An Empirical Study of the Short Run Performance of Mergers and Acquisitions in India

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Abstract

This paper examines forty mergers and acquisitions in the Indian business sector to determine the returns to shareholders as a result of the merger announcements using the event study approach. The time period for the study is 2009-10 to 2017-18.. The present study also includes a detailed and comparative examination of the nationality of the target firm, Controlling Interest, and Industry relatedness of the firms. It is revealed by the study that cumulative abnormal returns do not sustain for longer time. Short term windows have been proved more beneficial when a comparison is made between varied sizes windows in respect of providing returns to an investor. So, it is major implication of the study that time element plays major role in share market. Cross-border acquisitions offer significantly better returns than domestic acquisitions. Furthermore, cumulative abnormal returns (CARs) for cross-border acquisitions are permanent, but they are temporary for domestic acquisitions. Complete purchases of the target company as a wholly-owned subsidiary provide significantly larger returns than partial/majority control acquisitions. When compared to intra-sector acquisitions, the announcement of inter-sector acquisitions yields higher profits.

Keywords: mergers, acquisitions, cumulative abnormal return

1. Introduction

Mergers and acquisitions are one of the most important managerial decisions firms make on a continuous basis (Mitchell & Stafford, 2000; Khemani, 1991), and they have a considerable impact on the acquiring firms' performance (Agrawal et al., 1992). Mergers and acquisitions have increased dramatically in India, with companies acquiring enterprises both locally and internationally in a variety of industries. According to Panayides and Gong (2002), an announcement of a merger and acquisition has an immediate impact on the stock price of both the target and acquiring business, because mergers and acquisitions force investors to alter their assumptions about the company's future profitability. As a result, these advantages must be considered while evaluating merger and acquisition activity. The goal of this research is to look at the short-term impact of acquirer firms in India in order to assess the success of merger and acquisition strategies. In addition to the above, the following issues have been identified for investigation:

- What is the short-run share price performance of Indian acquiring firms engaged in M&A?
- Do the forms of the target firm (Domestic/Outbound) acquired affect the short-run performance of M&A differently?
- What is the impact of control (the percentage of stake) acquired on the short-run performance of the Indian acquiring firms.
- What is the impact of Industry relatedness (inter-sector/intra-sector) on the short-run performance of M&A?

2 Review of Literature

The impact of merger announcements on shareholder wealth is the primary subject of this study, and the literature evaluation has been focused on the implications of merger announcements on shareholder wealth.

Wansley et al. (1983) aimed at examining the magnitude of abnormal return to the shareholder of merged firms around the merger announcement by using the market model. The analysis was done by differentiating the two hundred and fifty-three firms according to a type of merger and mode of payment for the deal. The period for the studies was 1970 to 1978. It is concluded that horizontal and vertical mergers gained more than conglomerate mergers, and cash acquisitions outperformed securities acquisitions in terms of abnormal returns.

Yuce and Ng (2003) investigated the impact of Canadian corporations' merger announcements from 1994 to 2000. The authors observed that throughout this time span, both target and acquirer companies generated significant positive abnormal returns. However, in the long run, abnormal returns for purchasing companies shrink and became negative. The abnormal returns for target corporations, on the other hand, are non-significant and positive.

Bruner (2002) reviewed one hundred and thirty studies to assess the profitability of merger activity for the period 1971 to 2001 related to market returns. Most of the researches revealed a positive market return to target firms and acquired firms fetched zero abnormal return and targets and bidders collectively got positive returns. The overall conclusion was in favor of the merger but the study highlighted the fact that managers should adopt this strategy of inorganic growth with caution.

Zhu and Hilsenarth (2015) studied the sample of seventy-eight deals of mergers and acquisitions of retail drug stores and proprietary stores industry for the year 1981 to 2009. The Capital Assets Pricing Model of the event study was utilized to calculate cumulative average abnormal return and evaluate the impact of mergers' announcement on acquiring the target and rival firms that are not a party to merger and acquisitions deals. The study demonstrated that mergers and acquisitions generate values for acquiring and target firms in the retail chain pharmacy industries. The study further highlighted the facts that rival firms were affected negatively by the event announcement. Efficient management, economies of scale and scope may be the motivating factors for mergers and acquisitions.

