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A Study of Effect of Mergers and Acquisitions on Shareholders' Wealth in Indian Diversified Companies

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***Abstract* - Mergers and acquisition are adopted as a strategy by companies to cut competition and increase revenues and thereby increase the wealth of the shareholders. This study examined the impact of mergers and acquisitions on shareholders' wealth in diversified Indian companies from April 2007 to March 2012. The impact has been examined both in the long term and the short term. The long term impact is evaluated using the financial ratios. The short run impact is examined using the event study methodology with an event window of twenty one days prior and post the announcement date of merger and acquisition.**

The findings indicate that acquirer companies earn positive returns in the long run as indicated by the difference in the financial ratios in the pre and post-merger period. In the short run target firms earn positive returns in pre-announcement period and acquirer companies earn positive high returns in post-merger period.

Key Words: Pre-merger, Financial Ratios, Event Methodology, Shareholders' Wealth

I. INTRODUCTION

In today's context corporate mergers and acquisitions (M&A) are used as a strategic tool for the expansion and growth of the companies. It is also a tool of business restructuring which plays a vital role for business as well as for the economy. M&A are of different types to achieve organic and inorganic growth of the company. The different forms of merger include horizontal merger, vertical merger and horizontal merger. These mergers help to battle with the competitive challenges existing in the market. In addition to that, it becomes easier to reduce the unnecessary cost such as the elimination of duplicate departments and then investing these blocked funds in the profit generating activities. This kind of restructuring a business proves to be beneficial to the corporate world as it enables sharing of facilities and all resources amongst the different units of the business entity. It also facilitates using the business secrets of the target companies to make sensible decisions that eventually enhance the wisdom bar within the company.

In the last decade many mergers and acquisitions have taken place in the companies which are diversified. But the researchers have not focussed on the mergers and acquisitions of diversified companies. This study aims to examine whether the wealth of the shareholders increased or not on account of mergers and acquisitions in the diversified sector. The long run impact has been examined using the ratio analysis and the short run impact has been examined using the event study methodology with an event window of twenty-one days before and after the announcement. The short run impact is evaluated for both the acquirer and the target companies but the long run impact is confined to only acquirer companies as the merged companies become part of acquirer companies.

Diversification companies may be diversified on various aspects of the business. It means the increase by a firm in the kinds of businesses which it operates, being that diversity either related to products, geographical markets or knowledge (Chandler, 2010;Berger et al., 2010;Clarke, 2011; Chartejee and Wernerfelt, 2012). Diversification seeks to minimize credit and other risks and reduce volatility in profits. It is achieved through the merger by expanding geographically and by taking on different products or developing new ones using newly-acquired capabilities. Diversification is often the main driver of cross-sector conglomerates and cross-border mergers Berger et al., (2010). Managers of firms often give diversification as a reason for entering into mergers and acquisitions. The explanation behind this is that the risk of earnings volatility is minimized when the activities of a firm are diversified. Thus, when one aspect of operations is on the downside the loss can be compensated for or offset by increased or continued earnings in another aspect.

II. REVIEW OF LITERATURE

Mergers and acquisitions have been in the corporate world of developed countries and the regulatory framework of many developing countries did not encourage mergers in the corporate sector. Therefore, the earlier studies are

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mainly in the developed countries and the research in the developing countries is lesser.

A broad review of literature showed mixed results with respect to market reactions to acquisitions by diversified companies. Morck, Shleifer, and Vishny (1990) examined the market reaction of diversifying sector acquisitions. The study was conducted during 1975 to 1987 with a sample of 327 U. S. acquisitions. The study found negative returns were earned by acquirer companies around the announcement period.

Pawaskar, (2001) examined thirty six acquisitions of Indian origin during 1992-95. The study concluded that post-merger profitability did not increase for the acquirer companies.

Wolf et al. (2002) examined the data of 356 firms during 1980 to 1995 and found that the acquiring companies were in no better position in the post-merger period. Miller et al. (2008) studied the cross -border M&A transactions during the period 1990 to 1999 and concluded that acquirer companies' value decreased in and around the acquisition period. Kumar (2009) examined the post-merger operating performance and attempted to study synergies, if any, resulting from mergers. The study used accounting data to examine merger related gains to the acquiring firms. It concluded that the post-merger profitability, asset turnover and solvency of the acquiring company, on an average, depicted no improvement when compared with pre-merger values.

Bhagat, Malhotra, and Zhu (2011) analysed 698 cross-border acquisitions of firms in emerging countries during the period between 1991 and 2008. The authors found that acquirers in emerging countries experienced a positive and significant market response of 1.090% on the announcement day in unrelated acquisitions.

