

Implication of M&As on Shareholders' Wealth- An Event Study Approach

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Abstract

Globalisation and liberalisation have made businesses from emerging countries, such as India, more assertive and have also made them resort to mergers and acquisitions to resolve conflicts arising from competition. Over half of bank mergers in India are the result of government policy actions aimed at rescuing weak banks with high non-performing assets (NPAs), especially in public sector banks, rather than market forces. It is crucial to comprehend how such mergers affect the shareholders' wealth because public sector banks make up a sizable and dominating portion of the Indian banking industry and have between 45% and 49% of their ownership held by private investors. This article examines the effects of the merger of the Vijaya and Dena Bank with the Bank of Baroda on the wealth of the acquiring bank's shareholders using event research methods in order to identify abnormal returns around the merger announcement. The findings demonstrate that Anchor Bank or the acquiring bank displayed negligible negative returns in a longer event window. However, in the short run, a negatively significant abnormal return was noticed.

Keywords: Merger, Event Study Methodology, Stock Returns, Abnormal Returns, Event Window.

JEL Code: G34

1. Introduction

The banking business has undergone substantial changes due to deregulation, globalization, and technological advancements on a global scale. The restructuring or merging of many banks has been one of the main forces behind this transformation. Mergers and acquisitions provide major financial benefits by creating value through synergy in the form of increased productivity, economies of scale, a wider choice of products, etc.

Numerous changes have been made to the Indian banking system since independence. The Indian government nationalised fourteen banks in 1969; these banks collectively held over 80 percent of the country's bank deposits. In a second round, six more banks were nationalised.

The current rapid expansion of mergers and acquisitions calls for research to examine what motivates businesses to pursue M&A and how it impacts businesses and markets (Gregor Andrade, 2001). An acquisition announcement releases a plethora of information about the potential deal, much of which can be utilised to predict the reaction of the stock market to an M&A news. The outcomes of these announcements appear to be a good indicator of future success. Investor expectations regarding the benefits of M&A are reflected in the security returns surrounding the announcement. M&A profitability could be predicted using stock market reactions to announcements; also, short-term effects are significant because they immediately provide fresh trading possibilities. In finance and economics, event studies are a tried-and-true method for determining the anticipated effect of an event on company performance (Eugene F. Fama, 1969) (MacKinlay, 1997). The efficient market hypothesis, which holds that stock prices represent all knowledge about future earnings readily available to the public, is the foundation for event studies. Event studies attempt to determine the expected impact of this event on future firm performance by evaluating the abnormal stock returns around an event date. In general, the following three processes are used to estimate an abnormal return for a given stock (MacKinlay, 1997). First, a linear relationship (the "market model") between stock and return is estimated during some estimation window before the event date. To account for possible event repercussions, the estimation window usually closes a few days before the event and lasts for approximately 250 days. Second, the difference between the actual stock return and the return predicted by the market model for each day preceding the event date is used to compute the abnormal return. The third step involves figuring out the event's cumulative abnormal return, which is determined by adding up all of the daily abnormal returns over a certain event window—that is, the number of days that the new knowledge is most likely to have become public. The cumulative abnormal return aims to represent the anticipated effect of the event on the performance of the firm going forward. For robustness, various event window standards are frequently utilized. Therefore, the most reliable statistical data on whether or not M&A enhances shareholder wealth is derived from event studies. The underlying tenet of the approach is that stock prices are a discounted representation of a company's future stream of profits. The fundamental idea behind the strategy is that stock prices are a discounted estimate of the future earnings stream of a business. Thus, it is possible to interpret the shift in a company's equity value that follows the stock market's

response to the news of a merger and acquisition as a measurement of the (discounted) expected additional profits from the M&A (**Tomaso Duso, 2010**). In numerous types of research, event methodology is used to examine the immediate effects of an M&A (**Paul Asquith, 1983**) (**McConnell, 1986**) (**Mark Mitchell, 2004**). Despite the significant drawback of providing only the short-term effect of merger and acquisition announcement on the abnormal returns of the shareholders, it provides a number of advantages over the other empirical techniques for analyzing the competitive effects of mergers. By directly examining (expected) future profitability, event studies, as opposed to case-specific ex-post-merger assessments, readily account for both pricing and non-price competitors. Last but not least, the amount of data needed for event studies is significantly less than for proper ex-post-merger assessments, which typically call for extremely detailed and frequently confidential data.

