on MM. In pre-period, MAM based AR is significantly negative on day -2 and in the post-period, significantly positive on day +3 and again significantly negative on days +13 and +15. The significant negative AR for just 3 days out of 31 days event period might have been due to over-performance of the market itself and not due to overreaction to the M&A. Similarly, the positive AR for just one day out of 31 days event period might have been due to underperformance of the market itself and not due to its under-reaction to the M&A. Further, accumulation of MAM based CAR is insignificant for the event days from -15 to +7 and is significant only from 8th day of the announcement. On day +15, the MAM based CAR is -45.38 per cent and statistically significant ($t = -3.23$, $p < 0.01$). Hence it is inferred that the market started reacting only a week after the announcement of M & A by sample acquiring firms under food sector and returns yielded by

these firms are comparatively lower by 48.38 per cent to that of market to the investors over 31 days event period due to M & A. In other words, it can be said that the shareholders' wealth of these acquiring firms experienced a downfall of 48.38 per cent to its announcement of M&A compared to the shareholders' wealth of total portfolio in the market.

For acquiring firms in the Textile Sector, the results presented in the **Table-6.b** disclose that abnormal returns under risk adjusted (market model) on days -2, -1 and 0 is positive at 5.35 per cent, 10.30 per cent and 1.09 per cent respectively but do not differ significantly from zero as the obtained 't' values are insignificant. However, it is interesting to note that the abnormal returns which were negative on day -3, increased and became positive on day -2, and kept increasing until next day, i.e., on day -1. But all of a sudden it declined by 4.95 per cent (10.30% - 5.35%) on day 0, the day of official announcement of M&A. However, a sudden decline in the abnormal returns on day 0 from its level on previous day (day -1) might have been due to official recording of M&A announcement on which the market reacted quickly. Further, CARs are significant but negative only for event window between day -15 and -6 (CAR = -50.15% → t = -1.68, p < 0.10), -15 and -4 (CAR = -57.23% → t = -1.75, p < 0.10), -15 and -3 (CAR = -66.99% → t = -1.97, p < 0.05) and between days -15 and -2 (CAR = -61.64% → t = -1.74, p < 0.10). For remaining days in the event period, CARs were negative and did not differ significantly from zero (t values are insignificant), indicating that market had neither under-reacted nor overreacted to either information leakage or official announcement of M&A by the sample acquiring firms under the Textile Sector. The significant negative CAR for day -6 and for days from -4 to -2 might have been due to over-performance of the market.

The results of CAR based on MAM as presented in **Table-6.b** reveal that both AR and CAR were much less than AR and CAR based on MM for the event period. Interestingly, both AR and CAR based on MAM were not statistically significant for all trading days during the event period (-15, +15), signifying that shares of these sample textile firms had performed equally with that of market.

In other words, investors had not reacted extraordinarily and the market also did not react to either information leakage or announcement of M&A by sample acquiring firms under the Textile Sector.

The daily average abnormal returns (AR) and cumulative average abnormal returns (CAR) based on MM for acquiring firms under the Chemical Sector are presented in the **Table-6.c**. It is seen from the table that AR was positive for most of the days in the event period but statistically insignificant. Only three positive ARs on day +2 (AR = 4.92%, t = 2.16, p < 0.05), +3 (AR = 3.88%, t = 1.71, p < 0.10) and on day +11 (AR = 8.81%, t = 3.87, p < 0.01) were significantly different from zero. Similarly, the negative ARs differed significantly from zero only on days +13 (AR = -5.45%, t = -2.39, p < 0.05) and +15 (AR = -5.73%, t = -2.52, p < 0.05). The AR based on MAM was positive and differed significantly from zero only on day +11 (AR = 8.77%, t = 3.48, p < 0.01) in the event period. Similarly, negative AR on day +5 (AR = -4.90%, t = -1.94, p < 0.10), +13 (AR = -4.90, t = -1.94, p < 0.10), +14 (AR = -4.68%, t = -1.86, p < 0.10) and on +15 (AR = -6.51%, t = -2.58, p < 0.01) in the event period was significant. Excepting these, ARs, either negative or positive, were insignificant on all other days of the event period.

On the other hand, none of CARs based on either MM or MAM during the event period differed significantly from zero. This indicates that both investors and market had not reacted and kept silent to both leakage of information about M&A and official announcement of M&A. Either negative or positive, CARs in the event days might have been due to general behaviour of the market. At the same time, the CAR based on MAM was less than that of CAR based on MM for most of the event days.

With regard to the Metal Sector, the results of AR and CAR based on MM model, as presented in **Table-6.d**, show that AR had been positive for 8 out of 31 event days surrounding the official announcement of the M&A. The AR had been positive on day -1, that is a day prior to the event day, but it was negative on the event day, indicating that the market reacted to the official announcement insignificantly. Also, none of the AR in all event days was statistically different from zero, revealing that the actual returns was almost the same as the expected returns on these event days. This further reveals that the M&A announcement by the sample firms under the Metal Sector had not created either optimistic or pessimistic tendency among the investors. That is, the market had been silent over the above event. Similar trends are also discernible in the case of AR based on MAM model. But number of positive ARs are higher. AR had been positive for 11 out of 31 event days for the sample firms under the Metal Sector if firm's systematic risk was constant across firms. It can be understood from the above AR results that the market had been silent to either information leakage or press report of M & A and even after press report, it had not been upbeat.

CARs based on both MM and MAM model for sample firms under the Metal Sector (**Table-6.d**) show that there had been a downward trend in the shareholders' value over 31 days event period surrounding the press report of M&A. In the 31 days (-15, 0, +15) event period, the shareholders' wealth met with significant decline of 26.32 per cent, after taking into consideration both unsystematic and systematic risks (MM model) of the sample firms under the Metal Sector. While the decline in the shareholders' wealth of these firms had been 18.70 per cent, it was insignificant in the case of the market-adjusted returns.

The daily average ARs for the sample firms under the Machinery Sector are presented in **Table-6.e**. The observation of the results from the above Table clearly shows that both MM and MAM based ARs had been positive for most of the event days. However, it is found that only MM based ARs on two days after announcement (+1 and +2) are statistically significant.

For the remaining event days, including the announcement day, the ARs, either positive or negative, are not significantly different from zero. The presence of significant positive abnormal returns on day +1 and +2, that is two days after formal announcement, shows a somewhat delayed market reaction to the M&A announcement of sample firms under the Machinery Sector. At the same time, the above reaction in the market did not last for long. Three days after the event day, the market had not shown any abnormal reaction to the stock value of these firms. None of the abnormal returns based on market adjusted model (MAM) is significantly different from zero. But it is interesting to note that the MAM based AR was positive on day -1 and negative on the announcement day in contrast to MM based AR on these two days. The above contrast between MM and MAM based ARs clearly indicates that the firm - specific systematic risk was less than that of market portfolio on the day of the press report of M&A of these firms.

The quick perusal of CARs for the Machinery Sector based on MM model reveals downward trend while CAR based on MAM model experienced crisscross trend during the 31 days event period. However, MM based CARs in the event windows (-15, +10), (-15, +12), (-15, +13), (-15, +14) and (-15, +15) are significant at required probability level. The above significant CARs in the wider event window reveal that it took 9 days for the market to react significantly but negatively after the press report of M&A decision of sample firms under the Machinery Sector. The wealth of the shareholders of these firms under the Machinery Sector decreased significantly by 13.17 per cent (t = -1.69, p < 0.10), 14.34 per cent (t = -1.77, p < 0.10), 16.36 per cent (t = -1.99, p < 0.05), 16.91 per cent (t = -2.02, p < 0.05) and 17.07 per cent (t = -2.00, p < 0.05) during 26 days, 28 days, 29 days, 30 days and 31 days event windows respectively. But the above scenario was not true in respect of CARs based on MAM model. First, MAM based CARs had shown heterogeneity in their movements over 31 days event window and second, none of the CARs was statistically significant. At the same time, all MAM based CARs were comparatively less than MM based CARs. The above picture clearly exposes the fact that the firm - specific risk was higher than that of market portfolio during the event period, which might have been due to proactive but negative reaction by the market to the M&A announcement of these firms.

For sample acquiring firms under Non-Metal and Other Sectors, the results of AR and CAR are presented in the **Table-6.f** which discloses that both MM and MAM based ARs were negative for most of the event days. However, the days surrounding the announcement day, that is, for two days before and one day after as well as on the announcement day, the AR was significantly negative. This shows that the wealth of shareholders of the sample firms under Non-Metal and Other Sectors declined significantly by 4.98 percent on day -2, 4.61 per cent on day -1, 4.60 per cent on announcement day and 4.45 per cent on the very next day (day +1). Except on day +5, in all event days between 2 and 12 after announcement, the market had been silent to the event. But 12 days after the announcement, the successive 3 days (13, 14 and 15), and experienced significant negative risk adjusted ARs (MM based). The decline in shareholders' returns was as much as 6.45 per cent and 6.10 per cent on day +13 and day +15. The downward movement of MM based CARs is clearly discernible during the event period. But the above decline in CARs had been less and not significant in the pre announcement period except on day -1 (CAR = -0.1712, t = -2.14, p < 0.05) whereas it had been higher and statistically highly significant in the post-event period. Though statistically insignificant, the CAR was -12.53 per cent on day -2. On the day of press report, that is on the day of official announcement of M&A, the wealth of the shareholders of these sample acquiring firms under Non-Metal and Other Sectors declined significantly by 21.72 per cent from its level 15 days before the event. In 31 days event window (-15, +15), there was significant decline in the shareholders' wealth to the tune of 61.58 per cent.