Akben and Yilmaz (2011) examined the impact of M&A deals on the performance of acquirer Turkish companies. For the study of performance of the acquiring companies, two approaches were used by the author. First was stock market approach in which an event study is conducted to measure whether any abnormal returns are earned by security holders around M&A announcements. The core assumption of the event-study methodology is that if information communicated to the market contains any useful and surprising content an abnormal return will occur. The second is accounting approach wherein three profitability ratios are used to assess changes in corporate performance: ROA (Return on assets defined as Net Income/Total Assets), ROE (Return on equity defined as Net Income/Total Equity) and ROS (Return on sales defined as Net Income/Net Sales). They found mixed results for the Turkish firms.

According to Brealey et al (2013), diversification is easier and cheaper for individual shareholders than for the corporations. Thus while diversification may shield a company against a downturn in an industry it does not deliver value. This is because individual shareholders are able to achieve the same cushion by diversifying their individual portfolios at much lower costs than those of mergers. Indeed research suggests that in most cases diversification does not increase the firm's value. In fact many studies find that diversified firms are worth significantly less than the sum of their individual parts. Companies diversify in order to broaden their activities by increasing services, markets and products. Thus the aim of diversifying is to enable firms enter other business units that are different from their core activities. Most literature conducted on diversification is in agreement that diversification is a form of growth strategy. Many organizations implement two or more forms of growth strategies, in order to speed up the increase in market share or sales thereby improving financial performance of firms (Jacquemin et al, 2009). Previously diversification came either accidentally or by intuition and diversifying into unrelated business (conglomerate) according (Mueller 2010) was a way to decrease the risk involved in the existing operations of the business.

Montgomery (2014) identified three primary reasons that drive companies to implement diversification strategies. First is market–power belief which assumes that as a firm becomes a conglomerate, it can obtain stronger position. Second is the agency attitude which assumes that managers implement diversification to uplift status of the firm and also reduce risk of financial volatility in times of economic turbulence. Third is the resource based view that encourages firms to diversify when it has excess resources; these resources may be utilized elsewhere to improve the firms' productivity.

Selcuk & Kiymaz, (2015) examined the impact of diversifying acquisitions on acquiring Turkish firms. For conducting the study, they used a sample's of 98 acquisitions during 2000-2011. The study concluded that acquiring firms experience statistically significant wealth gains surrounding the announcement date. The cross-sectional regression results showed that diversifying acquisitions create higher wealth gains to acquirers compared with focused acquisitions. Finally, the study concluded that results differ among group affiliated and independent firms. There is no significant difference between the two types of acquisition activities.

Rani et al (2015) found that market started reacting prior to the announcement, at the time of announcement, information became publicand investors started reacting and stock price jumpeds high, along with abnormal positive returns.

Aggarwal & Singh (2015) conducted case study of King Fisher Airlines. They used pre and post-merger methodology for the study and for analysing financial

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performance used ratio specifically in the area of Profitability, liquidity & leverage. Further T test was used to determine significant differences in the financial performance. Thy concluded that there was no significant positive change achieved by King Fisher after the merger.

Prakash (2017) examined the shareholder value creation by analysing the short-run abnormal returns accruing to the shareholders of acquiring, target, and hypothetical combined entities on announcement of mergers and acquisitions (M&As) during 2000 – 2010. He used the market-adjusted model of the popular event study methodology. For the study, 29 pairs of companies during April 1,2000 to March 31, 2010 were analysed. The study concluded that shareholders of acquirer companies earned significant abnormal returns while shareholders of target firms were facing significant losses .

Gupta (2019) examined impact of merger announcements on stock returns of acquiring Indian firms using a sample of 428 merger events that took place during 2008 to 2015 in sectors other than financial and agricultural sector. Event study methodology was applied by using seventeen days event window, i.e., -8 to +8 days stock returns. The result concluded that merger deals did not bring any abnormal changes in stock returns pre and post event date, which implies that traders were not able to gain abnormal returns in pre-post event period. These findings are consistent with Bradley et al., (1988); Servaes, (1991); Mulherin and Boone, (2000), Khan (2011), Kemal (2011), Khanal et al. (2014).

Most of the researchers focused only on short run impact on shareholders wealth by event study methodology. This study has undertaken broad approach and examines short run as well as long run impact of M&A. The findings obtained from this research may be helpful for researchers, fund managers, market regulators, investment managers etc.

The research gap shows that no study has been undertaken for diversified companies in India and therefore this study contributes significantly to the existing literature on mergers and acquisitions. The study has been divided into two parts, first it examined the impact of various financial ratios on shareholder wealth of acquirer companies in long run and second part examined the impact of on stock returns on shareholders wealth in short run.