Montgomery and Yuki Takahashi (2018) examined the impact of a merger on associated client firms' well-being. They took the sample of forty one banks which underwent through the process of merger and found out the impact of merger announcement on the related firms' merger abnormal return. The period of the study was 1990-2012. The market adjusted model was used to calculate average abnormal return. The study concluded that mega-mergers of banks could not enhance the welfare of bank as client firms were not observed significant abnormal return around merger announcement. Merger by weak banks had led to negative abnormal return during the window period of one week taken for the analysis. The study also revealed that weak zombie firms experienced loss in welfare after the merger by their main bank.
Wang et al. (2020) evaluated the reaction of acquiring firms' stock returns as a result of fifty-eight cross-border mergers and acquisitions (M&A) between listed Chinese acquirers and German targets. The market model of event study methodology was used to know the shareholder wealth effect during the most recent time of 2012-2018. It is revealed that the announcement of mergers and acquisitions resulted in a positive cumulative abnormal return of on average 2.18% in a window period of five days. In addition, It was discovered several hints of potential information leakage prior to the formal announcement.

Lankapotu and Punna (2019) attempted to assess the effect of horizontal mergers and acquisitions of eight companies of the Indian corporate sector from 2010 to 2018. The entire study was based on secondary data. The analysis was done using the single-factor model. It is revealed that the announcement of the merger had a blend of positive and negative market reaction for all the sampled companies of banking, pharmaceutical, steel, automobile and oil and gas industries. In addition to this, it is disclosed that the event of the merger was proved more beneficial to target firms compared to acquirer firms and target firms gained at the cost of acquirer firms, so the management should remain cautious regarding this strategy of mergers.

According to a review of research on mergers and acquisitions in the areas of strategy and finance, a lot of work has been done on short term performance of mergers and acquisitions using event studies, but when it comes to Indian mergers and acquisitions, studies on measuring shareholders' wealth are scarce. As a result, evaluating mergers and acquisitions in the Indian context is critical. The purpose of this study is to address a vacuum in the literature on mergers and acquisitions in India.

2.1. Objectives of the study

The main aim of the study is to investigate whether the merger and acquisition create or enhance shareholders' values with the help of an efficient market framework.

2.2 Hypothesis

$H_{o:}$ There is no significant cumulative average abnormal return (CAAR) during the event window due to the mergers and acquisitions announcement.

3. Methodology

The event study methodology (Brown and Warner, 1985; MacKinlay, 1997; has been applied to examine the cumulative average abnormal returns (CAR) in a three days, five days, seven days, nine days, twenty one days, thirty one days, and forty one days window period. The semi-strong version of the efficient market hypothesis serves as the foundation for event study analysis. It is presumptively assumed that all publicly available information is promptly included into stock prices upon announcement.

3.1 Event Definition and Date of Announcement

The first date of the announcement of merger and acquisition has been used as the event date for this study (day zero). The acquiring firms' clean period data was gathered 150 days prior to the window period using a market model to estimate cumulative average abnormal return. Under the market model, the expected return is calculated by using clean period share price data. The abnormal return of a security is assessed as the difference between the actual return and expected return.

The daily residual returns (rjt) are estimated for each acquirer compay for 41-day window under the market model as follows:

$$AR_{it} = R_{it} - E(R_{it})$$

Where,

AR_{it} = Abnormal return on security for day t

R_{it} = Actual return on security for day t

$E(R_{it})$ = expected return on security for day t

For measuring the expected return, the following model has been applied.

$$E(R_{it}) = \alpha_1 + \beta_1 R_{mt} = \text{for } 1\text{--------------}N$$

Where,

α_1 = intercept of the regression line

β_1 = slope of the line (The slope of the line representing the sensitivity of return on security to market returns.