It is to be noted that MAM based ARs were positive for 6 days in the pre-period and 3 days in the post-period of the M&A event. None of the positive AR in pre-period was statistically significant but AR on third day in post-period, which was 5.26 per cent, had been significant at 5 per cent level. However, the ARs over the subsequent days until day 12 in the post-period were insignificant and experienced crisscross movement. The trend in MAM based CARs had also been similar to that of MM based CARs but less in magnitude. Moreover, the MAM based CARs had become significant only after 7 days from announcement. The shareholders' wealth was significantly less by 21.67 per cent, 26.46 per cent and 45.38 per cent of the CARs of the market portfolios during 24 days, (-15, +8), 26 days (-15, +10) and 31 days (-15, +15) event windows. It is well understood on the basis of above interpretation of results that the market reacted negatively to the M&A announcement of the sample acquiring firms under Non-Metal and Other Sector in the post event period, that is, press report of the announcement and information leakage of the above event did not have any impact on the investors

For all sample acquiring firms under study, the results presented in **Table-6.g** demonstrate that MM based ARs were significant for 2 days before and one day after surrounding the announcement day. On the announcement day, the wealth of the shareholders of the pooled sample firms had gone down significantly by 4.60 per cent. This indicates that the market reacted negatively and significantly to the M&A announcement of all sample acquiring firms under study. The observation of MM based CARs reveals that they were all negative in all the event days. But they were insignificant in the pre announcement period except a day before the event and significantly different from zero in all event days after announcement of M&A. In 31 days event window, the wealth of shareholders of all these acquiring firms significantly declined by 61.58 per cent.

Somewhat similar trends are discernible also in the case of ARs and CARs using MAM. Though MAM based AR was significant on the day of announcement, that is, on day 0, for 2 days before the event, it had been significant at required probability level. This shows that the market was passive to the information leakage and became proactive only 2 days before the press report of the M&A. Further, the observation of the MAM based CARs clearly shows that the decline in the wealth of shareholders was less than that of MM model. The MAM-CARs which were significant for all days in the event period from 8 days before to 15 days after the announcement clearly indicate that there was strong negative reaction of the market to the M&A acquisitions of the sample acquiring firms under Non-Metal and Other Sectors.

CUMULATIVE ABNORMAL RETURNS FOR VARIOUS EVENT WINDOWS

In the preceding part of this chapter, company wise CARs and industry wise ARs and CARs for all days of event period have been empirically tested. An attempt has been made in this research initiative to test company wise and industry wise CARs for various event windows. This is done to ascertain the time taken for the market to react significantly to the M&A before and after the press report of the announcement.

Table-7.a documents the CARs based on both MM and MAM for 17 sample acquiring firms over various event windows. The AR on the day of announcement has also been given in the table for comparison with CARs of different event windows. The observation of the results from the set of tables shows that both MM and MAM based CARs were negative but insignificant for all event windows in respect of CADBURY, MODIRUB, INDALUM, SANDVIK, WARTSILA and SKANSKA. The MM based CAR was positive at 10.10 per cent for three days surrounding the event (-1, +1) and MAM based CAR was positive at 12.90 per cent, 3.64 per cent and 17.13 per cent for three days (-1, +1), five days (-2, +2) and 21 days (-10, +10) surrounding the event respectively, but did not differ significantly from zero in the case of SAPTAR. For the company, MYFELLOW, MM based CARs were positive but insignificant for all event windows except for the event windows surrounding 21 days (-10, +10) and above. On the other hand, MAM based CARs, though insignificant, were positive for all event windows, indicating that the stock price of this firm (MYFELLOW) outperformed the market before and after the announcement but insignificantly. In the case of DCLPOLY, both MM and MAM based CAR was positive for 3 days event window (-1, +1) and for the remaining event windows, they were negative. But all CARs were insignificant, indicating that the market had been proactive in the days close to the press report of the M&A announcement.

It is interesting to note that the MM based CARs were negative and significantly different from zero for all event windows in the case of FORBES. When event windows were widened to include additional trading days, the negative CARs were in the upward trajectory. But in respect of CAR based on MAM, it had been significant only for shorter event window - 3 days (-1, +1) surrounding the announcement day. The above results clearly demonstrate that the investors of FORBES were pessimistic about its M&A activity.

Results of the analysis of CAR under MM and MAM for sector wise as well as for all sectors are presented in **Table-7.b** which reveals that the risk adjusted shareholders' wealth due to M&A activity significantly went down by 26.32 per cent during 31 days (-15, +15) event period ($CAR = -0.2632, t = -1.84, p < 0.10$) in respect of Metal Sector and in the case of Machinery Sector, the significant decline in risk adjusted shareholders' wealth was 7.34 per cent, 8.96 per cent, 11.88 per cent and 17.04 per cent during 5 days (-2, +2), 11 days (-5, +5), 21 days (-10, +10) and 31 days (-15, +15) event periods respectively. However, MAM based CARs, despite being negative for all event windows in respect of the above two firms, were not statistically significant. The above pictures show that the M & A activities of the sample acquiring firms under these two sectors were not only prone to market risk but also to firms - specific risk.

The perusal of both risk adjusted (MM) and market adjusted (MAM) CARs for all acquiring firms (all sectors) over various event periods (**Table-7.b**) demonstrate the significant continuous decline in shareholders' wealth. After the press report of M & A announcement day, the average ARs, both MM and MAM based for all sample acquiring firms, were statistically significant ($CAR_{MM} = -0.0460, t = -2.22, p < 0.05$ and $CAR_{MAM} = -0.1004, t = -2.77, p < 0.01$), which in turn shows that the market had significantly reacted to the event. Further, significant CARs for various event windows clearly indicate that the market became proactive to the leakage of information and reacted negatively even 15 days after the event, demonstrating the prevalence of pessimism among the investors about M&A activity.

FINDINGS OF THE STUDY

- The CAR based on Market Model clearly reveals that the decline in shareholders' wealth of acquiring firms might have been mainly due to the internal risk (unsystematic risk) of these firms.
- The market failed to react significantly to the M&A for all days except from day 5 to 12 day in the post- event period for firms under Food Sector. On the other hand, on days +13, +14 and +15, the market reacted unfavourably.
- It is found that the market reacted negatively to the M&A announcement of sample acquiring firms under Non-Metal and Other Sector in the post event period, that is, even after press report of the above event, the M&A did not have any impact on investors.
- The company wise Abnormal Returns and CARs demonstrate that both risk adjusted and market adjusted shareholders' wealth for all companies, except Matrix Laboratories Ltd, declined moderately during event periods.
- It is found that for most of the acquiring firms, shareholders' wealth declined during 15 days period surrounding the announcement of M&A. The decline in the shareholders' wealth could be due to the fact that earlier leakage of information about M&A of these firms might have induced the market to react negatively.
- It is deduced that the firm - specific risk was higher than that of market portfolio during the event period for acquiring firms under Machinery Sector, which might have been due to proactive but negative reaction by the market to the M&A announcement of these firms.

CONCLUSION

The effect of merger and acquisition activities of the 17 sample acquiring firms on their shareholders' wealth have been analysed with the help of Abnormal Returns (ARs) and Cumulative Abnormal Returns (CARs) calculated by using Market Model and Market Adjusted Model for company wise and sector wise. The results of company wise ARs and CARs have demonstrated that both risk adjusted and market adjusted shareholders' wealth for all companies except MATRIX declined moderately during event periods. Similarly industry wise analysis of ARs and CARs reveals that wealth of the shareholders of the firms under Metal, Machinery and Non-Metal & Other Sectors went down significantly during the event periods. For firms under Food, Textile and Chemical, the effect of M&A on the shareholders' wealth was negative but not significant. As a whole, the results indicate that M&A activities of the acquiring firms failed to increase the wealth of their shareholders. The above results confirm the validity of the Hypothesis that "there is no significant change in shareholders' wealth of acquiring firms in the event of mergers and acquisitions".

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TABLES

TABLE -1: COMPANY-WISE MEAN RETURNS, STANDARD DEVIATION (UNSYSTEMATIC RISK) AND BETA (SYSTEMATIC RISK) FOR NORMAL AND ABNORMAL DAYS

Company Code	Normal Days			Abnormal Days		
	Mean Return	SD	Beta	Mean Return	SD	Beta
SAPTAR	0.0162	0.1494	0.2122	-0.0119	0.1570	-0.5953
CADBURY	0.0025	0.0146	0.1240	-0.0013	0.0064	-0.0306
MYFELLOW	0.0278	0.2514	0.6520	-0.0099	0.1823	-0.9668
DCLPOLY	0.0083	0.0945	0.6786	-0.0215	0.0455	0.5841
FORBES	0.0073	0.0499	-0.1947	-0.0128	0.0443	1.0245
MODIRUB	-0.0024	0.0490	-0.1257	-0.0096	0.0570	0.2307
CASTROL	-0.0011	0.0249	0.1691	-0.0043	0.0246	0.3000
MATRIX	0.0016	0.0457	-0.5855	0.0143	0.0623	1.1454
SRIVISHN	0.0080	0.0235	0.1208	-0.0014	0.0364	-0.1474
INDALUM	-0.0009	0.0435	0.4008	-0.0078	0.0216	0.2431
SANDVIK	0.0027	0.0337	-0.5592	-0.0053	0.0149	-0.4149
WARTSILA	0.0065	0.0362	0.1464	-0.0026	0.0190	0.0604
PHILIPS	0.0056	0.0308	0.2398	-0.0051	0.0155	0.3031
OTIS	0.0021	0.0257	0.0935	-0.0023	0.0216	0.0444
SKANSKA	0.0027	0.0347	-0.5528	-0.0030	0.0261	0.1302
ALFALVL	0.0009	0.0265	-0.0377	0.0010	0.0153	-0.1480
FOSECO	0.0056	0.0387	0.0141	-0.0250	0.0421	0.1300

Source: Computed from ProWess.