In light of this, the current study suggests carrying out an empirical investigation that explores the short-term performance of M&A and its implications for shareholders' wealth at Bank of Baroda. More than 50% of bank mergers in India are not market-driven but rather are the result of government policy measures to rescue weak banks with significant NPAs (Non-Performing Assets), particularly in public sector banks. It is crucial to comprehend how such mergers affect the shareholders' wealth because public sector banks make up a sizable and dominating portion of the Indian banking industry and have between 45% and 49% of their ownership held by private investors.

2. Review of Literature

The short-term performance of acquired firms has been extensively studied through empirical research. Evaluating the impact on the acquiring firms' stockholders is the primary objective of this paper. Accordingly, the literature review primarily focuses on research quantifying how M&A affects acquirer shareholders' wealth.

(Warner, 1985): This research examines the characteristics of daily stock returns and how these particular attributes influence event study methodologies. Using daily data presents a few common issues for event investigations. Standard operating procedures are often well-defined, even when special daily data elements are ignored. However, seeing the autocorrelation of daily excess returns and fluctuations in their variance in response to an event may occasionally prove useful. Furthermore, compared to tests that take prospective dependence into account, tests that ignore cross-sectional reliance can be more precisely specified and have higher power.

(Corrado, 1989): An innovative nonparametric rank test for abnormal security-price performance in event studies is assessed in this paper. The rank test outperforms the parametric t-test in terms of specificity under the null hypothesis and potency under the alternative hypothesis, according to simulations conducted with daily security-return data. Unlike previous nonparametric tests, this rank test does not require symmetry in the cross-sectional excess returns distributions for correct specification.

(Cowan, 1992): This paper provides the first formal description of the power and parameters of the generalised sign test, which is based on the fraction of positive abnormal returns over an anticipated time. In simulations employing daily stock return data, the generalised sign test is sufficiently described with both exchange-listed and NASDAQ equities. A rank test performs better in ideal conditions. On the other hand, the rank test is more sensitive to variations in the length of the event window, return variance, and thin trading. The generalised sign test is an appropriate stand-in for the rank test under these circumstances.

(Rumsey, 1993): This paper examined techniques for evaluating abnormal performance in scenarios where securities are not traded daily. The empirical frequency distributions of the rank test statistic and the traditional test statistic were examined under different strategies for addressing missing stock returns. The results suggest that while previous approaches were generally well-specified for thickly and moderately traded stocks, they were misspecified for thinly traded stocks. The rank test works well for all trading frequencies, although trade-to-trade returns were the most effective method for addressing missing returns.

(Siems, 1996): According to the author's analysis, which applied event study methods to US mega-bank mergers in 1995, the merger announcement resulted in positive returns for the target/acquired bank's shareholders and negative returns for the anchor bank, both of which were material. The author asserted that reducing costs and improving efficiency outweighed the possibility of growing market dominance.

(Nusret Cakici, 1996): This study looks at the increases in shareholder value for 195 foreign companies that bought American target companies between 1983 and 1992. They find that overseas acquirers who acquire targets in the United States see positive and significant abnormal returns of around 2% over days (10, +10); while U.S. acquiring firms see no gains from their purchases of international enterprises over the same period. Japanese, British, Australian, and Dutch acquirers benefit greatly from the buying of U.S. companies, according to an analysis of abnormal returns. Bidder anomalous returns do not exhibit an industry factor and are not impacted by the value of the foreign exchange or by the relative size of the target to the bidder, as well as by the level of their overseas exposure or the intensity of the target's R&D. Further, the 1986 Tax Act has not resulted in any profits for foreign purchasers of American enterprises, which provides evidence in favour of the notion that competition among bidding firms for the same target diminishes the returns to the acquirers.