R_{mt} = return on market portfolio

The addition of abnormal returns for different periods around the announcement of the event resulted in cumulative abnormal returns.

$$CAR_i = \sum_{t=1}^{T} (AR_{it})$$

CARi – cumulative abnormal return for company i over time period T;

T – Observation period, time period measured in days or months;

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

t- Statistics of cumulative abnormal return:-

$$\frac{CAR}{\hat{S}(AR)\sqrt{t}}$$

Where t is the respective window period

If the calculated value of t – Statistics is greater than 1.96 and 2.58, then the results are statistically significant at 5% and 1% level respectively. It means the event of the merger announcement generated abnormal returns to the acquiring companies of the Indian corporate sector.

3.2 Sample Selection

All the companies of the Indian Corporate sector listed on BSE which have undergone the process of acquisitions from the period 2009-10 to 2017-18 was the target population for the study. Out of which forty companies listed on BSE and acquired more than forty percent share of target has been selected as a sample for the study. The major sources of collection of the sample are the Venture Intelligence, Merger and Acquisitions deal database administered by TSJ Media Pvt Ltd and the website of BSE.

4. Analysis and Interpretation

4.1 Cumulative Average Abnormal Returns to Acquirer Firms during Different Window Period

Table 1. Cumulative Average Abnormal Returns to Acquirer Firms during different window period

Window	Market model	
	CAAR	t- Statistics
(-1,+1) window	0.0234	2.9875**
(-2,+2) window	0.0217	2.1529**
(-3,+3) window	0.0054	0.4488
(-4,+4) window	0.0087	0.5814
(-10,+10) window	0.0036	0.1764
(-15,+15) window	0.0059	0.234
(-20,+20) window	-0.0041	0.1426

Source: www.yahhofinance.com

*significant at 5% level, **significant at 1% Level

The cumulative average abnormal returns for various size windows have been obtained through the market model, and the final figures for the same are presented in table 1. Studying the event window by dividing it into different small-sized windows is of great importance and crucial for investors to discover profitable prospectuses for their excess funds. The results derived on the basis of the market model reveal that the shorter windows have shown impressive results; the three days (-1, +1) window and five days (-2, +2) window have shown significant positive results. The cumulative average abnormal returns have been maximum for the three days (-1, +1) window. The values for which have been registered as 2.34 percent, followed by the five days (-2, +2) window. So, it can be inferred from the results that the investors can earn a substantial profit if they choose to invest in the firms on the very day when the bidder firms announce mergers and acquisitions. So, it is indicated by the major revealing of the event study that if the stocks of the issuing companies are purchased around the announcement day, it can be a rational decision from the point of investors to gain potently.

4.2 Comparison of Domestic and Outbound Merger in Terms of Cumulative Average Abnormal returns (using Market Model)

Table 2: Comparison of Domestic and Outbound merger in Terms of Cumulative Average Abnormal Return (Market Model)

Event window	CAAR (Domestic) N=30	CAAR (Outbound)N=10	Mean difference	t-Statistics	p-value
(-1,+1) window	0.0260	0.0186	0.0074	0.481	0.633
(-2,+2) window	0.0185	0.0234	-0.0049	0.193	0.848
(-3,+3) window	0.0108	0.0163	-0.0056	0.191	0.850
(-4,+4) window	0.0043	0.0418	-0.0376	1.153	0.256
(-10,+10)window	-0.0140	0.0575	-0.0715	1.647	0.108
(-15,+15)window	-0.0249	0.0102	-0.1270	2.645	0.012*
(-20,+20)window	-0.0277	0.0764	-0.1041	1.700	0.097