TABLE-2: DISTRIBUTION OF CUMULATIVE ABNORMAL RETURNS (CAR) BEFORE MERGER AND ACQUISITION PERIOD – MARKET MODEL

COMPANY	Day Relative to Announcement															
	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0
SAPTAR	-0.1600	-0.2044	-0.4512	-0.2647	-0.3049	-0.3899	-0.4081	-0.5270	-0.7774	-0.6348	-0.6787	-0.9272	-0.8345	-0.9497	-0.7519	-0.9854
CADBURY	-0.0022	-0.0040	-0.0071	-0.0134	-0.0193	-0.0217	-0.0283	-0.0308	-0.0336	-0.0502	-0.0576	-0.0813	-0.0802	-0.0698	-0.0782	-0.0868
MYFELLOW	-0.0131	-0.0787	-0.3730	-0.5234	-0.6819	-0.4593	-0.4424	-0.6626	-0.6966	-0.9576	-0.7245	-1.0361	-1.2903	-1.0802	-0.7735	-0.5856
DCLPOLY	-0.0842	-0.1239	-0.1568	-0.2015	-0.3080	-0.3152	-0.3391	-0.3443	-0.3747	-0.3957	-0.4878	-0.4522	-0.4161	-0.4726	-0.4584	-0.4752
FORBES	-0.0272	-0.0307	-0.0678	-0.0604	-0.0646	-0.0799	-0.1157	-0.0916	-0.1205	-0.1513	-0.1797	-0.2286	-0.3034	-0.2964	-0.3083	-0.4466
MODIRUB	0.0100	-0.0048	-0.0511	-0.1078	-0.0253	0.0584	0.0662	0.1466	0.1292	0.0911	0.1306	0.0940	0.0639	0.0162	0.0707	0.0496
CASTROL	0.0092	0.0107	0.0204	0.0207	0.0284	0.0293	-0.0007	0.0003	-0.0001	-0.0071	-0.0194	-0.0670	-0.0712	-0.0640	-0.0537	-0.0878
MATRIX	-0.0132	-0.0403	-0.0149	-0.0042	-0.0319	-0.0141	-0.0275	-0.0132	-0.0262	-0.0303	-0.0105	-0.0319	-0.0364	-0.0400	-0.0548	-0.0875
SRIVISHN	-0.0165	-0.0183	-0.0308	-0.0394	-0.0390	-0.0533	-0.0651	-0.0671	-0.0695	-0.0785	-0.1150	-0.0665	0.0183	-0.0915	-0.1858	-0.1919
INDALUM	-0.0081	0.0007	0.0039	-0.0364	-0.0270	-0.0530	-0.0423	-0.0937	-0.0642	-0.0497	-0.1080	-0.0978	-0.0910	-0.1079	-0.0956	-0.1344
SANDVIK	-0.0001	0.0025	-0.0080	-0.0152	-0.0248	-0.0218	-0.0176	-0.0185	-0.0264	-0.0270	-0.0247	-0.0199	-0.0252	-0.0239	-0.0245	-0.0301
WARTSILA	-0.0073	-0.0153	-0.0227	-0.0250	-0.0321	-0.0382	-0.0452	-0.0550	-0.0654	-0.0785	-0.1149	-0.1509	-0.1320	-0.1913	-0.1816	-0.2174
PHILIPS	-0.0127	-0.0320	-0.0542	-0.0540	-0.0592	-0.0671	-0.0811	-0.0685	-0.0237	-0.0488	-0.0711	-0.0886	-0.0835	-0.0945	-0.1282	-0.1380
OTIS	0.0076	0.0011	-0.0029	-0.0028	-0.0114	-0.0072	-0.0126	-0.0144	-0.0177	-0.0230	-0.0055	-0.0060	0.0035	-0.0159	-0.0211	-0.0144
SKANSKA	0.0048	0.0051	0.0023	-0.0007	0.0014	0.0057	0.0075	-0.0014	-0.0118	-0.0140	-0.0365	-0.0253	-0.0448	-0.0324	-0.0371	-0.0096
ALFALVL	0.0446	0.0241	0.0165	0.0234	0.0176	0.0299	0.0368	0.0352	0.0286	0.0246	-0.0046	0.0058	0.0206	-0.0034	0.0118	-0.0001
FOSECO	-0.0364	-0.0200	-0.0168	-0.0180	-0.0204	-0.0172	-0.0259	-0.0561	-0.0600	-0.0662	-0.0656	-0.1509	-0.1863	-0.1761	-0.1737	-0.2595

TABLE-3: DISTRIBUTION OF CUMULATIVE ABNORMAL RETURNS (CAR) AFTER MERGER AND ACQUISITION PERIOD – MARKET MODEL

COMPANY	Day Relative to Announcement														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SAPTAR	-0.8487	-0.8690	-1.0211	-1.0882	-1.1863	-0.9907	-0.7942	-0.6884	-0.7306	-0.5032	-0.2976	-0.4090	-0.6423	-0.8908	-0.9405
CADBURY	-0.0934	-0.0997	-0.0988	-0.1046	-0.1073	-0.1044	-0.1073	-0.1100	-0.1169	-0.1019	-0.1080	-0.1080	-0.1101	-0.1159	-0.1256
MYFELLOW	-0.7036	-0.7369	-0.6779	-0.4706	-0.6836	-0.7139	-0.7490	-0.6428	-0.8710	-0.7143	-0.4201	-0.4469	-0.7205	-0.9833	-0.8621
DCLPOLY	-0.4592	-0.5066	-0.5907	-0.5987	-0.6429	-0.5775	-0.6019	-0.6611	-0.6610	-0.7500	-0.7866	-0.8048	-0.8766	-0.8166	-0.8962
FORBES	-0.5591	-0.5343	-0.5843	-0.4972	-0.5080	-0.5750	-0.6425	-0.6072	-0.6130	-0.6040	-0.6116	-0.6656	-0.6728	-0.6452	-0.6220
MODIRUB	-0.0203	-0.0593	0.0016	-0.0745	-0.1458	-0.1900	-0.1083	-0.1021	-0.0357	-0.0894	-0.0105	0.0259	-0.0502	-0.1263	-0.2031
CASTROL	-0.0254	0.0280	-0.0134	0.0110	-0.0037	-0.0109	-0.0344	-0.0351	-0.0567	-0.0474	-0.0604	-0.0557	-0.0557	-0.0967	-0.1283
MATRIX	-0.0603	0.0728	0.1698	0.2900	0.2728	0.2697	0.2606	0.2726	0.2765	0.3895	0.5879	0.4765	0.3892	0.3892	0.3258
SRIVISHN	-0.1953	-0.1778	-0.1845	-0.2221	-0.2255	-0.2080	-0.2360	-0.2358	-0.2600	-0.2572	-0.2686	-0.2125	-0.2554	-0.2629	-0.2990
INDALUM	-0.1686	-0.1981	-0.2213	-0.2505	-0.2477	-0.2333	-0.2352	-0.2359	-0.2466	-0.2560	-0.2485	-0.2669	-0.2733	-0.2941	-0.2929
SANDVIK	-0.0471	-0.0460	-0.0487	-0.0542	-0.1079	-0.1510	-0.1601	-0.1377	-0.1287	-0.1472	-0.1683	-0.1876	-0.2089	-0.2208	-0.2231
WARTSILA	-0.2215	-0.1986	-0.2184	-0.2301	-0.2249	-0.1861	-0.2124	-0.2306	-0.2357	-0.2398	-0.2315	-0.2602	-0.2580	-0.2608	-0.2737
PHILIPS	-0.1521	-0.1617	-0.1793	-0.2163	-0.2299	-0.2318	-0.2300	-0.2430	-0.2623	-0.2717	-0.2893	-0.3082	-0.3349	-0.3403	-0.3443
OTIS	-0.0236	-0.0899	-0.1378	-0.1331	-0.1187	-0.1187	-0.1469	-0.1300	-0.1325	-0.1205	-0.0818	-0.0842	-0.1430	-0.1313	-0.1431
SKANSKA	-0.0924	-0.1496	-0.0867	-0.0544	-0.0618	-0.0738	-0.1280	-0.0980	-0.1003	-0.1155	-0.1102	-0.1576	-0.1621	-0.1834	-0.1876
ALFALVL	-0.0033	0.0035	-0.0032	-0.0100	-0.0092	-0.0235	-0.0049	-0.0004	0.0067	-0.0189	-0.0129	-0.0236	-0.0144	-0.0212	-0.0067
FOSECO	-0.3451	-0.4168	-0.3430	-0.3115	-0.3972	-0.4204	-0.4367	-0.4741	-0.5237	-0.5846	-0.6148	-0.6917	-0.7778	-0.8637	-0.9496

TABLE – 4: DISTRIBUTION OF CUMULATIVE ABNORMAL RETURNS (CAR) BEFORE MERGER AND ACQUISITION PERIOD – MARKET ADJUSTED MODEL