III. RESEARCH METHODOLOGY

Objectives of study: - Based on the review the following objectives have been identified for this study

1. To study the impact of mergers and acquisitions on financial performance of acquirer firms in long run.
2. To examine the impact of mergers and acquisitions on stock returns of acquirer and target diversified companies in short run.

HYPOTHESIS

Various hypotheses have been formulated to examine the impact in the short as well as the long run of M&A of diversified companies in India.

TOOLS FOR DATA COLLECTION

For the current study, secondary data of the mergers announcements and the stock prices and financial ratios of the acquiring and target companies have been collected from prowess database of Center for Monitoring Indian Economy (CMIE). The period of the study is the mergers and acquisitions announcements made during the period of 1st April 2007 to 31st March 2012 M&A announcement are also verified from SEBI website, The other sources of data are the journals, and the website money control.com.. The variables on which the data has been collected are:

1) Date of Merger Announcements
2) Daily Share Prices
3) Daily Sensex Values
4) Financial Ratios of Acquiring Companies

IV. TOOLS FOR DATA ANALYSIS

The statistical tools and techniques used for the study are:

(1) Simple Averages and Varaiance
(2) T-test
(3) Average Abnormal Returns using Market Model
(4) Cummulative Average Abnormal Returns using Market Model

A brief explanation of the various terms are given below:

i. t-test

$$t\text{-}statistic = \frac{\overline{X} - \mu_0}{\frac{s}{\sqrt{n}}}$$

$$df = n - 1$$

$where,$

$$\overline{X} = sample\ mean$$

$$\mu_0 = assumed\ population\ mean\ (null\ hypothesis)$$

$$s = unbiased\ sample\ variance$$

$$df = degrees\ of\ freedom$$

ii. The expected returns and the average returns returns under the market model are calculated as follows:

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$E(R_{it}) = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$ *for i = 1,.....n*

$E(R_{it})$ = Expected return on security *'i'* in time *'t'*

α_i = alpha coefficient of i^{th} security which is the intercept of a straight-line

β_i = beta coefficient of i^{th} security or the slope of a straight line

R_{mt} = Expected return on BSE 200 Index in period *'t'*

ε_{it} = Error term with mean zero and a constant variance during time *'t'*. This term captures the

iii. The ARs are given by the following model:

$AR_{it} = \varepsilon_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$

where, R_{it} = Actual returns

iv. Mathematical expression to calculate the AAR(average abnormal returns for every day

$AAR\ t=1N\sum i=1NARi, t$ *for i=1...N, t= -21....0....+21*

In the above model,

AAR= Average Abnormal returns

i = the number of specific security in the study

N= total number of securities

t = the days surrounding the event-day

v. Mathematical expression to calculate CAAR .

$CAARi = \sum t = T1+1T2AAR,ti,t$

CAAR: Cumulative Abnormal Return for the event window

ARit :- abnormal Return for security i on day t

1. The long term analysis has been undertaken by first calculating the average of the various ratios for a period of five years in the pre and post-merger period. Thereafter, the t-test has been applied to find out if there is any significant difference in the ratios in the two periods as reflected by the p values. The results of long term analysis are discussed in the subsequent papagraphs.

Table 4.1: Liquidity and Leverage Ratios of Diversified Sector

Indicators	N	Pre-Merger		Post-Merger		t stats	p Value
		Mean	Variance	Mean	Variance		
Current Ratio	10	0.100	0.100	0.300	0.233	-1.000	0.343
Quick Ratio	10	0.800	0.178	0.900	0.322	-0.557	0.591
Cash to Current Liabilities Ratio	10	0.100	0.100	0.521	0.026	-4.152	0.002*
Debt to Equity Ratio	10	0.600	0.267	0.558	0.034	0.358	0.729

**significant at 5% Source: Computed by the Authors from data compiled from CMIE PROWESS Database*

The hypothesis tested for the liquidity and leverage ratios are:

H_{10}: *There is no significant difference in the mean values of the current ratio in the before and after- merger period of Diversified industry.*

H_{11}: *There is significant difference in the mean values of the current ratio in the before and after merger period Diversified industry.*

H_{20}: *There is no significant difference in the mean values of the quick ratio in the before and after merger period of Diversified industry.*

H_{21}: *There is significant difference in the mean values of the quick ratio in the before and after merger period of Diversified industry.*

H_{30}: *There is no significant difference in the mean values of the cash to current liabilities ratio in the before and after merger period of Diversified industry.*

H_{31}: *There is significant difference in the mean values of the cash to current liabilities ratio in the before and after merger period of Diversified industry.*

H_{40}: *There is significant difference in the mean values of the debt to equity ratio in the before and after merger period of Diversified industry.*

H_{41}: *There is no significant difference in the mean values of the debt to equity ratio in the pre and post- merger period of Diversified industry.*