Source: www.yahhofinance.com

*significant at 5% level, **Significant at 1%level

The summary of the final results of the analysis of cumulative average abnormal return for the domestic and outbound mergers and acquisitions is presented in table 2. The cumulative average abnormal return picture of acquirer firms reveals that 2.60 percent return has been experienced by the shareholder over the window of three days (-1,+1) in case of a domestic merger. The cumulative average abnormal returns during the short window of five days (-2, +2), seven days (-3, +3), nine days (-4, +4) have been registered as 1.85 percent, 1.08 percent, 0.43 percent, respectively. However, the results did not sustain for long, especially for the longer window, as the earning of the acquirer firms has turned to be negative for the other windows. It is revealed that for the twenty-one days (-10, +10) windows, the

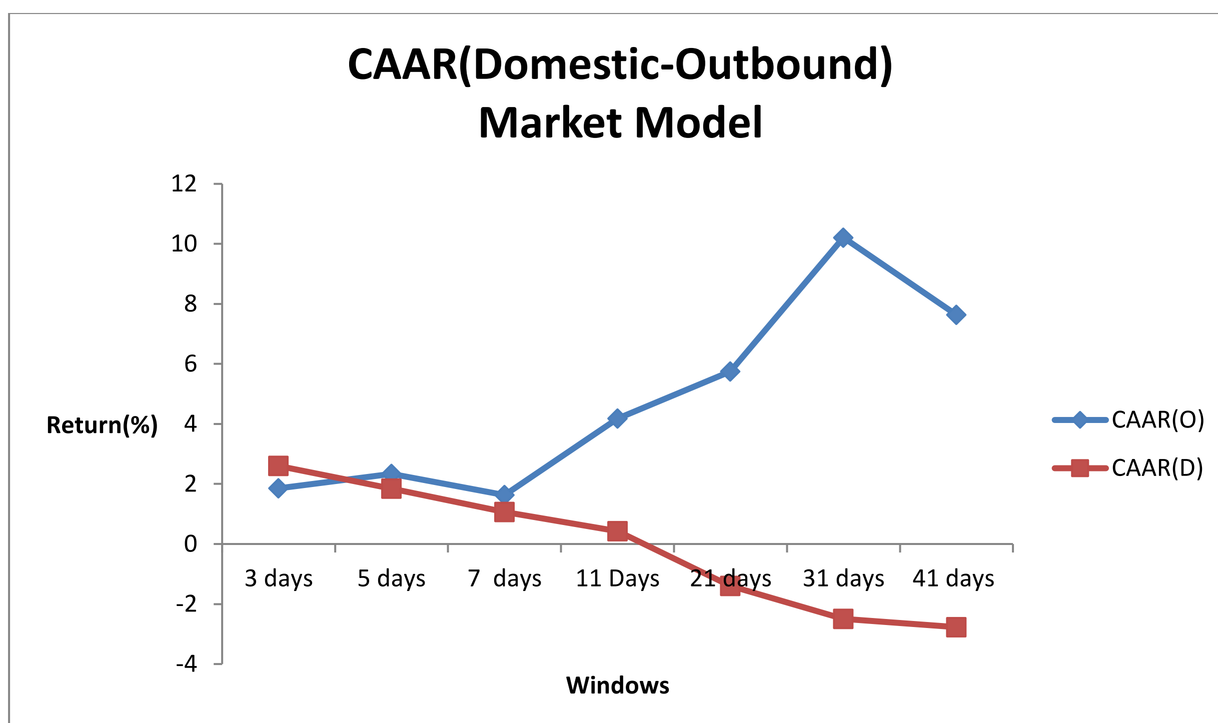
stockholder of the bidder firms has earned a cumulative average abnormal return of -1.40 percent when the merger activity takes place at the domestic level.

Furthermore, the situation got worse as the loss to the stockholders increased for the thirty-one days (-15, +15) window. Almost the same picture has surfaced when results have taken up for the forty one days (-20, +20) window. So, one notable result has been induced that positive cumulative average abnormal returns do not sustain for a long time when a merger is done at the domestic level.