COMPANY	Day Relative to Announcement															
	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0
SAPTAR	-0.1720	0.0209	-0.3332	0.1310	-0.0263	-0.0812	0.0015	-0.0608	-0.2573	0.1605	-0.0165	-0.2349	0.1116	-0.0841	0.1946	-0.2259
CADBURY	-0.0053	0.0056	0.0012	-0.0340	-0.0054	-0.0139	-0.0091	0.0049	-0.0054	-0.0230	-0.0155	-0.0286	0.0128	0.0229	-0.0085	-0.0139
MYFELLOW	0.0202	-0.0300	-0.2818	-0.1193	-0.1207	0.2505	0.0545	-0.2021	0.0020	-0.2314	0.2721	-0.3105	-0.2429	0.2373	0.3823	0.2086
DCLPOLY	-0.0708	-0.0310	-0.0273	-0.0378	-0.0938	-0.0039	-0.0168	0.0030	-0.0188	-0.0124	-0.0817	0.0410	0.0513	-0.0451	0.0313	-0.0061
FORBES	-0.0169	0.0008	-0.0399	0.0133	0.0182	-0.0246	-0.0239	0.0390	-0.0153	-0.0285	-0.0268	-0.0456	-0.0502	0.0313	-0.0068	-0.1302
MODIRUB	0.0154	-0.0162	-0.0265	-0.0744	0.0691	0.0624	0.0049	0.0891	-0.0379	-0.0393	0.0437	-0.0583	-0.0383	-0.0242	0.0289	-0.0229
CASTROL	0.0208	-0.0091	0.0022	0.0140	-0.0013	-0.0298	-0.0439	-0.0038	-0.0055	-0.0118	-0.0269	-0.0308	-0.0144	0.0110	-0.0066	-0.0285
MATRIX	-0.0092	-0.0120	-0.0045	0.0285	-0.0014	0.0512	-0.0252	0.0127	-0.0259	0.0012	0.0464	-0.0274	0.0189	0.0088	0.0111	-0.0261
SRIVISHN	-0.0203	0.0061	-0.0046	-0.0031	-0.0011	-0.0025	0.0032	-0.0001	0.0026	-0.0065	-0.0272	0.0563	0.0833	-0.1129	-0.0944	0.0055
INDALUM	-0.0172	0.0023	0.0029	-0.0551	0.0106	-0.0132	0.0152	-0.0513	0.0272	0.0016	-0.0660	0.0083	0.0245	-0.0235	0.0227	-0.0308
SANDVIK	0.0061	-0.0091	0.0116	0.0059	0.0112	-0.0121	0.0054	-0.0111	0.0082	-0.0050	-0.0071	-0.0147	0.0017	-0.0100	-0.0066	-0.0011
WARTSILA	-0.0068	-0.0044	-0.0024	0.0179	-0.0032	0.0188	-0.0095	-0.0116	-0.0054	-0.0070	-0.0394	-0.0318	0.0192	-0.0447	0.0139	-0.0232
PHILIPS	-0.0061	-0.0010	-0.0141	0.0033	-0.0187	-0.0122	-0.0025	0.0185	0.0446	-0.0197	-0.0228	-0.0181	0.0082	-0.0106	-0.0406	-0.0021
OTIS	0.0038	-0.0148	-0.0047	-0.0052	0.0016	0.0079	-0.0117	-0.0079	-0.0062	-0.0012	0.0247	-0.0125	0.0218	-0.0229	-0.0057	0.0227
SKANSKA	-0.0169	-0.0051	0.0091	-0.0087	-0.0102	-0.0113	-0.0079	0.0107	0.0106	-0.0034	-0.0330	0.0112	-0.0581	0.0195	0.0594	-0.0192
ALFALVL	0.0589	-0.0134	-0.0119	0.0049	-0.0033	0.0097	0.0101	0.0038	-0.0007	0.0108	-0.0220	0.0104	0.0172	-0.0142	0.0180	-0.0056
FOSECO	-0.0283	0.0012	0.0197	0.0030	0.0058	0.0130	-0.0160	-0.0505	-0.0041	-0.0014	0.0049	-0.0723	-0.0272	0.0232	0.0187	-0.0744

TABLE - 5: DISTRIBUTION OF CUMULATIVE ABNORMAL RETURNS (CAR) AFTER MERGER AND ACQUISITION PERIOD – MARKET ADJUSTED MODEL

COMPANY	Day Relative to Announcement														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SAPTAR	0.1603	-0.0085	-0.1345	-0.0860	-0.0779	0.2019	0.2177	0.1489	-0.0141	0.2560	0.2492	-0.1062	-0.2114	-0.2484	-0.0272
CADBURY	-0.0060	-0.0275	0.0055	0.0310	-0.0284	0.0145	0.0004	0.0066	-0.0223	0.0259	0.0095	0.0195	-0.0076	-0.0056	-0.0158
MYFELLOW	-0.0963	-0.0109	0.0822	0.2336	-0.1855	-0.0063	-0.0135	0.1675	-0.1805	0.1486	0.3592	-0.0044	-0.2494	-0.2329	0.1526
DCLPOLY	0.0339	-0.0347	-0.0664	0.0217	-0.0457	0.0861	-0.0214	-0.0490	0.0098	-0.0772	-0.0233	-0.0067	-0.0631	0.0610	-0.0697
FORBES	-0.0849	0.0234	-0.0469	0.0922	0.0153	-0.0634	-0.0347	0.0298	-0.0103	0.0140	-0.0011	-0.0600	-0.0033	0.0261	0.0417
MODIRUB	-0.0616	-0.0293	0.0496	-0.0926	-0.0787	-0.0423	0.0715	-0.0095	0.0602	-0.0656	0.0861	0.0356	-0.0893	-0.0891	-0.0858
CASTROL	0.0671	0.0567	-0.0273	0.0151	-0.0318	-0.0083	-0.0196	-0.0097	-0.0070	-0.0037	-0.0187	0.0005	0.0043	-0.0509	-0.0498
MATRIX	0.0260	0.1224	0.0979	0.1429	-0.0365	0.0057	0.0036	0.0230	-0.0002	0.1081	0.1958	-0.0858	-0.0620	-0.0004	-0.0596
SRIVISHN	0.0016	0.0257	0.0143	-0.0380	-0.0041	0.0240	-0.0276	0.0156	-0.0239	0.0284	-0.0112	0.0531	-0.0341	0.0077	-0.0203
INDALUM	-0.0350	-0.0361	-0.0274	-0.0223	-0.0080	0.0105	-0.0036	0.0039	-0.0119	-0.0034	0.0051	-0.0252	0.0051	-0.0165	0.0161
SANDVIK	-0.0242	0.0106	-0.0010	-0.0097	-0.0545	-0.0410	0.0118	0.0263	0.0013	-0.0209	-0.0166	-0.0466	-0.0363	-0.0060	-0.0232
WARTSILA	0.0091	0.0399	-0.0072	0.0083	0.0373	0.0488	-0.0028	-0.0500	0.0051	0.0284	0.0117	-0.0151	0.0119	-0.0054	-0.0142
PHILIPS	-0.0197	-0.0008	0.0123	-0.0367	-0.0043	0.0166	0.0178	0.0175	0.0023	-0.0133	-0.0222	-0.0203	-0.0172	-0.0114	-0.0055
OTIS	-0.0003	-0.0571	-0.0451	0.0073	0.0285	-0.0126	-0.0151	0.0251	-0.0059	0.0109	0.0331	0.0036	-0.0684	0.0134	-0.0123
SKANSKA	-0.0635	-0.0525	0.0783	0.0038	0.0108	0.0144	-0.0208	0.0192	-0.0031	-0.0271	0.0112	-0.0206	-0.0096	0.0023	0.0087
ALFALVL	0.0091	0.0470	0.0103	0.0494	0.0570	-0.0521	0.0120	0.0217	0.0693	-0.0448	0.0209	-0.0290	-0.0081	-0.0420	0.0220
FOSECO	-0.0578	-0.0683	0.0908	0.0385	-0.0622	-0.0033	-0.0268	-0.0554	-0.0386	-0.0617	-0.0357	-0.0909	-0.0875	-0.0902	-0.0692

TABLE - 6.a: DAILY AVERAGE ABNORMAL RETURNS AND CUMULATIVE AVERAGE ABNORMAL RETURNS FOR FOOD SECTOR- MARKET MODEL AND MARKET ADJUSTED MODEL