(Warner S. P., 1997): In this work, the specification of tests for long-horizon (i.e., multi-year) abnormal security returns surrounding firm-specific events was studied using samples of randomly selected NYSE/AMEX equities and simulated random event dates. Their simulation results reveal a significant misspecification in testing for abnormal security returns surrounding firm-specific events over a long time horizon (i.e., multiple years). When the test's significance level is 5%, the rejection frequencies utilizing parametric tests can occasionally be greater than 30%. Our findings hold up well against a wide range of abnormal-return models. Conclusions from long-horizon studies should be interpreted with great care. Bootstrap and nonparametric tests were likely to decrease misspecification.

(Binder, 1998): This article addresses the methodology of event studies, commencing with FFJR (1969). It addresses hypothesis testing, the application of different benchmarks for the normal rate of return, the efficacy of the methodology in different situations, and the modelling of abnormal returns as coefficients within a (multivariate) regression framework. Additionally, it concentrates on typical statistical problems and how to solve them in case studies.

(Becher, 2000): In his article "the valuation effect of bank mergers" published in 2000, the author found that bank mergers increased shareholder wealth. The target bank has a considerable positive return in both event windows, whereas the return of anchor banks is sensitive to the length of the event window, according to his analysis of the returns during the 36-day and 11-day window periods. Additionally, the combined company had a sizable positive return in the event windows of 36 and 11 days.

(Murgia, 2000): The author conducted an event study, investigating 54 merger transactions that took place in 13 European Union banking markets as well as the Swiss market between 1988 and 1999. They offered proof that, at the time of the merger, the market value had grown considerably. The target bank's returns were both significant and very positive, in contrast to Anchor's significantly positive returns in smaller event windows. The results of this study directly contradicted those of other US-based studies that showed no money was created at the time of the merger.

(Thomas, 2004): They investigated the upstream and downstream product-market implications of a large sample of horizontal mergers and acquisitions from 1980 to 1997. The corporate clients, suppliers, and rivals of the businesses launching horizontal mergers are identified in a data collection that they developed to assess announcement-related stock market revaluations and post-merger variations in operating performance. There is not much evidence that suggests greater monopolistic collaboration. The data that supports increased purchasing power and production efficiency as sources of benefits from horizontal mergers are there, nevertheless. It is also looked into how the increases in purchasing power, such as rents from monopolistic collusion or better purchasing efficiency, were achieved.

(Beng Soon Chong, 2006): investigates the impact of forced mergers on shareholder value in Malaysian banks. According to the study, a forced merger benefited the anchor bank while having a severely detrimental impact on the target bank. Overall, there was no wealth created by the forced merger. This outcome contrasts with the outcome of voluntary mergers, which typically result in increased wealth.

(Sensarma, 2007): The author claims that neither the acquirer nor the acquired bank benefit significantly from forced mergers. Furthermore, in voluntary mergers, the shareholders of the bidder bank benefit more than those of the target bank.

(Dilshad, 2013): The author evaluates the market's reaction to news of mergers and acquisitions using an event study methodology. This study focused on the impact of bank announcements and mergers on European stock prices. Their analysis covers 18 bank merger and acquisition transactions between 2001 and 2010, with a focus on the acquirers' and targets' shareholder returns. They conclude that significant cumulative abnormal returns were lost by the acquirers. At the end of the event window, the total abnormal returns were zero. Evidence of excess returns after the merger announcement was observed, in addition to the information breach that led to a few days of higher stock prices before the merger or acquisition

announcement. The target banks saw abnormal returns on the day of the merger announcement, according to the results of the cumulative abnormal returns.

(Selcuk, 2015): This study uses a dataset of 67 agreements made between 2000 and 2014 to assess the impact of M&A announcements on the stock price performance of Turkish target companies. The stock price response is evaluated over the course of 21 days after the announcement using standard event study procedures. The findings indicate that shareholders of Turkish target companies involved in merger and acquisition (M&A) negotiations enjoy positive and significant cumulative abnormal returns ranging from 5.25 percent to 8.53 percent, depending on the event window investigated. This finding is consistent with past studies showing that purchasers usually pay a premium to acquire the rights to such targets and that target companies benefit primarily from mergers and acquisitions.