The liquidity and leverage ratios for the pre and post-merger period for the diversified industry are presented in Table 4.1. The current ratio is (0.001) less in pre-merger period as compared to post merger period with the value of 0.300. The quick ratio

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mean value is less (0.800) in the pre-merger period as compared to the post-merger period (0.009) p value of the current and quick ratios are insignificant. The null hypothesis is not rejected for both these ratios. Cash to current Liabilities ratio increased in the post-merger period with value (0.521) and it is less in the pre-merger period with value of 0.100 and p value indicate that there is significant different between both the periods and the null hypothesis is rejected. Debt and equity is higher in the pre-merger period with the value 0.600 as compared with the post-merger period of 0.588 and p value is insignificant and null hypothesis is not rejected.

Table 4.2: Profitability Ratios of Diversified Sector

Indicators	N	Pre-Merger		Post-merger		t Stats	p Value
		Mean	Variance	Mean	Variance		
PAT as % of Total Income	10	5.300	30.233	2.000	383.333	0.606	0.560
Net Profit Margin	10	0.600	282.711	-2.200	1055.067	0.49	0.636
Return on net Worth	10	23.800	298.178	5.918	198.581	2.66	0.026*

**significant at 5% Source: Computed by Authors from data Compiled from CMIE PROWESS Database*

The hypothesis tested for the profitability ratios are:-

H_{10}: *There is no significant difference in the mean values of the PAT as % of Total Income in the pre and post- merger period of diversified industry.*

H_{11}: *There is significant difference in the mean values of the PAT as % of Total Income in the pre and post- merger period of diversified industry.*

H_{20}: *There is no significant difference in the mean values of the Net Profit Margin in the pre and post- merger period of diversified industry.*

H_{21}: *There is significant difference in the mean values of the Net Profit Margin in the pre and post-merger period of diversified industry.*

H_{30}: *There is no significant difference in the mean values of the Return on Net Worth in the pre and post- merger period of diversified industry.*

H_{31}: *There is significant difference in the mean values of the Return on Net Worth in the pre and post- merger period of diversified industry.*

The result of the profitability ratios for the pre and post-merger period of the diversified industry are presented in Table 4.2. The average values of the PAT as % of total income is higher in the pre-merger period (5.300) as compared to the post-merger value (2.000). A null hypothesis cannot be rejected. Variance value is much higher (383.333) in the post-merger period as compared to pre-merger period value (30.233). The net profit margin is positive in the pre-merger period with the mean value of 0.600 and it is negative in the post-merger period with the value of -2.200. Variance value is also higher in post-merger period with the value (1055.067) and p value is not significant, a null hypothesis is not rejected. The mean value of Return on net worth ratio is better in the pre-merger period with the difference value (17.882) as compared to post merger period. The null hypothesis is rejected because p value is less than 0.05**.**

Table 4.3: Operational Performance Ratios of Diversified Sector

Indicators	N	Pre- Merger		Post –Merger		t Stats	p Value
		Mean	Variance	Mean	Variance		
Raw Material Cycle (Days)	10	62.440	1492.528	71.220	2051.194	-1.639	0.140
WIP Cycle (Days)	10	28.560	1237.278	41.330	1690.500	-0.958	0.366
Finished Goods Cycle (Days)	10	15.330	161.250	43.813	600.485	-3.051	0.016*
Gross Operating Ratio	10	40.000	549.750	33.792	465.802	3.038	0.016*
Net Cash flow From Operating Activities	10	1397.330	2046935.500	1869.300	5685412.619	-0.734	0.484
Net Sales	10	676.889	469324.361	803.485	676802.949	-2.759	0.025*

**significant at 5% Source: Computed by the Authors from data compiled from CMIE PROWESS Database*

The hypothesis tested for the profitability ratios are

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H_{10}: *There is no significant difference in the mean values of the raw material cycle in the pre and post- merger period of Diversified Industry.*

H_{11}: *There is significant difference in the mean values of the raw material cycle in the pre and post-Merger- period of Diversified Industry*

H_{20}: *There is no significant difference in the mean values of the WIP Cycle the pre and post- merger period of Diversified Industry.*

H_{21}: *There is significant difference in the mean values of the WIP Cycle in the pre and post-merger period of Diversified Industry.*

H_{30}: *There is no significant difference in the mean values of the Finished Goods Cycle in the pre and post- merger period of Diversified Industry.*

H_{31}: *There is significant difference in the mean values of the Finished Goods Cycle in the pre and post- merger period of Diversified Industry.*

H_{40}: *There is no significant difference in the mean values of the Gross Operating Ratio in the pre and post- merger period of Diversified Industry.*

H_{41}: *There is significant difference in the mean values of the Gross Operating Ratio in the pre and post- merger period of Diversified Industry.*