Day	Relative to Announcement	Market Model				Market Adjusted Model			
		Abnormal Returns	't' Value	Cumulative Abnormal Returns	't' Value	Abnormal Returns	't' Value	Cumulative Abnormal Returns	't' Value
		-15	-0.0811	-1.09	-0.0811	-1.09	-0.0887	-1.17	-0.0887
-14	-0.0231	-0.31	-0.1042	-0.99	0.0133	0.17	-0.0754	-0.70	
-13	-0.1250*	-1.68	-0.2292*	-1.78	-0.1660**	-2.19	-0.2414*	-1.84	
-12	0.0901	1.21	-0.1391	-0.93	0.0485	0.64	-0.1929	-1.27	
-11	-0.0231	-0.31	-0.1621	-0.97	-0.0159	-0.21	-0.2088	-1.23	
-10	-0.0437	-0.59	-0.2058	-1.13	-0.0476	-0.63	-0.2563	-1.38	
-9	-0.0124	-0.17	-0.2182	-1.11	-0.0038	-0.05	-0.2601	-1.30	
-8	-0.0607	-0.82	-0.2789	-1.32	-0.0280	-0.37	-0.2881	-1.34	
-7	-0.1266*	-1.70	-0.4055*	-1.82	-0.1314*	-1.73	-0.4194*	-1.84	
-6	0.0630	0.85	-0.3425	-1.45	0.0688	0.91	-0.3507	-1.46	
-5	-0.0257	-0.34	-0.3682	-1.49	-0.0160	-0.21	-0.3667	-1.46	
-4	-0.1361*	-1.83	-0.5043*	-1.95	-0.1318*	-1.74	-0.4984*	-1.90	
-3	0.0469	0.63	-0.4574*	-1.70	0.0622	0.82	-0.4362	-1.59	
-2	-0.0524	-0.70	-0.5098*	-1.83	-0.0306	-0.40	-0.4668	-1.64	
-1	0.0947	1.27	-0.4151	-1.44	0.0931	1.23	-0.3738	-1.27	
0	-0.1211	-1.63	-0.5361*	-1.80	-0.1199	-1.58	-0.4937	-1.63	
1	0.0651	0.87	-0.4711	-1.53	0.0772	1.02	-0.4165	-1.33	
2	-0.0133	-0.18	-0.4844	-1.53	-0.0180	-0.24	-0.4345	-1.35	
3	-0.0756	-1.02	-0.5600*	-1.73	-0.0645	-0.85	-0.4990	-1.51	
4	-0.0365	-0.49	-0.5964*	-1.79	-0.0275	-0.36	-0.5265	-1.55	
5	-0.0504	-0.68	-0.6468*	-1.90	-0.0532	-0.70	-0.5797*	-1.67	
6	0.0993	1.33	-0.5476	-1.57	0.1082	1.43	-0.4715	-1.33	
7	0.0968	1.30	-0.4508	-1.26	0.1091	1.44	-0.3624	-1.00	
8	0.0516	0.69	-0.3992	-1.09	0.0778	1.02	-0.2847	-0.77	
9	-0.0246	-0.33	-0.4238	-1.14	-0.0182	-0.24	-0.3029	-0.80	
10	0.1212	1.63	-0.3026	-0.80	0.1410*	1.86	-0.1619	-0.42	
11	0.0998	1.34	-0.2028	-0.52	0.1294*	1.71	-0.0326	-0.08	
12	-0.0557	-0.75	-0.2585	-0.66	-0.0434	-0.57	-0.0759	-0.19	
13	-0.1177	-1.58	-0.3762	-0.94	-0.1095	-1.44	-0.1854	-0.45	
14	-0.1272*	-1.71	-0.5034	-1.23	-0.1270*	-1.67	-0.3124	-0.75	
15	-0.0297	-0.40	-0.5331	-1.29	-0.0215	-0.28	-0.3339	-0.79	

**Significant at 5% level; *Significant at 10% level

TABLE-6.b: DAILY AVERAGE ABNORMAL RETURNS AND CUMULATIVE AVERAGE ABNORMAL RETURNS FOR TEXTILES SECTOR- MARKET MODEL AND MARKET ADJUSTED MODEL

Day Relative to Announcement	Market Model				Market Adjusted Model			
	Abnormal Returns	t' Value	Cumulative Abnormal Returns	t' Value	Abnormal Returns	t' Value	Cumulative Abnormal Returns	t' Value
	-15	-0.0415	-0.44	-0.0415	-0.44	-0.0225	-0.24	-0.0225
-14	-0.0363	-0.38	-0.0778	-0.58	-0.0201	-0.21	-0.0426	-0.32
-13	-0.1214	-1.28	-0.1992	-1.22	-0.1163	-1.24	-0.1589	-0.98
-12	-0.0626	-0.66	-0.2618	-1.38	-0.0479	-0.51	-0.2068	-1.10
-11	-0.0897	-0.95	-0.3515	-1.66	-0.0654	-0.70	-0.2723	-1.30
-10	0.0667	0.71	-0.2848	-1.23	0.0740	0.79	-0.1983	-0.86
-9	-0.0143	-0.15	-0.2991	-1.20	0.0046	0.05	-0.1937	-0.78
-8	-0.0671	-0.71	-0.3662	-1.37	-0.0534	-0.57	-0.2470	-0.93
-7	-0.0311	-0.33	-0.3973	-1.40	-0.0107	-0.11	-0.2577	-0.92
-6	-0.1043	-1.10	-0.5015*	-1.68	-0.0908	-0.97	-0.3485	-1.18
-5	0.0375	0.40	-0.4640	-1.48	0.0545	0.58	-0.2940	-0.95
-4	-0.1083	-1.15	-0.5723*	-1.75	-0.1050	-1.12	-0.3990	-1.23
-3	-0.0976	-1.03	-0.6699**	-1.97	-0.0806	-0.86	-0.4796	-1.42
-2	0.0535	0.57	-0.6164*	-1.74	0.0745	0.80	-0.4051	-1.16
-1	0.1030	1.09	-0.5134	-1.40	0.1356	1.45	-0.2695	-0.74
0	0.0109	0.12	-0.5025	-1.33	0.0241	0.26	-0.2454	-0.66
1	-0.0715	-0.76	-0.5740	-1.47	-0.0491	-0.52	-0.2945	-0.76
2	-0.0186	-0.20	-0.5926	-1.48	-0.0074	-0.08	-0.3019	-0.76
3	-0.0250	-0.26	-0.6176	-1.50	-0.0104	-0.11	-0.3123	-0.76
4	0.0955	1.01	-0.5222	-1.24	0.1158	1.24	-0.1964	-0.47
5	-0.0893	-0.95	-0.6115	-1.41	-0.0720	-0.77	-0.2684	-0.63
6	-0.0106	-0.11	-0.6221	-1.40	0.0055	0.06	-0.2629	-0.60
7	-0.0423	-0.45	-0.6645	-1.47	-0.0232	-0.25	-0.2861	-0.64
8	0.0274	0.29	-0.6370	-1.38	0.0494	0.53	-0.2367	-0.52
9	-0.0780	-0.82	-0.7150	-1.51	-0.0603	-0.64	-0.2970	-0.63
10	0.0256	0.27	-0.6894	-1.43	0.0285	0.30	-0.2686	-0.56
11	0.0833	0.88	-0.6061	-1.23	0.1116	1.19	-0.1570	-0.32
12	-0.0330	-0.35	-0.6391	-1.28	-0.0237	-0.25	-0.1807	-0.36
13	-0.1175	-1.24	-0.7566	-1.49	-0.1053	-1.12	-0.2859	-0.57
14	-0.0584	-0.62	-0.8150	-1.57	-0.0486	-0.52	-0.3345	-0.65
15	0.0216	0.23	-0.7934	-1.51	0.0415	0.44	-0.2930	-0.56

**Significant at 5% level; *Significant at 10% level.

TABLE-6.c: DAILY AVERAGE ABNORMAL RETURNS AND CUMULATIVE AVERAGE ABNORMAL RETURNS FOR CHEMICAL SECTOR- MARKET MODEL AND MARKET ADJUSTED MODEL

Day Relative to Announcement	Market Model				Market Adjusted Model			
	Abnormal Returns	t' Value	Cumulative Abnormal Returns	t' Value	Abnormal Returns	t' Value	Cumulative Abnormal Returns	t' Value
	-15	0.0020	0.09	0.0020	0.09	0.0090	0.36	0.0090
-14	-0.0135	-0.59	-0.0115	-0.36	-0.0124	-0.49	-0.0034	-0.10
-13	-0.0037	-0.16	-0.0152	-0.39	-0.0096	-0.38	-0.0130	-0.30
-12	-0.0152	-0.67	-0.0304	-0.67	-0.0106	-0.42	-0.0237	-0.47
-11	0.0208	0.92	-0.0096	-0.19	0.0221	0.88	-0.0015	-0.03
-10	0.0341	1.50	0.0245	0.44	0.0279	1.11	0.0264	0.43
-9	-0.0119	-0.52	0.0127	0.21	-0.0214	-0.85	0.0050	0.07
-8	0.0319	1.40	0.0446	0.69	0.0327	1.30	0.0377	0.53
-7	-0.0103	-0.45	0.0343	0.50	-0.0231	-0.92	0.0146	0.19
-6	-0.0164	-0.72	0.0179	0.25	-0.0166	-0.66	-0.0021	-0.03
-5	0.0157	0.69	0.0336	0.44	0.0211	0.84	0.0190	0.23
-4	-0.0352	-1.55	-0.0016	-0.02	-0.0388	-1.54	-0.0198	-0.23
-3	-0.0129	-0.57	-0.0146	-0.18	-0.0113	-0.45	-0.0311	-0.34
-2	-0.0147	-0.65	-0.0293	-0.34	-0.0015	-0.06	-0.0326	-0.35
-1	0.0167	0.73	-0.0126	-0.14	0.0111	0.44	-0.0214	-0.22
0	-0.0293	-1.29	-0.0419	-0.46	-0.0258	-1.03	-0.0473	-0.47
1	0.0066	0.29	-0.0353	-0.38	0.0105	0.42	-0.0368	-0.35
2	0.0492**	2.16	0.0138	0.14	0.0499	1.98	0.0132	0.12
3	0.0388*	1.71	0.0527	0.53	0.0401	1.59	0.0532	0.48
4	0.0228	1.00	0.0755	0.74	0.0218	0.87	0.0750	0.67
5	-0.0344	-1.51	0.0411	0.39	-0.0490*	-1.94	0.0260	0.23
6	-0.0182	-0.80	0.0229	0.21	-0.0150	-0.59	0.0111	0.09
7	0.0164	0.72	0.0393	0.36	0.0185	0.73	0.0296	0.24
8	0.0058	0.26	0.0451	0.41	0.0013	0.05	0.0308	0.25
9	0.0162	0.71	0.0614	0.54	0.0177	0.70	0.0485	0.38
10	0.0229	1.01	0.0842	0.73	0.0129	0.51	0.0614	0.48
11	0.0881***	3.87	0.1723	1.46	0.0877***	3.48	0.1492	1.14
12	-0.0234	-1.03	0.1489	1.24	-0.0166	-0.66	0.1326	0.99
13	-0.0545**	-2.39	0.0944	0.77	-0.0490*	-1.94	0.0836	0.62
14	-0.0390*	-1.72	0.0554	0.44	-0.0468*	-1.86	0.0368	0.27
15	-0.0573**	-2.52	-0.0019	-0.01	-0.0651***	-2.58	-0.0283	-0.20