(Neelam Rani, 2015): The current study evaluates the short-term effects of mergers and acquisitions on profits using a comprehensive event study technique. The main conclusion drawn from the research is that the market reacts before the announcement. As soon as information relating to the announcement is made public, investors react, and the stock price rises, providing positive abnormal returns (ARs) to investors. However following the announcement, the purchasing company's market value declines, and the positive annual rates are not maintained.

(Yadav, 2017): Using event research methods, the author empirically analysed how sensitive the Indian Stock Market was to news about mergers and acquisitions. Following testing, the study finds that there was minimal further excess return following the M&A and that the shareholders of sample banks are only partially able to realise the abnormal/excess return using public information. The research findings indicate that the Indian stock market has semi-strong efficiency due to the diffusion of historical and publicly available information in company prices, which may lead to abnormal or excessive returns for bank investors.

(Dr. Pardeep Gupta, 2018): The study's goal is to ascertain how the share prices of banks with significant gross non-performing assets (NPAs) of their advances have been impacted by the government's statement that 2.11 lakh crores would be invested to battle bank NPA. Using daily returns and the Ordinary Least Square (OLS) market model, the study uses event study techniques to ascertain the pattern of share price movement in response to the announcement. A parametric t-test was conducted to determine the relevance of the abnormal returns during the event timeframe. The results demonstrated that the news had a major positive impact on stock prices.

(Gupta, 2020): This article examines the effect of forced public-sector bank mergers on stock returns to identify abnormal returns around the merger announcement. The results show that at a wider event window, the Anchor and the target bank group both had negative returns. However, the majority of cases did not exhibit any notable abnormal returns in the daily return when examined deal by deal. Additionally, the results show that throughout the event window, other non-merged banks generated a positive anomalous return relative to the merging institutions.

A number of research indicated positive returns for the shareholders of the acquisition company for different event windows surrounding the merger announcement, while other studies revealed negative returns. The results of this study show that the announcement of the merger had a negative impact on the shareholders of the acquiring bank, which is the Bank of Baroda. Therefore, the announcement of the merger will have a short-term negative impact on the wealth of Bank of Baroda investors. However, the extended event window shows that the merger had no impact on BOB shareholders because the Bank had already begun to maintain its previous position prior to the merger announcement.

3. Objective of the Study

The objective of this research is to gauge the impact of an M&A announcement on the wealth of the shareholders of the acquiring bank i.e. Bank of Baroda.

4. Research Methodology

This article uses an event research approach to investigate the effect of the merger on the stock price of Bank of Baroda. This strategy's core tenet is that the market is efficient, which implies that the impact of an event will be immediately reflected in stock prices. The current research study's defined event is the announcement on September 17, 2018, of the Bank of Baroda's merger with Vijaya Bank and Dena Bank. To ensure the clean period data, the date is manually confirmed using the Bombay Stock Exchange (BSE) corporate announcement archives. It has been manually verified that the event window is free of

information contamination and confounding events. For the purpose of this inquiry, the event window has been set at -30, through 0, to +30 to account for potential information leaks prior to the announcement as well as stock price responses following the release. Here, 0 represents the announcement date, -30 the 30 days prior to the merger announcement date, and +30 the 30 days following the merger announcement date. The CAR is used to account for early share price reactions (resulting from the stock market anticipating an announcement soon and maybe processing information slowly after it happens). The event date may be uncertain, according to (Eugene F. Fama, 1969). Therefore, it is advisable to include Abnormal Returns, which refer to the difference between anticipated and actual returns. The event research approach assesses AR to ascertain whether or not the event in question produced excess profits for the shareholders.

5. Data Analysis And Interpretation

The event study's findings, which looked at how merger and acquisition announcements affected stock returns, are presented in Table 1. It shows the AR, associated t-statistic values and CARs for each day of the Pre and Post-Merger event window at both the 5% and 10% level of significance.