H_{50}: *There is no significant difference in the mean values of the Net Cash flow From Operating Activities in the pre and post- merger period of Diversified Industry.*

H_{51}: *There is significant difference in the mean values of the Net Cash flow From Operating Activities in the Pre & post- merger period of Diversified Industry.*

H_{60}: *There is no significant difference in the mean values of the Net Sales in the pre and post- merger period of Diversified Industry.*

H_{61}: *There is significant difference in the mean values of the Net Sales in the pre and post-merger period of Diversified Industry.*

The results of operational performance of diversified sector measured by the operating ratios of the pre and post-merger period presented in Table 4.3. The Raw material cycle is higher in the post-merger period with the mean value (71.220) as compared with the pre-merger period mean value (63.440). The null hypothesis is not rejected as p value is insignificant as it is higher than 0.05. The work-in-progress wip cycle mean value is less in the pre-merger period by (12.770) as compare to the post-merger period. A null hypothesis will not be rejected as p value is insignificant. The Finished goods cycle mean value (43.813) is higher in the post-merger as compare to pre-merger period mean value is (15.330). A null hypothesis will be rejected as p value is significant different between both the period. The Gross operating ratio is less in the post-merger period as the value (33.792) with pre-merger value (40.000) p value is significant and null hypothesis will be rejected. The Net operating ratio is higher with the value (1869.300) in the post -merger as compare with the mean value (1397.330) in the pre-merger period and p value indicates that there is no significant difference between both the periods and null hypothesis will not be rejected. The Net sales mean value is (803.485) in the post-merger period which is higher than pre-merger period (676.889) and p value mentioned that there is significant difference between both the periods. A null hypothesis will be rejected.

Table 4.4: Turnover Ratios of Diversified Industry

Indicators	N	Pre- Merger		Post -Merger		t Stats	p Value
		Mean	Variance	Mean	Variance		
Raw Material Turnover	10	7.727	38.818	6.000	24.000	2.297	0.044*
Finished Goods Turnover	10	22.727	351.818	19.909	253.891	1.020	0.332
Debtors Turnover	10	6.600	60.267	5.317	21.947	1.259	0.240
Creditors Turnover	10	12.000	41.800	13.107	64.015	-2.043	0.068
Net Fixed Assets Turnover ratio	10	7.212	46.120	9.393	91.947	-0.211	0.233

**significant at 5% Source: Computed by the Authors from data compiled from CMIE PROWESS Database*

The hypothesis tested for the turnover ratios are:-

H_{10}: *There is no significant difference in the mean values of the raw material turnover ratio in the pre and post- merger period Diversified Industry.*

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H_{11}: *There is significant difference in the mean values of the raw material turnover ratio in the pre and post-merger period Diversified Industry.*

H_{20}: *There is no significant difference in the mean values of the finished goods turnover ratio in the pre and post-merger period Diversified Industry.*

H_{21}: *There is significant difference in the mean values of the finished goods turnover ratio in the pre and post-merger period Diversified Industry.*

H_{30}: *There is no significant difference in the mean values of the debtors turnover ratio in the pre and post- merger period Diversified Industry.*

H_{31}: *There is significant difference in the mean values of the debtors turnover ratio in the pre and post- merger period Diversified Industry.*

H_{40}: *There is no significant difference in the mean values of the creditors turnover ratio in the pre and post- merger period Diversified Industry.*

H_{41}: *There is significant difference in the mean values of the creditors turnover ratio in the pre and post- merger period Diversified Industry.*

H_{50}: *There is no significant difference in the mean values of the net fixed assets turnover ratio in the pre and post- merger period Diversified Industry.*

H_{51}: *There is significant difference in the mean values of the net fixed assets turnover ratio in the pre and post- merger period Diversified Industry.*

The results of turnover ratios for the pre and post-merger period for the diversified sector are presented in Table 4.4. The raw material turnover ratio has significantly declined in the post-merger period with the mean value is (6.000) as compared to the pre-merger period (7.727) and null hypothesis will be rejected as p value is less than 0.5. The finished goods turnover ratio is less in the post-merger period with the value (19.909) and it's higher in pre-merger period with the value (22.727) A null hypothesis will not be rejected because of p value is insignificant. The debtor's turnover ratio has decreased by (1.287) times in the post-merger period. The value of net fixed assets turnover ratio has slightly improved (0.310 times) in the post-merger period. The creditors' turnover ratio has a mean value of (12.000) in the pre-merger period and it's slightly increased (13.107) in the post-merger period. The variance figures have decreased for all the ratios in the post-merger period except creditor's turnover ratio net fixed utilization ratio. The null hypothesis cannot be rejected in all the above ratios except the ratio of raw material turnover ratio.