***Significant at 1% level; **Significant at 5% level; *Significant at 10% level.

TABLE-6.d: DAILY AVERAGE ABNORMAL RETURNS AND CUMULATIVE AVERAGE ABNORMAL RETURNS FOR METAL SECTOR- MARKET MODEL AND MARKET ADJUSTED MODEL

Day Relative to Announcement	Market Model				Market Adjusted Model			
	Abnormal Returns	t' Value	Cumulative Abnormal Returns	t' Value	Abnormal Returns	t' Value	Cumulative Abnormal Returns	t' Value
	-15	-0.0052	-0.20	-0.0052	-0.20	-0.0060	-0.22	-0.0060
-14	0.0011	0.04	-0.0040	-0.11	-0.0037	-0.14	-0.0097	-0.25
-13	-0.0049	-0.19	-0.0089	-0.20	0.0040	0.15	-0.0057	-0.12
-12	-0.0166	-0.65	-0.0255	-0.50	-0.0104	-0.38	-0.0161	-0.30
-11	-0.0024	-0.09	-0.0280	-0.49	0.0062	0.23	-0.0099	-0.16
-10	-0.0097	-0.38	-0.0377	-0.60	-0.0022	-0.08	-0.0121	-0.18
-9	0.0026	0.10	-0.0350	-0.52	0.0037	0.14	-0.0084	-0.12
-8	-0.0207	-0.81	-0.0557	-0.77	-0.0247	-0.91	-0.0330	-0.43
-7	0.0037	0.15	-0.0520	-0.67	0.0100	0.37	-0.0230	-0.28
-6	0.0003	0.01	-0.0517	-0.64	-0.0035	-0.13	-0.0265	-0.31
-5	-0.0308	-1.20	-0.0825	-0.97	-0.0375	-1.38	-0.0640	-0.71
-4	-0.0070	-0.27	-0.0895	-1.01	-0.0127	-0.47	-0.0767	-0.81
-3	0.0068	0.26	-0.0827	-0.89	0.0151	0.56	-0.0616	-0.63
-2	-0.0250	-0.97	-0.1077	-1.12	-0.0261	-0.96	-0.0877	-0.86
-1	0.0071	0.28	-0.1006	-1.01	0.0100	0.37	-0.0777	-0.74
0	-0.0267	-1.04	-0.1273	-1.24	-0.0184	-0.67	-0.0960	-0.88
1	-0.0184	-0.72	-0.1457	-1.38	-0.0167	-0.61	-0.1127	-1.00
2	-0.0018	-0.07	-0.1476	-1.35	0.0048	0.18	-0.1079	-0.93
3	-0.0152	-0.59	-0.1628	-1.45	-0.0119	-0.44	-0.1198	-1.01
4	-0.0155	-0.60	-0.1783	-1.55	-0.0079	-0.29	-0.1277	-1.05
5	-0.0152	-0.59	-0.1935	-1.64	-0.0084	-0.31	-0.1361	-1.09
6	0.0034	0.13	-0.1901	-1.58	0.0061	0.22	-0.1300	-1.02
7	-0.0124	-0.48	-0.2026	-1.64	0.0018	0.07	-0.1282	-0.98
8	0.0012	0.05	-0.2014	-1.60	-0.0066	-0.24	-0.1348	-1.01
9	-0.0023	-0.09	-0.2037	-1.59	-0.0018	-0.07	-0.1366	-1.00
10	-0.0107	-0.42	-0.2143	-1.64	0.0014	0.05	-0.1353	-0.97
11	-0.0018	-0.07	-0.2161	-1.62	0.0001	0.00	-0.1352	-0.95
12	-0.0221	-0.86	-0.2382*	-1.75	-0.0290	-1.06	-0.1642	-1.14
13	-0.0085	-0.33	-0.2467*	-1.78	-0.0064	-0.24	-0.1706	-1.16
14	-0.0118	-0.46	-0.2586*	-1.84	-0.0093	-0.34	-0.1799	-1.21
15	-0.0047	-0.18	-0.2632*	-1.84	-0.0071	-0.26	-0.1870	-1.23

*Significant at 10% level

TABLE-6.e: DAILY AVERAGE ABNORMAL RETURNS AND CUMULATIVE AVERAGE ABNORMAL RETURNS FOR MACHINERY SECTOR- MARKET MODEL AND MARKET ADJUSTED MODEL

Day Relative to Announcement	Market Model				Market Adjusted Model			
	Abnormal Returns	t' Value	Cumulative Abnormal Returns	t' Value	Abnormal Returns	t' Value	Cumulative Abnormal Returns	t' Value
	-15	0.0111	0.72	0.0111	0.72	0.0099	0.54	0.0099
-14	-0.0115	-0.75	-0.0004	-0.02	-0.0086	-0.46	0.0014	0.05
-13	-0.0092	-0.60	-0.0096	-0.36	-0.0054	-0.29	-0.0041	-0.13
-12	0.0011	0.07	-0.0085	-0.28	-0.0014	-0.08	-0.0055	-0.15
-11	-0.0044	-0.29	-0.0129	-0.38	-0.0077	-0.41	-0.0131	-0.32
-10	0.0032	0.21	-0.0097	-0.26	-0.0015	-0.08	-0.0146*	-0.32
-9	-0.0027	-0.17	-0.0124	-0.31	-0.0030	-0.16	-0.0176	-0.36
-8	0.0001	0.00	-0.0123	-0.28	0.0063	0.34	-0.0113	-0.22
-7	0.0061	0.40	-0.0062	-0.13	0.0121	0.65	0.0007	0.01
-6	-0.0092	-0.60	-0.0153	-0.32	-0.0034	-0.18	-0.0026	-0.04
-5	-0.0141	-0.92	-0.0294	-0.58	-0.0133	-0.72	-0.0159	-0.26
-4	0.0009	0.06	-0.0285	-0.54	-0.0023	-0.12	-0.0182	-0.28
-3	0.0025	0.16	-0.0261	-0.47	-0.0027	-0.15	-0.0209	-0.31
-2	-0.0105	-0.69	-0.0366	-0.64	-0.0071	-0.38	-0.0279	-0.40
-1	-0.0071	-0.46	-0.0437	-0.74	0.0078	0.42	-0.0202	-0.28
0	0.0031	0.20	-0.0405	-0.66	-0.0011	-0.06	-0.0212	-0.29
1	-0.0273*	-1.79	-0.0679	-1.08	-0.0186	-1.01	-0.0398	-0.52
2	-0.0316**	-2.06	-0.0994	-1.53	-0.0159	-0.86	-0.0557	-0.71
3	-0.0023	-0.15	-0.1018	-1.53	0.0140	0.75	-0.0417	-0.52
4	-0.0017	-0.11	-0.1035	-1.51	0.0060	0.32	-0.0358	-0.43
5	-0.0015	-0.09	-0.1049	-1.50	0.0230	1.24	-0.0128	-0.15
6	-0.0071	-0.46	-0.1120	-1.56	-0.0084	-0.46	-0.0212	-0.24
7	-0.0155	-1.01	-0.1275	-1.74	-0.0015	-0.08	-0.0227	-0.26
8	0.0096	0.63	-0.1179	-1.57	0.0209	1.13	-0.0018	-0.02
9	-0.0043	-0.28	-0.1221	-1.60	0.0157	0.85	0.0138	0.15
10	-0.0096	-0.62	-0.1317*	-1.69	-0.0186	-1.00	-0.0048	-0.05
11	0.0081	0.53	-0.1236	-1.55	0.0108	0.58	0.0060	0.06
12	-0.0199	-1.30	-0.1434*	-1.77	-0.0166	-0.90	-0.0106	-0.11
13	-0.0202	-1.32	-0.1636**	-1.99	-0.0258	-1.40	-0.0364	-0.37
14	-0.0055	-0.36	-0.1691**	-2.02	-0.0094	-0.51	-0.0458	-0.45
15	-0.0014	-0.09	-0.1704**	-2.00	0.0032	0.17	-0.0426	-0.41

**Significant at 5% level; *Significant at 10% level

TABLE-6.f: DAILY AVERAGE ABNORMAL RETURNS AND CUMULATIVE AVERAGE ABNORMAL RETURNS FOR NON-METAL & OTHERS SECTOR- MARKET MODEL AND MARKET ADJUSTED MODEL