In the case of the outbound merger announcement, the results regarding market reaction show that the shareholders of the bidder firms have been found to get cumulative average abnormal returns of 1.86 percent during the previous and succeeding days to the zero-day, that is, three days (-1,+1) window. One impressive fact has emerged here that distinguished the impact of the outbound merger from domestic cases. The shareholders of the acquiring firms have got positive cumulative average abnormal return throughout the various size windows when a merger deal is taken place by involving the overseas factors. The cumulative average abnormal return value has been 1.86 percent for three days (-1, +1) window, which has increased to 2.34 percent during five days (-2, +2) window period. However, a slight decline has been noticed when the results have been extracted for seven days (-3, +3) window period. The figures in the table also show that the stockholder of the bidder firms that enter into outbound mergers have witnessed increasing returns for nine days (-4, +4) and twenty one days (-10, +10) window periods. It has been observed as 4.18 percent for nine days window while recorded as 5.75 percent for twenty one days window period. However, once again, these increasing trends have not been maintained for longer. It paved the way for decreasing cumulative average abnormal return at 1.02 percent, observed for thirty-one days (-15, +15) window period.

An independent t-test has been applied to analyze the difference between the returns of domestic and outbound acquisitions. The tabulated results suggest that the mean difference has been remained negative throughout the windows barring only the smallest window, during which the mean difference has been observed in positive terms. So it is indicated by the mean difference that under market model analyses that cumulative average abnormal return has been higher in case of an outbound merger to domestic merger. It is also apparent that domestic merger generates wealth at lower rates and fluctuates time and again, whereas the cross border mergers have brought greater returns for the acquirer's shareholders. However, the difference in return between outbound and the domestic merger has not remained significant except only for the thirty-one days (-15, +15) window when the difference has been found significant at a five percent level of probability. It is observed from the graph in Figure 1 that cross-border acquisitions magnify wealth over the entire forty one days (–20, +20) period, whereas domestic acquisitions generate lower wealth and start falling in comparison to cross-border acquisitions.

Figure 1 Cumulative Average Abnormal Return of Domestic and Outbound (Market Model)



4.3 Comparison of Cumulative Average Abnormal Return for the Companies Having Full and Partial Control (Market Model)

Table 3: Comparison of Cumulative Average Abnormal Return for the Companies Having Full and Partial Control (Market Model)

Event window	CAAR (Full Control) N=31	CAAR (Partial Control) N=9	Mean difference	t-Statistics	Significance value(p)
(-1,+1) window	0.0261	0.0174	0.0087	0.551	0.585
(-2,+2) window	0.0205	0.0171	0.0033	0.128	0.899
(-3,+3) window	0.0082	0.0255	-0.0173	-0.574	0.569
(-4,+4) window	0.0146	0.0103	0.0043	0.126	0.901
(-10,+10)window	0.0143	-0.0317	0.046	1.001	0.323
(-15,+15)window	0.0161	-0.0253	0.0415	0.771	0.446
(-20,+20)window	0.0165	-0.0642	0.0807	1.251	0.219

Source: www.yahhofinance.com

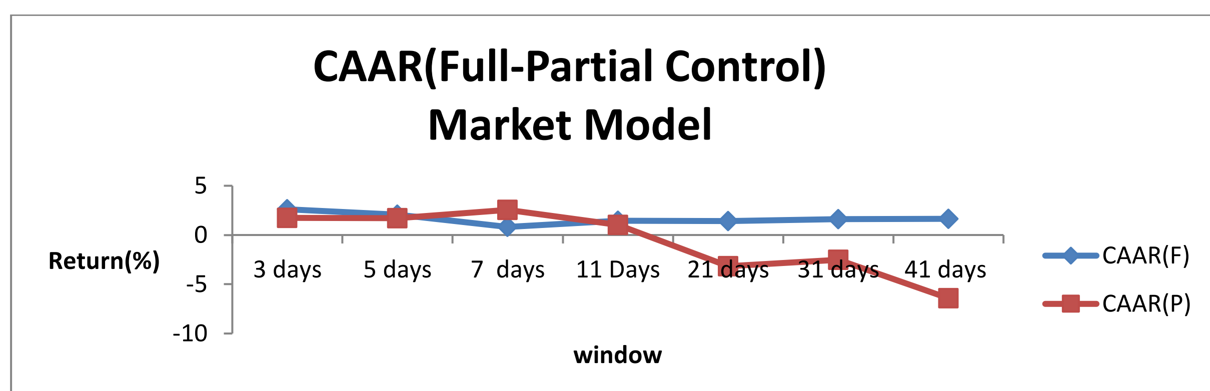
*significant at 5% level, **Significant at 1%level