2. The short-run analysis has been done using the market model for calculation of abnormal returns. The event window is 21 days before and after the announcement period and the date of announcmenet is taken as event window. The average abnormal returns (AAR) and cumulative average abnormal returns (CAAR) have been calculated and the t-test has been used to examine whether the returns are signfciant.

Table 5.1 CAAR of Diversified Acquirer Companies.

Pre-Announcement							Post –Announcement							Around-Announcement					
Days	AAR	CAAR	t stats	P value	Sign.	P value	Days	AAR	CAAR	t stats	P value	Sign.	P value	Days	CAAR	t stats	P value	Sign.	p value
-21	0.001	-0.079	-1.983	0.047*	-0.740	0.459	21	0.002	-0.002	-0.046	0.963	-0.784	0.433	(-21...21)	-0.093	-1.118	0.264	-0.740	0.459
-20	-0.005	-0.079	-1.993	0.046*	-0.740	0.459	20	-0.003	-0.005	-0.088	0.930	-0.116	0.908	(-20...20)	-0.097	-1.146	0.252	-0.740	0.459
-15	0.024	-0.041	-1.408	0.159	-0.071	0.944	15	0.007	0.018	0.412	0.681	-0.116	0.908	(-15...15)	-0.032	-0.531	0.596	-0.071	0.944
-10	0.002	-0.042	-1.832	0.067	-1.409	0.159	10	0.000	-0.001	-0.043	0.965	0.553	0.580	(-10...10)	-0.046	-1.200	0.230	-0.740	0.459
-5	0.003	-0.037	-2.736	0.006*	-1.409	0.159	5	0.006	0.010	0.402	0.688	1.221	0.222	(-5...5)	-0.028	-1.459	0.145	-0.740	0.459
-3	-0.020	-0.035	-2.432	0.015*	-0.740	0.459	3	0.010	0.012	0.502	0.616	1.890	0.059	(-3...3)	-0.022	-0.879	0.380	-0.071	0.944
-2	-0.010	-0.015	-1.326	0.185	-0.740	0.459	2	-0.002	0.003	0.133	0.894	0.553	0.580	(-2...2)	-0.012	-0.667	0.505	0.598	0.550
-1	-0.006	-0.005	-0.627	0.531	0.598	0.550	1	0.004	0.005	0.380	0.704	0.553	0.580	(-1...1)	0.001	0.067	0.947	1.268	0.205

**significant at 5% Source: Computed by the Authors from data compiled from CMIE PROWESS Database*

The results of AAR & CAAR for the pre, post and around announcement dates for various number of days are presented in Table 5.1 before the announcement the AAR is positive for the shareholders of the diversified acquirer company for the period of 21 (0.001) an for the period of 20(-0.005) days it is become negative. The returns are positive for the periods of fifteen, ten & five, days and rest of period it is negative one day prior with the value of (-0.006) before the announcement. The highest AAR returns are for the period of fifteen days (0.024) before the event window and the lowest negative value are for the period of three (-0.020) days. However, the return is significant for only twenty one, twenty, five and three days duration as indicated by the p-value in the pre-announcement period. CAAR is negative entire the period, highest negative value for the period of twenty one days prior with the value (-0.079) and lowest negative value for the period one day prior is (-0.005) in the pre-announcement period. As expected the returns in the post announcement period are positive and out of the

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eight different periods except twenty and three days for which AAR has been calculated only negative which was(-0.003) & (-0.002) respectively, for the days of 3 after the event the returns are positive and high (0.010). The highest negative value in the post announcement period are for period twenty day (-0.003) and p value is not significant during all the various period. Even though the CAAR are negative only for the period of twenty one, twenty, and five and rest of periods the values are positive but which were not significant as reflected by the p-value of various periods. Around the announcement days, for the period of 21 days before and after the event the CAAR value is (-0.093) which is insignificant as the p-value is 0.459, for all the rest of periods the CAAR are also negative except the day of -1+1 day with the value of 0.001 is positive. The rest of various days are p value is not significant as it's more than 0.05.