TABLE 1: PRE AND POST-MERGER EVENT WINDOW

Day	AR	CAR	AR _t -value	Day	AR	CAR	AR _t -value
-30	-0.035	-0.035	-1.879	0	0.007	-0.172	0.369
-29	-0.026	-0.061	-1.398	1	-0.117	-0.289	-6.267*
-28	-0.005	-0.066	-0.260	2	0.016	-0.273	0.837
-27	-0.011	-0.077	-0.577	3	-0.034	-0.307	-1.831**
-26	-0.011	-0.088	-0.574	4	-0.005	-0.313	-0.281
-25	0.010	-0.078	0.531	5	0.017	-0.295	0.934
-24	0.017	-0.060	0.927	6	-0.003	-0.299	-0.187
-23	-0.016	-0.077	-0.881	7	-0.032	-0.331	-1.714**
-22	0.014	-0.062	0.775	8	-0.026	-0.356	-1.384
-21	0.006	-0.057	0.295	9	0.020	-0.337	1.054
-20	-0.020	-0.076	-1.054	10	-0.024	-0.361	-1.280
-19	0.004	-0.073	0.196	11	0.045	-0.315	2.431*
-18	0.015	-0.058	0.795	12	0.086	-0.229	4.599*
-17	-0.005	-0.063	-0.291	13	-0.035	-0.264	-1.876**
-16	0.003	-0.061	0.140	14	-0.022	-0.286	-1.166
-15	-0.020	-0.081	-1.059	15	-0.036	-0.323	-1.948**
-14	-0.015	-0.096	-0.826	16	-0.010	-0.333	-0.547
-13	-0.022	-0.117	-1.152	17	-0.015	-0.347	-0.778
-12	0.010	-0.108	0.525	18	0.002	-0.345	0.116
-11	0.009	-0.099	0.471	19	0.003	-0.342	0.166
-10	0.007	-0.092	0.356	20	0.027	-0.315	1.458
-9	0.002	-0.090	0.117	21	0.030	-0.285	1.620
-8	0.001	-0.089	0.054	22	0.019	-0.265	1.034
-7	-0.002	-0.091	-0.107	23	-0.009	-0.275	-0.496
-6	-0.006	-0.097	-0.298	24	-0.008	-0.283	-0.452
-5	0.011	-0.086	0.581	25	-0.023	-0.306	-1.215
-4	0.014	-0.072	0.745	26	0.013	-0.292	0.705
-3	-0.017	-0.088	-0.891	27	0.014	-0.278	0.752
-2	-0.055	-0.143	-2.936*	28	0.027	-0.251	1.469
-1	-0.035	-0.179	-1.895**	29	-0.013	-0.264	-0.713
0	0.007	-0.172	0.369	30	-0.046	-0.310	-2.446*

Source: Author's own compilation

***5% Significance Level**

****10% Significance Level**

During the pre-merger period and the post-merger period event window, the Bank of Baroda's Cumulative Abnormal Return continues to be negative. But the fundamental difference is that the CAR was around -17.2% immediately prior to the merger announcement, and after the news it went up to -28.9%. Even the average CAR grew from -8.68% to -29.81% between the

pre-and post-merger periods. It displays the Bank of Baroda's short-term risk position. Additionally, before the announcement of the Bank's merger, the abnormal return's t-value detects one significant value at a 5% significance level and two significant values at a 10% significance level. AR_{t-value} detected 11 significant changes in the post-merger period, including 3 at a 5% significance level and 8 at a 10% significance level.

The outcomes clearly show that mergers and acquisitions had a detrimental effect on the wealth of Bank of Baroda stockholders, who were the acquiring bank's shareholders.

The post-merger announcement event window is shown in Table 2 below which ranges from +31 to +60 and +61 to +90 days. At the 5% and 10% levels of significance, it displays the AR, associated t-values, and Cumulative Abnormal Return.