Table 3 provides the summary of the results obtained for the acquirers having full and partial control under market model analysis. It is evident from the final results that cumulative average abnormal returns have been positive throughout the various window periods when the bidder firms clinched full control over the target firms. During the three days (-1, +1) window period, 2.61 percent cumulative average abnormal return has been accrued to the acquirers firms followed by 2.05 Percent for five days (-2,+2) windows period. The cumulative average abnormal return has been found insignificantly positive during all

sampled windows. It also emerges from the market reaction that cumulative average abnormal return has fluctuated with the changing size of the window. It can also be inferred from the study that in case of full control, acquirer firms tends to get more returns during smaller windows period. However, seven days (-3, +3) window proved the least beneficial period for the investors. But three days (-1, +1) and five days (-2, +2) window periods have been the more profitable period during which maximum returns have been brought to the profit makers from investment. So, the investors choose to invest within two days before the announcement day and two days after the zero-day, for getting a substantial amount of earnings.

In the case of partial control hold by the bidder firms over target firms, the results have not been as impressive as observed in the case of its corresponding control. It is revealed by the numbers that smaller windows have given positive cumulative average abnormal return to the shareholders of the acquirer companies. The amount of returns remains less in comparison to the situation when full control is enjoyed by the bidder firms. The situation becomes worse with the growing size of the windows. During these window periods, the value has been obtained in the negative term. For twenty days (-10, +10) window period, 3.17 percent negative cumulative average abnormal return has been witnessed. During the thirty-one days (-15, +15) window period, the market shows the same negative trend. The mean difference once again proved that the full control acquisition provides higher returns than that of partial control. In addition, cumulative average abnormal return in case of full control seems permanent in nature while the returns under partial looks transient as these seem to vanish with the increase in the size of the window. Figure 3 also verifies the conclusion that the market reaction is positive for full control and negative for partial control mergers and acquisition in long-term windows i.e. twenty-one days (-10, +10) and forty-one days (-20, +20) window. So, the results draw the attention of the decision-makers for keeping their eyes more firmly on acquiring the target companies fully to leverage the opportunity to its fullest to make it a rational strategy for the growth of the company.

Figure 2. Cumulative Averages Abnormal Return of Full Control and Partial Control (Market Model)



4.4 Comparison of Cumulative Average Abnormal Return for Inter-sector and Intra-Sector Mergers and Acquisitions (Market Model)

Table 4 reports the results of the study taken up to check out the effectiveness of announcement in terms of cumulative average abnormal return of the acquirer companies when the acquisitions are taken place inter-sector and intra sector. A comparative analysis of both has been calculated and presented through the figures given in the table. Cumulative earnings over various size windows show that short-term window periods have emerged as an important time for the perspective of investing when the companies decide to adopt intra sector merger.

Table 4: Comparison of Cumulative Average Abnormal Return for Inter-Sector and Intra-Sector Mergers and Acquisitions (Market Model)

Event window	CAAR (Intra-Sector)N=24	CAAR(Inter-Sector)N-16	Mean difference	t-Statistics	Sign. value
(-1,+1) window	0.0214	0.0282	-0.0068	-0.504	0.617
(-2,+2) window	0.017	0.0239	-0.0069	-0.309	0.759
(-3,+3) window	0.0075	0.019	-0.0115	-0.447	0.657
(-4,+4) window	0.0028	0.0299	-0.0271	-0.936	0.355
(-10,+10)window	-0.0128	0.0291	-0.0419	-1.071	0.291
(-15,+15)window	-0.0025	0.0208	-0.0232	-0.505	0.617
(-20,+20)window	-0.0044	0.0024	-0.0068	-0.121	0.904