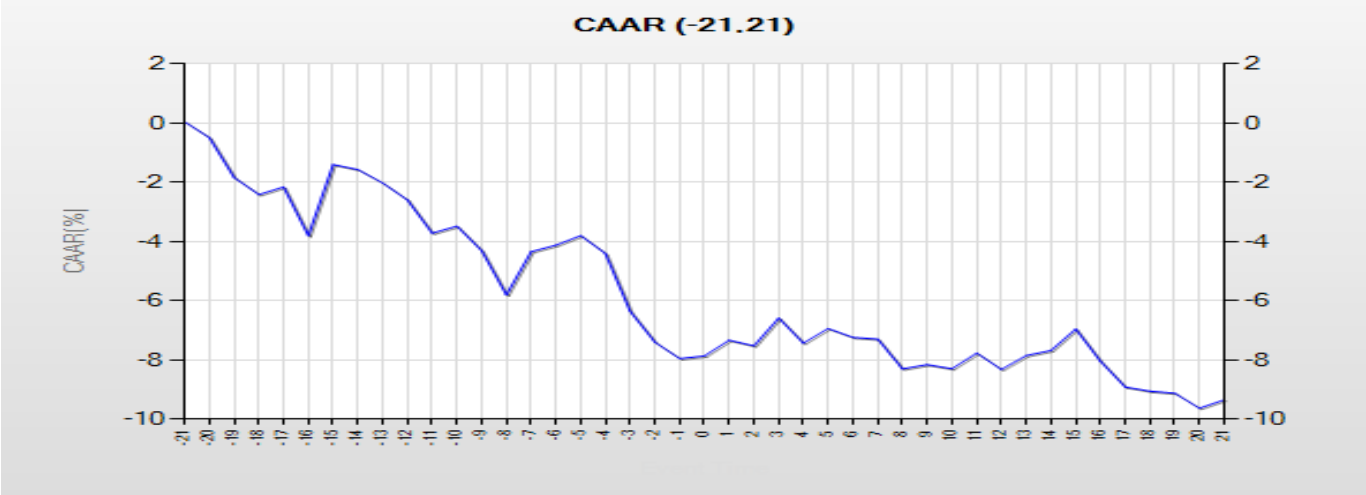

Figure1: CAAR around Announcement Period for Acquirer Companies

The CAAR graph from -21 days to + 21 days for the acquirer companies in diversified sector are given in figure 1. The graph indicates that the CAAR on -21 day is 0.055% which is the maximum returns during the period and on +21 day is -9.335%. The minimum value is -9.617% on day 20 after the announcement. Overall, the graph shows the returns are negative both the periods but it is more negative in the post-announcement period. Thus, the shareholders of the acquirer companies have not earned positive returns in the short run because of this merger announcement.

Pre-Announcement							Post –Announcement							Around-Announcement					
Days	AAR	CAAR	t stats	P value	Sign.	P value	Days	AAR	CAAR	t stats	P value	Sign.	P value	Days	CAAR	t stats	P value	Sign.	p value
-21	0.010	0.027	0.610	0.542	1.887	0.059	21	-0.002	-0.012	-0.198	0.843	1.111	0.267	(-21...21)	-0.016	-0.210	0.834	0.246	0.806
-20	-0.011	0.017	0.440	0.660	1.887	0.059	20	-0.025	-0.011	-0.217	0.828	1.111	0.267	(-20...20)	-0.024	-0.347	0.729	0.246	0.806
-15	-0.001	0.035	1.057	0.290	1.887	0.059	15	0.008	0.010	0.221	0.825	1.111	0.267	(-15...15)	0.013	0.196	0.844	0.246	0.806
-10	0.034	0.021	0.637	0.525	1.067	0.286	10	0.010	0.024	0.677	0.498	1.111	0.267	(-10...10)	0.014	0.215	0.830	1.067	0.286
-5	0.007	0.006	0.174	0.862	1.067	0.286	5	0.014	0.050	2.329	0.019*	1.933	0.053	(-5...5)	0.025	0.684	0.494	1.067	0.286
-3	-0.013	-0.005	-0.285	0.776	-1.395	0.163	3	-0.002	0.032	1.910	0.056	1.111	0.267	(-3...3)	-0.004	-0.223	0.823	0.246	0.806
-2	-0.020	0.007	0.283	0.778	-0.574	0.566	2	0.005	0.034	2.151	0.032*	1.933	0.053	(-2...2)	0.009	0.332	0.740	0.246	0.806
-1	-0.004	0.028	2.013	0.044*	1.887	0.059	1	-0.002	0.029	2.081	0.037*	1.933	0.053	(-1...1)	0.025	1.802	0.072	1.887	0.059

Table: - 5.2 CAAR of the Diversified Target Companies

**significant at 5% Source: Computed by the Authors from data compiled from CMIE PROWESS Database*

The results of AAR & CAAR for the pre, post and around announcement dates for various number of days are presented in Table 5.2 before the announcement the AAR value is mixed up for the shareholders of the diversified target company for the day of 21 (0.010) and it is become negative for the day of 20(-0.011) day. The returns are positive for the periods ten & five, days and rest of period it is negative one day prior with the value of -0.004 before the announcement. The highest returns are for the period of ten days (0.034) before the event window and the lowest negative value are for the period of two (-0.020) day. The CAAR is positive entire the period, highest returns for the period of fifteen days prior with the value (0.035) and lowest value for the period five days prior is (0.006) in the pre-announcement period However, the return is significant for only for one day prior as indicated by the p-value in the pre-announcement period. As expected the returns in the post announcement period are positive and out of the eight different periods except twenty one, twenty, three and one days for which AAR has been calculated which is negative the value (-0.002),(-0.025) and (-0.002), and(- 0.002) respectively, and rest of the period it's positive for the 5 day after the event the returns are positive and high with the value (0.014). The highest