TABLE 2: POST-MERGER EVENT WINDOW

Day	AR	CAR	AR _{t-value}	Day	AR	CAR	AR _{t-value}
31	-0.004	-0.314	-0.199	61	-0.016	-0.321	-0.880
32	0.019	-0.294	1.034	62	-0.002	-0.323	-0.125
33	0.002	-0.292	0.120	63	-0.003	-0.326	-0.147
34	-0.009	-0.301	-0.495	64	0.012	-0.314	0.618
35	-0.005	-0.307	-0.274	65	0.014	-0.300	0.746
36	0.016	-0.291	0.844	66	0.012	-0.288	0.642
37	-0.023	-0.314	-1.245	67	-0.013	-0.302	-0.716
38	0.016	-0.298	0.832	68	-0.003	-0.305	-0.185
39	-0.001	-0.299	-0.036	69	-0.004	-0.309	-0.198
40	0.024	-0.275	1.285	70	0.025	-0.283	1.365
41	0.005	-0.270	0.262	71	-0.006	-0.289	-0.298
42	-0.024	-0.295	-1.303	72	0.023	-0.265	1.257
43	0.008	-0.286	0.439	73	-0.011	-0.276	-0.571
44	0.002	-0.284	0.108	74	0.000	-0.276	0.002
45	-0.007	-0.291	-0.379	75	-0.001	-0.277	-0.053
46	-0.010	-0.302	-0.551	76	0.010	-0.267	0.523
47	-0.004	-0.306	-0.209	77	0.007	-0.260	0.365
48	0.000	-0.306	-0.013	78	-0.016	-0.276	-0.834
49	0.013	-0.293	0.699	79	0.014	-0.262	0.754
50	-0.009	-0.302	-0.473	80	-0.013	-0.275	-0.703
51	0.004	-0.298	0.188	81	-0.010	-0.285	-0.558
52	0.025	-0.273	1.323	82	-0.015	-0.300	-0.790
53	0.002	-0.272	0.095	83	0.004	-0.297	0.188
54	0.022	-0.250	1.169	84	0.003	-0.294	0.137
55	0.008	-0.241	0.451	85	-0.017	-0.311	-0.904
56	0.005	-0.237	0.254	86	-0.006	-0.317	-0.311
57	0.004	-0.233	0.191	87	0.011	-0.305	0.605
58	-0.023	-0.256	-1.245	88	-0.015	-0.320	-0.793
59	-0.028	-0.285	-1.518	89	0.005	-0.315	0.276
60	-0.019	-0.304	-1.040	90	0.042	-0.273	2.248*