Day Relative to Announcement	Market Model				Market Adjusted Model			
	Abnormal Returns	t' Value	Cumulative Abnormal Returns	t' Value	Abnormal Returns	t' Value	Cumulative Abnormal Returns	t' Value
	-15	-0.0265	-1.12	-0.0265	-1.12	-0.0243	-0.96	-0.0243
-14	0.0073	0.31	-0.0192	-0.57	0.0037	0.14	-0.0207	-0.58
-13	-0.0047	-0.20	-0.0238	-0.58	0.0076	0.30	-0.0131	-0.30
-12	-0.0049	-0.21	-0.0287	-0.61	0.0000	0.00	-0.0132	-0.26
-11	-0.0010	-0.04	-0.0297	-0.56	0.0024	0.09	-0.0108	-0.19
-10	-0.0056	-0.24	-0.0353	-0.61	0.0053	0.21	-0.0056	-0.09
-9	-0.0103	-0.43	-0.0455	-0.73	-0.0064	-0.25	-0.0120	-0.18
-8	-0.0161	-0.68	-0.0616	-0.92	-0.0253	-1.00	-0.0373	-0.52
-7	-0.0032	-0.13	-0.0648	-0.92	-0.0008	-0.03	-0.0380	-0.50
-6	-0.0076	-0.32	-0.0724	-0.97	-0.0040	-0.16	-0.0420	-0.53
-5	-0.0180	-0.76	-0.0903	-1.15	-0.0112	-0.44	-0.0531	-0.63
-4	-0.0184	-0.78	-0.1087	-1.33	-0.0080	-0.32	-0.0611	-0.70
-3	0.0247	1.05	-0.0840	-0.99	0.0281	1.11	-0.0331	-0.36
-2	-0.0498**	-2.11	-0.1338	-1.52	-0.0449*	-1.78	-0.0779	-0.83
-1	-0.0461*	-1.95	-0.1798*	-1.97	-0.0379	-1.50	-0.1158	-1.18
0	-0.0460*	-1.95	-0.2257**	-2.39	-0.0345	-1.37	-0.1502	-1.49
1	-0.0445*	-1.89	-0.2702***	-2.78	-0.0281	-1.11	-0.1783	-1.71
2	-0.0271	-1.15	-0.2973***	-2.97	-0.0213	-0.84	-0.1996	-1.86
3	0.0336	1.42	-0.2638**	-2.57	0.0526**	2.08	-0.1471	-1.34
4	-0.0031	-0.13	-0.2668**	-2.53	0.0003	0.01	-0.1468	-1.30
5	-0.0446*	-1.89	-0.3114***	-2.88	-0.0332	-1.31	-0.1800	-1.56
6	-0.0029	-0.12	-0.3142***	-2.84	0.0104	0.41	-0.1696	-1.43
7	-0.0222	-0.94	-0.3364***	-2.98	-0.0272	-1.08	-0.1968	-1.63
8	-0.0186	-0.79	-0.3550***	-3.07	-0.0199	-0.79	-0.2167*	-1.75
9	-0.0369	-1.57	-0.3919***	-3.32	-0.0313	-1.24	-0.2480**	-1.97
10	-0.0291	-1.23	-0.4209***	-3.50	-0.0167	-0.66	-0.2646**	-2.06
11	-0.0208	-0.88	-0.4417***	-3.61	-0.0235	-0.93	-0.2881**	-2.20
12	-0.0104	-0.44	-0.4521***	-3.62	-0.0189	-0.75	-0.3070**	-2.30
13	-0.0645***	-2.74	-0.5166***	-4.07	-0.0608**	-2.41	-0.3678***	-2.71
14	-0.0467**	-1.98	-0.5633***	-4.36	-0.0413	-1.63	-0.4090***	-2.96
15	-0.0610***	-2.59	-0.6243***	-4.76	-0.0448*	-1.77	-0.4538***	-3.23

***Significant at 1% level; **Significant at 5% level; *Significant at 10% level.

TABLE-6.g: DAILY AVERAGE ABNORMAL RETURNS AND CUMULATIVE AVERAGE ABNORMAL RETURNS FOR ALL SECTORS- MARKET MODEL AND MARKET ADJUSTED MODEL

Day Relative to Announcement	Market Model				Market Adjusted Model			
	Abnormal Returns	t' Value	Cumulative Abnormal Returns	t' Value	Abnormal Returns	t' Value	Cumulative Abnormal Returns	t' Value
	-15	-0.0179	-0.87	-0.0179	-0.87	-0.0144	-0.69	-0.0144
-14	0.0073	0.35	-0.0106	-0.36	0.0037	0.17	-0.0107	-1.19
-13	-0.0047	-0.23	-0.0153	-0.43	0.0076	0.36	-0.0032	-1.33
-12	-0.0049	-0.24	-0.0202	-0.49	0.0000	0.00	-0.0032	-1.47
-11	-0.0010	-0.05	-0.0212	-0.46	0.0024	0.11	-0.0009	-1.54
-10	-0.0056	-0.27	-0.0267	-0.53	0.0053	0.25	0.0044	-1.52
-9	-0.0103	-0.50	-0.0370	-0.68	-0.0064	-0.31	-0.0020	-1.62
-8	-0.0161	-0.78	-0.0531	-0.91	-0.0253	-1.21	-0.0273**	-2.15
-7	-0.0032	-0.15	-0.0562	-0.91	-0.0008	-0.04	-0.0281***	-2.63
-6	-0.0076	-0.37	-0.0638	-0.98	-0.0040	-0.19	-0.0320***	-3.13
-5	-0.0180	-0.87	-0.0818	-1.19	-0.0112	-0.53	-0.0432***	-3.75
-4	-0.0184	-0.89	-0.1002	-1.40	-0.0080	-0.38	-0.0512***	-4.43
-3	0.0247	1.20	-0.0755	-1.01	0.0281	1.34	-0.0231***	-4.70
-2	-0.0498**	-2.41	-0.1253	-1.62	-0.0449**	-2.15	-0.0680***	-5.52
-1	-0.0460**	-2.22	-0.1712**	-2.14	-0.0379*	-1.81	-0.1058***	-6.77
0	-0.0460**	-2.22	-0.2172***	-2.63	-0.0345	-1.65	-0.1403***	-8.35
1	-0.0445**	-2.15	-0.2617***	-3.07	-0.0281	-1.34	-0.1684***	-10.17
2	-0.0271	-1.31	-0.2888***	-3.29	-0.0213	-1.02	-0.1897***	-12.13
3	0.0336	1.62	-0.2552***	-2.83	0.0526**	2.51	-0.1371***	-13.42
4	-0.0031	-0.15	-0.2583***	-2.79	0.0003	0.01	-0.1369***	-14.65
5	-0.0446**	-2.16	-0.3028***	-3.20	-0.0332	-1.59	-0.1700***	-16.18
6	-0.0029	-0.14	-0.3057***	-3.15	0.0104	0.50	-0.1597***	-17.54
7	-0.0222	-1.07	-0.3278***	-3.31	-0.0272	-1.30	-0.1869***	-19.12
8	-0.0186	-0.90	-0.3464***	-3.42	-0.0199	-0.95	-0.2068***	-20.83
9	-0.0369*	-1.79	-0.3833***	-3.71	-0.0313	-1.50	-0.2380***	-22.78
10	-0.0291	-1.41	-0.4124***	-3.91	-0.0167	-0.80	-0.2547***	-24.82
11	-0.0208	-1.01	-0.4332***	-4.03	-0.0235	-1.12	-0.2781***	-27.01
12	-0.0104	-0.50	-0.4436***	-4.06	-0.0189	-0.90	-0.2970***	-29.30
13	-0.0645***	-3.12	-0.5081***	-4.57	-0.0608***	-2.91	-0.3578***	-32.06
14	-0.0467**	-2.26	-0.5548***	-4.90	-0.0413**	-1.97	-0.3991***	-35.09
15	-0.0610***	-2.95	-0.6158***	-5.35	-0.0448**	-2.14	-0.4438***	-38.42

***Significant at 1% level; **Significant at 5% level; *Significant at 10% level.

TABLE-7.a: COMPANY-WISE ABNORMAL RETURNS FOR VARIOUS TIME PERIOD SURROUNDING THE ANNOUNCEMENT DAY OF MERGER AND ACQUISITION THE PERIOD, DURING 1999-00 TO 2003-04 MARKET MODEL AND MARKET ADJUSTED MODEL

COMPANY	Market Model						Market Adjusted Model					
	0	-1, 1	-2,2	-5,5	-10,10	-15,15	0	-1, 1	-2,2	-5,5	-10,10	-15,15
SAPTAR	-0.2335 (-1.56)	0.1010 (0.39)	-0.0345 (-0.10)	-0.5515 (-1.11)	-0.1983 (-0.29)	-0.9405 (-1.13)	-0.2259 (-1.49)	0.1290 (0.49)	0.0364 (0.11)	-0.4018 (-0.80)	0.1713 (0.25)	-0.5523 (-0.66)
CADBURY	-0.0086 (-0.59)	-0.0236 (-0.94)	-0.0195 (-0.60)	-0.0571 (-1.18)	-0.0826 (-1.24)	-0.1256 (-1.55)	-0.0139 (-0.79)	-0.0284 (-0.93)	-0.0330 (-0.84)	-0.0562 (-0.96)	-0.0776 (-0.96)	-0.1155 (-1.18)
MYFELLOW	0.1879 (0.75)	0.3766 (0.87)	0.5534 (0.99)	0.2740 (0.33)	-0.0324 (-0.03)	-0.8621 (-0.62)	0.2086 (0.84)	0.4946 (1.15)	0.7210 (1.30)	0.5700 (0.69)	0.5593 (0.49)	0.0528 (0.04)
DCLPOLY	-0.0168 (-0.18)	0.0134 (0.08)	-0.0905 (-0.43)	-0.2472 (-0.79)	-0.4420 (-1.02)	-0.8962 (-1.70)	-0.0061 (-0.07)	0.0591 (0.37)	-0.0207 (-0.10)	-0.1005 (-0.32)	-0.2011 (-0.47)	-0.5636 (-1.09)
FORBES	-0.1383*** (-2.77)	-0.2627*** (-3.04)	-0.2309** (-2.07)	-0.3567** (-2.15)	-0.5394** (-2.36)	-0.6220** (-2.24)	-0.1302** (-2.48)	-0.2219** (-2.44)	-0.1672 (-1.43)	-0.2292 (-1.32)	-0.3471 (-1.44)	-0.3682 (-1.26)