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negative returns in the post announcement period are for the day of twenty (-0.025) and p value is significant difference during five, two and one period. Even though the CAAR are negative only for the day of twenty one and twenty, with the value of (-0.012) & (-0.011) and rest of days it is positive highest value for the periods of five days(0.050) there is no significant as reflected by the p-value of various periods. Around the announcement days, for the day of 21 before and after the event the CAAR value is (-0.016) which is insignificant as the p-value is 0.806, for the period of 20 and 10 days CAAR value is negative and all the rest of periods the CAAR values are also positive. The highest value of CAAR is (0.025) for the period of five day and one day before and after announcement. Though all the days of is p value is no significant difference its value is more than (0.05).

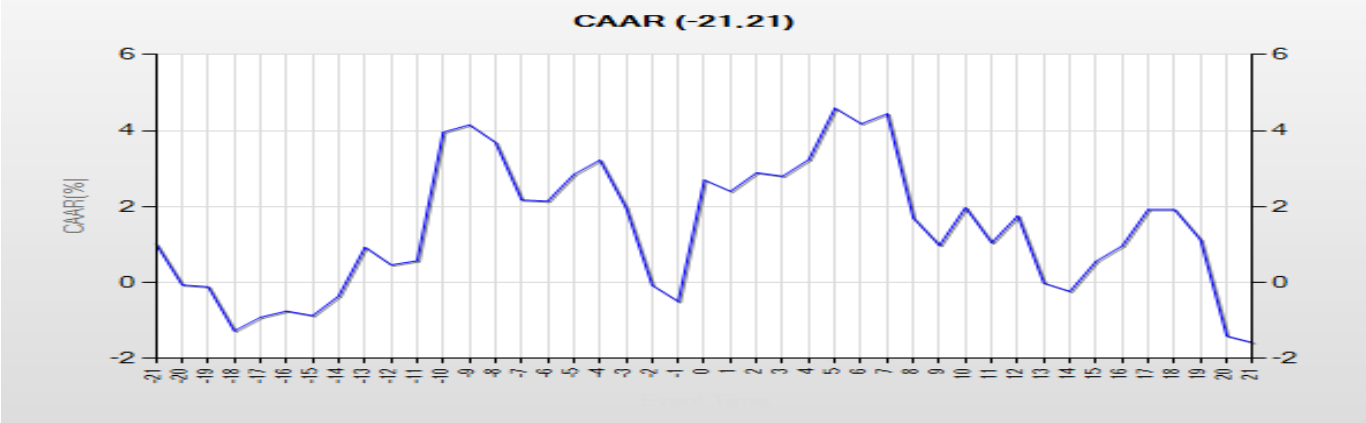

Figure 2: CAAR around Announcement Period for Target Companies

The CAAR graph from -21 days to + 21 days for the target companies in diversified sector are given in figure 2. The graph indicates that the CAAR on -21 day is 1.021% and on +21 day is -1.577% which is also the minimum value during the period. The maximum CAAR is on -4th day with a value of 4.596% and overall graph shows mixed returns trends during the two periods.

V. CONCLUSION

In case of liquidity ratios acquirer firms have better position after the merger as compared to pre-merger period, debt to equity ratio, current ratio and quick ratio are not significantly differenent between both the periods. Only in case of cash to current liability ratio there is significant difference between both the periods of acquirer firms.Liquidity ratios have increased but leverage ratios have decreased in post- merger period.

Profitability ratios indicate that in pre-merger period acquirer firms have better position as compared to post-merger period. All the ratios are not significant except return on net worth Operational efficiency ratio indicate that firms have much better position after the merger because of large production. All the ratios increased in post-merger period of except gross operating ratio.

Turnover ratio indicates that firms have much better position in pre-merger period. All ratios indicate that there is no significant difference in mean value of pre and post-merger periods.

Creditor turnover ratio has increased in post -merger period as compare to pre-merger period similarly net fixed utilization ratio also has been increased in post-merger period.

Stock returns of acquirer firm is better in post-merger period as compare to pre-merger period. While stock returns of target firms' position is better in the pre-merger period than the post -merger period.

The study concludes that acquirer firm increased their wealth after the merger but not as expected and target firms have better position in before the merger.

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