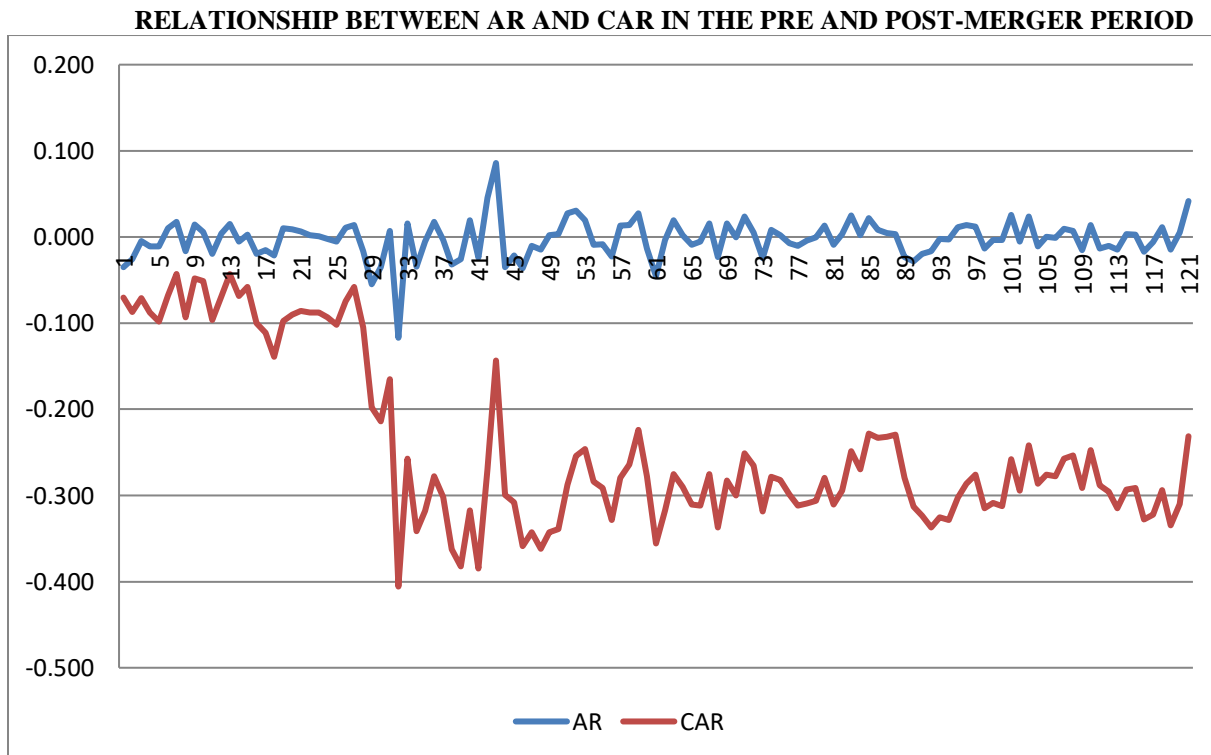
Source: Author's own compilation

***5% level of significance**

****10% level of significance**

The average CAR decreased from -28.56% to -29.37%, although the acquiring bank, Bank of Baroda, continued to have negative cumulative abnormal returns over the post-merger period. At the 5% level of significance, only one significant value is present on the (t+90) day after the merger of the three banks. If the event window is extended further, no substantial value will be seen, indicating that the merger decision will not affect the shareholders' wealth. The aforementioned table suggests that the banks will be able to keep their positions as they were prior to the merger of the Vijaya and Dena Bank with the Bank of Baroda in the longer event window i.e. 90 days. Therefore, it is possible that a merger will not have a material impact on shareholders' wealth during the post event window. However, its effects were immediately apparent.

The relationship between Abnormal Return and Cumulative Abnormal Return in the pre and post-merger period could be assessed from the following graph:



Source: Author's own compilation

Figure 1

From the above graph, it can be deduced that the CAR which is taken into account to assess early share price reactions shows that there is an instant drop in the share prices of the Bank of Baroda as soon as the announcement became public. Further, the acquiring bank's cumulative abnormal return is negative in the shorter event window and becomes constant in the longer event window, which is 90 days, both of which are unfavourable to the bank's shareholders' ability to make a profit. Additionally, the AR which is employed to evaluate the profits of the shareholders exhibits that the shareholders of the Bank did not gain much profits from the merger of the Vijaya and Dena Bank with that of Bank of Baroda. Therefore, it can be pronounced that the three way consolidation of the Banks has negatively affected the acquirer bank i.e. Bank of Baroda in the short run.

6. Conclusion

The study was conducted to examine the wealth impact of the amalgamation of Vijaya Bank and Dena Bank with the Bank of Baroda, which was announced on September 17, 2018, and came into effect on April 1, 2019. To determine whether any abnormal returns were received by stakeholders throughout the merger and acquisition period, an event study was done. The influence of a certain event on the stock price is indicated by the abnormal return of the stock price, which varies depending on the acquisition and the bank's history, financial situation, and market climate. According to the study, shareholders of acquirer banks (Bank of Baroda) involved in M&A suffer from high negative ARs on the day of announcements as well as CARs during the event windows around the announcements. The findings showed that the anchor bank (BOB) shareholder's wealth significantly decreased in the event window (-30 to +30). Since the Vijaya Bank and Dena Bank were weak banks with high non-performing assets (NPAs) of 4% and 12%, respectively, and were merged with the Bank of Baroda, a stronger bank, this means that the merger announcement has a negative impact on the BOB shareholders. However, the longer event window shows that the BOB shareholders had little impact from the merger as the Bank began to hold its prior position preceding the merger announcement. This study has two significant flaws that could be fixed in future studies. First, the study employed the Event Study Methodology, which isolates the event's immediate aftermath. As a result, outcomes can vary. Second, the current study only makes use of secondary data that was collected from multiple sources.

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