Source: www.yahhofinance.com

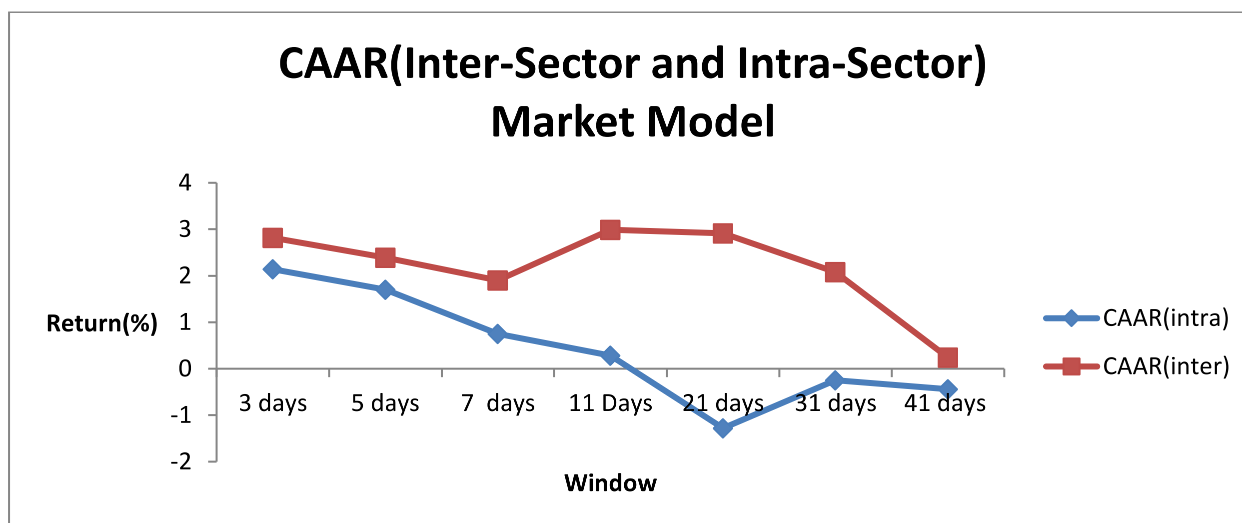
*significant at 5% level, **Significance at 1%level

It is indicated by the results that the earning have started to become negative on the twenty-one days (-10, +10) window period. The maximum returns have been observed for three days (-1, +1) window period which stands at 2.14 percent while the returns for the five days (-2, +2) window have been registered as 1.70 percent. Further, it has declined to 0.75 percent when the result for seven days (-3, +3) window period has been calculated. As we move along further for nine days (-4, +4) window period, the returns have lessened to 0.28 percent. But up to that stage the returns have been observed at least, in positive figures, but as the windows grow larger, the cumulative average abnormal return has started to present a very dismal picture as for the rest of the windows, the returns have been registered in negative values makes the whole scenario gloomier.

As opposite to intra sector merger, an improved scene has been emerged from the inter sector merger reaction when the examination is done under market model. The findings suggest that inter sector acquisitions has proved remarkably favorable for the investors. The findings across the various windows have been remained positive. The positive results calculated for inter-sector merger have been in very much line with the expectations of the decision makers that aims at to realize full potential by exploiting the available resources to its optimum level to gain economies of scale which has become possible after entering in the process of merger. Rational utilization of parent and target firms' resources and judicial use and combination would result in the leverage of capabilities kept by both the firms. So, it can be concluded

that inter sector merger have been more crucial than that of intra sector merger as far as economies of scale are aimed at. Figure 4 has also justified the above results regarding the inter-sector and intra-sector merger. But all the mean differences are statistically insignificant at 5% level of significance as indicated by p value.