TABLE-7. a CONTINUED

COMPANY	Market Model						Market Adjusted Model					
	0	-1, 1	-2,2	-5,5	-10,10	-15,15	0	-1, 1	-2,2	-5,5	-10,10	-15,15
MODIRUB	-0.0211 (-0.43)	-0.0365 (-0.43)	-0.1232 (-1.12)	-0.2369 (-1.46)	-0.0641 (-0.29)	-0.2031 (-0.74)	-0.0229 (-0.42)	-0.0556 (-0.59)	-0.1091 (-0.89)	-0.2837 (-1.57)	-0.1902 (-0.76)	-0.3653 (-1.20)
CASTROL	-0.0341 (-1.37)	0.0386 (0.89)	0.0992* (1.78)	0.0034 (0.04)	-0.0758 (-0.66)	-0.1283 (-0.92)	-0.0285 (-1.01)	0.0320 (0.65)	0.0997 (1.58)	-0.0164 (-0.17)	-0.1595 (-1.23)	-0.2475 (-1.57)
MATRIX	-0.0327 (-0.71)	-0.0203 (-0.26)	0.1092 (1.07)	0.3031** (2.00)	0.4214** (2.01)	0.3258 (1.28)	-0.0261 (-0.53)	0.0110 (0.13)	0.1422 (1.29)	0.3844** (2.34)	0.5386** (2.38)	0.5280* (1.92)
SRIVISHN	-0.0061 (-0.26)	-0.1038** (-2.55)	-0.1961*** (-3.73)	-0.1470* (-1.89)	-0.2182** (-2.03)	-0.2990** (-2.29)	0.0055 (0.22)	-0.0873** (-2.02)	-0.1745** (-3.12)	-0.0899 (-1.08)	-0.0767 (-0.67)	-0.1045 (-0.75)
INDALUM	-0.0388 (-0.90)	-0.0607 (-0.81)	-0.1071 (-1.11)	-0.1980 (-1.38)	-0.2290 (-1.15)	-0.2929 (-1.21)	-0.0308 (-0.68)	-0.0431 (-0.55)	-0.1027 (-1.02)	-0.1936 (-1.29)	-0.2186 (-1.06)	-0.2905 (-1.15)
SANDVIK	-0.0056 (-0.17)	-0.0232 (-0.40)	-0.0208 (-0.28)	-0.0809 (-0.72)	-0.1224 (-0.79)	-0.2231 (-1.19)	-0.0011 (-0.03)	-0.0319 (-0.51)	-0.0313 (-0.39)	-0.1166 (-0.98)	-0.1537 (-0.93)	-0.2567 (-1.28)

TABLE-7. a CONTINUED

COMPANY	Market Model						Market Adjusted Model					
	0	-1, 1	-2,2	-5,5	-10,10	-15,15	0	-1, 1	-2,2	-5,5	-10,10	-15,15
WARTSILA	-0.0358 (-0.99)	-0.0302 (-0.48)	-0.0666 (-0.82)	-0.1464 (-1.22)	-0.2077 (-1.25)	-0.2737 (-1.36)	-0.0232 (-0.62)	-0.0002 (0.00)	-0.0050 (-0.06)	-0.0186 (-0.15)	-0.0038 (-0.02)	-0.0138 (-0.07)
PHILIPS	-0.0098 (-0.32)	-0.0576 (-1.08)	-0.0782 (-1.13)	-0.1811* (-1.77)	-0.2125 (-1.50)	-0.3443** (-2.01)	-0.0021 (-0.06)	-0.0624 (-1.09)	-0.0738 (-1.00)	-0.1352 (-1.23)	-0.0656 (-0.43)	-0.1788 (-0.97)
OTIS	0.0067 (0.26)	-0.0077 (-0.17)	-0.0934 (-1.63)	-0.0957 (-1.13)	-0.1091 (-0.93)	-0.1431 (-1.00)	0.0227 (0.71)	0.0167 (0.30)	-0.0633 (-0.89)	-0.0386 (-0.36)	-0.0553 (-0.38)	-0.1052 (-0.59)
SKANSKA	0.0275 (0.79)	-0.0600 (-1.00)	-0.1048 (-1.35)	-0.0478 (-0.41)	-0.1169 (-0.73)	-0.1876 (-0.97)	-0.0192 (-0.50)	-0.0233 (-0.35)	-0.0563 (-0.65)	-0.0433 (-0.34)	-0.0620 (-0.35)	-0.1018 (-0.47)
ALFALVL	-0.0119 (-0.45)	0.0001 (0.00)	-0.0171 (-0.29)	-0.0338 (-0.39)	-0.0365 (-0.30)	-0.0067 (-0.05)	-0.0056 (-0.19)	0.0215 (0.43)	0.0543 (0.83)	0.1766* (1.82)	0.2164 (1.62)	0.2154 (1.33)
FOSECO	-0.0858** (-2.21)	-0.1690** (-2.52)	-0.2305*** (-2.66)	-0.3310*** (-2.58)	-0.5642*** (-3.18)	-0.9496*** (-4.40)	-0.0744* (-1.77)	-0.1135 (-1.56)	-0.1586* (-1.69)	-0.1861 (-1.34)	-0.4309** (-2.24)	-0.8030*** (-3.43)

*p < 0.10; ** p < 0.05; ***p < 0.01. Figures in parenthesis are 't' values.

TABLE-7.b: SECTOR-WISE AND ALL SECTORS' ABNORMAL RETURNS FOR VARIOUS TIME PERIOD SURROUNDING THE ANNOUNCEMENT DAY OF MERGER AND ACQUISITION THE PERIOD, DURING 1999-00 TO 2003-04 MARKET MODEL AND MARKET ADJUSTED MODEL

COMPANY	Market Model						Market Adjusted Model					
	0	-1, 1	-2,2	-5,5	-10,10	-15,15	0	-1, 1	-2,2	-5,5	-10,10	-15,15
Food	-0.1211 (-1.63)	0.0387 (0.30)	-0.0270 (-0.16)	-0.3043 (-1.23)	-0.1405 (-0.41)	-0.5331 (-1.29)	-0.1199 (-1.58)	0.0503 (0.38)	0.0017 (0.01)	-0.2290 (-0.91)	0.0469 (0.13)	-0.3339 (-0.79)
Textile	0.0109 (0.12)	0.0424 (0.26)	0.0773 (0.37)	-0.1100 (-0.35)	-0.3379 (-0.78)	-0.7934 (-1.51)	0.0241 (0.26)	0.1106 (0.68)	0.1777 (0.85)	0.0801 (0.26)	0.0037 (0.01)	-0.2930 (-0.56)
Chemical	-0.0293 (-1.29)	-0.0061 (-0.15)	0.0284 (0.56)	0.0232 (0.31)	0.0938 (0.90)	-0.0019 (-0.01)	-0.0258 (-1.03)	-0.0042 (-0.10)	0.0443 (0.79)	0.0281 (0.34)	0.0630 (0.55)	-0.0283 (-0.20)
Metal	-0.0267 (-1.04)	-0.0380 (-0.85)	-0.0648 (-1.13)	-0.1418 (-1.66)	-0.1864 (-1.58)	-0.2632* (-1.84)	-0.0184 (-0.67)	-0.0251 (-0.53)	-0.0463 (-0.76)	-0.1096 (-1.21)	-0.1254 (-1.00)	-0.1870 (-1.23)
Machinery	0.0031 (0.20)	-0.0313 (-1.18)	-0.0734** (-2.14)	-0.0896* (-1.77)	-0.1188* (-1.69)	-0.1704** (-2.00)	-0.0011 (-0.06)	-0.0119 (-0.37)	-0.0348 (-0.84)	-0.0101 (-0.17)	0.0084 (0.10)	-0.0426 (-0.41)

TABLE-7.b CONTINUED..

COMPANY	MARKET MODEL						MARKET ADJUSTED MODEL					
	0	-1, 1	-2,2	-5,5	-10,10	-15,15	0	-1, 1	-2,2	-5,5	-10,10	-15,15
NON-METAL & OTHERS	-0.0460* (-1.95)	0.1364*** (3.34)	0.2133*** (4.05)	0.2390*** (3.06)	0.3912*** (3.62)	0.6243*** (4.76)	0.0345 (1.37)	-0.1004** (-2.30)	0.1666*** (2.95)	-0.1380 (-1.65)	-0.2538** (-2.19)	0.4538*** (3.23)
ALL SECTORS	0.0460** (2.22)	0.1364*** (3.81)	0.2133*** (4.62)	0.2390*** (3.49)	0.3912*** (4.13)	0.6158*** (5.35)	0.0345 (1.65)	0.1004*** (2.77)	0.1666*** (3.56)	0.1380** (-1.99)	0.2538*** (2.65)	0.4438*** (3.81)

*p < 0.10; ** p < 0.05; ***p < 0.01. Figures in parenthesis are 't' values.

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