Figure 3 Cumulative Abnormal Average Abnormal Returns of Inter-Sector and Intra-Sector Acquisitions (Market Model)



5. Conclusion

The empirical research showed that the cumulative average abnormal returns to acquirer firms are positive during all windows as measured through the market model except forty days window. It is also revealed by the study that shorter windows have left a more positive impact on the investors of the bidder firms. The results are compatible with Monga and Amanpreet 2021. It is indicated by the mean difference that cumulative average abnormal return has been higher in outbound mergers as compare to domestic mergers except three days window (-1,+1). In addition, positive cumulative average abnormal return in case of full control seems permanent in nature while the returns under partial control look transient as these seem to vanish with the increase in the size of the window. So, the results draw the attention of the decision-makers for keeping their eyes more firmly on acquiring the target companies fully to leverage the opportunity to its fullest to make it a rational strategy for the growth of the company. As far as comparison of inter-sector and intra-sector is concerned,the results can lead to the crux that although the announcement in the intra-sector mergers induces some positive reaction but the more potent reaction is exhibited when the merger is done in the inter-sector.

6. Recommendation and future scope of the study

Since the Value of cumulative average abnormal return is more in shorter windows, so it is recommended that the investors should invest near the announcement days for more gains. The negative cumulative abnormal returns obtained in some cases implies for the ineffectiveness of the mergers and acquisitions, so the managers should adopt this strategy very cautiously. As far as future scope of study is concerned, the impact of the mergers and

acquisitions on the performance of the target firms along with bidder firms can be checked out.

References

1. Agrawal, A., Jaffe, J. F., & Mandelker, G. N. (1992). The post-merger performance of acquiring firms: a re-examination of an anomaly. The Journal of finance, 47(4), 1605-1621.
2. Brown, S. J., & Warner, J. B. (1985). Using daily stock returns: The case of event studies. Journal of financial economics, 14(1), 3-31.
3. Bruner, R. F. (2002). Does M&A pay? A survey of evidence for the decision-maker. Journal of applied Finance, 12(1), 48-68.
4. Khemani, R.S. :"Recent Trends in Merger and Acquisition Activity in Canada and Selected Countries," . Paper presented at the Investment Canada Conference, Corporate Globalization through Mergers and Acquisitions, Toronto, November 1990
5. L.Krishanveni.,&P.SathwikTeja, (2019), Impact on mergers announcements on shareholders' Investment in India: Empirical analysis in selected sector. Asian Journal of Management Science, 8, 96-103.
6. MacKinlay, A. C. (1997). Event studies in economics and finance. Journal of economic literature, 35(1), 13-39.
7. Mitchell, M. L., & Stafford, E. (2000). Managerial decisions and long-term stock price performance. The Journal of Business, 73(3), 287-329.
8. Monga, S., & Amanpreet. (2021), Impact of mergers and acquisitions announcement on shareholders' wealth: evidence from Indian corporate sector. Turkish Online Journal of Qualitative Inquiry, 12(10), 2546-2554.
9. Montgomery, H., & Takahashi, Y. (2018). Effect of Bank Mergers on Client Firms: Evidence from the Credit Supply Channel. The Japanese Economic Review, 69(4), 438-449.
10. Panayides, P. M., & Gong, X. (2002). The stock market reaction to merger and acquisition announcements in liner shipping. International journal of maritime economics, 4(1), 55-80.
11. Wang, J., Charifzadeh, M., &Herberger, T. (2020). Do Chinese M&A activities create shareholder value in the short run? Evidence from Chinese-German cross-border takeovers. Corporate law & governance review, 2(2), 33-46.
12. Wansley, J. W., Lane, W. R., & Yang, H. C. (1983). Abnormal returns to acquired firms by type of acquisition and method of payment. Financial management, 12(3), 16-22.
13. Yuce, A., & Ng, A. (2003). Wealth creation in the recent merger boom, the Canadian evidence. Journal of Business & Economics Research (JBER), 1(11).
14. Zhu, P., & Hilsenrath, P. E. (2015). Mergers and acquisitions in US retail pharmacy. Journal of Health Care Finance, 41(3), 1-20.