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# Do Mergers & Acquisitions Add Value to the Shareholders: Evidence from Merger of State Bank of India and Its Five Associates

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**Abstract**

The merger of State Bank of India and its associates in 2017 was considered as a mega merger in the Indian banking industry. The Government of India announced the merger with the objectives of increase operational effectiveness of the public sector giant and changing the bank with a significant national presence and global reach. The synergy value of merger can be seen either through higher revenues, lowering of expenses or lowering of overall cost of capital thereby making the business efficient and creating overall shareholder value. The primary aim of this study is to analyse the short-term and long-term wealth creation after merger to the shareholders of the bidder bank. The study employed event analysis and the results revealed there are no significant changes in the abnormal returns of the shareholders due to merger in both the announcement period and in the long -run.

**Keywords:** Merger & Acquisition, SBI Merger, Shareholder Value. Event analysis, BHAR Model

**M**ergers and acquisitions have evolved as the most striking illustration of vision and strategy in the corporate world. A single deal can change the strategic course of organisations permanently. Capital market reactions may create change in the direction of company, enhance the careers of managers, and add value to shareholders(Puranam et al., 2000).

SBI being the largest and oldest bank in India, had undertaken a number of acquisitions from time to time. Its origins can be traced back to British India, when Bank of Bengal, Bank of Madras and Bank of Bombay merged to form Imperial Bank of India in 1921, which became the State Bank of India in 1955. In 2008, State Bank of Saurashtra was merged with SBI, and in 2010, State Bank of Indore was merged with SBI. On 1 st April 2017, banking behemoth SBI merged its remaining 5 associates banks namely, State Bank of Travancore, State Bank of Patiala, State Bank of Bikaner and Jaipur, State Bank of Hyderabad and State Bank of Mysore along with Bharatiya Mahila Bank. It is considered as the ever-largest merger in Indian banking sector. This merger is considered as the mile stone of Indian banking history. The merger aimed at making Bigger, better and stronger new SBI and to reach at the league of global banks.

Mergers and acquisitions, in which two businesses are united to achieve certain strategic and business goals, are significant corporate transactions that affect a wide range of stakeholders, including employees, managers, rivals, and the economy in addition to the target company. Huge repercussions for shareholders, lenders, and the aforementioned constituents if they are successful or unsuccessful (Sudarsanam, 2004). As a stake holder, the shareholders of the merged banks also expect certain advantages in the form of wealth creation. Wealth creation means the value of the company as perceived by the shareholders or investors.

This study analyse the effect of SBI merger with its associates on the shareholders of bidder bank, in short-term and long -term. Typically, shareholder wealth gains are measured by abnormal returns, i.e., returns exceeding a benchmark return. To determine whether M&A significantly impacts short- and long-term shareholder returns, researcher employ event study methodology developed by Dodd & Warner (1983) and Brown &Warner (1985) and extended by Barber & Lyon (1997) . It comprises two steps: examining the short-term effects of the announcement on shareholders' wealth by using CAR (Cumulative Abnormal Return), and examining the long-term stock performance of the newly formed enterprise by using BHAR (Buy and Hold Abnormal Return)(Kiesel et al., 2017a).

## 1.Background of the study and Review of Literature

In the banking industry, M&A activity has seen a persistent growth over the past years. Numerous studies were made by researchers in this field. (Kolaric&Schiereck, 2013) analysed the short- term and long- term shareholders wealth effect of domestic and cross-border acquisition announcements of banks in Latin American. Results indicated that the mergers were successful events for shareholders of acquiring institutions in both short and long- term. The study found

M& As seems to be an appropriate tool for wealth creation. Das &Mariappan (2021) examined the effects of the announcement of merger on shareholders wealth of the SBI and select associate banks.The study found that anchor bank's shareholders haven't gained due to merger but there is overall gain for the target bank's shareholders. Hassan &Giouvris (2020) investigated shareholders' value adjustment window in reaction with financial institutions merger announcements in the immediate event window and extended event window.The results indicate that FIs mergers destroy shareholders value for acquiring firms that are seeking to penetrate new markets. Shareholders' value creation enabled through market development and product development strategies in short and long run. Diversification strategy didn't influence the shareholders' value. Study stated that local bank to bank acquisitions create shareholders' value and improve liquidity and economic value in short period. Cross border bank to bank mergers will create shareholders' value in long run whereas it associated with high cost and risky.Kumar. P &Kuncolienkar (2020) investigated the impact of M& A deals on long term shareholders wealth creation using BHAR.The study found that the announcement of M&A deals didn't create significant improvement in BHAR for shareholder of acquirer banks.Kiesel et al. (2017)examined the post- merger performance effect on short- and long- term abnormal shareholders return in logistic service industry. A sample of 826 merger announcements taken place between 1996 and 2015. The results revealed that overall transactions show significant positive abnormal returns, acquiring companies' post- merger performance differed according to the logistic services offered. In the short- run trucking, railway, 3PL and air cargo companies show significant positive abnormal return while, sea fright revealed marginal effect and CEP companies do not show any significant return. In long- run, railway& 3PL companies show a significant abnormal return, whereas trucking, sea fright and air cargo do not show significant returns and CEP companies shows significant losses.

## 2.Objectives and methodology

The main aim of this paper is to explore the announcement of merger create any impact on share price and shareholders wealth of State Bank of India. Since the merger and acquisition usually focus on long term impact, the study also explores the long run effect of merger on wealth creation of shareholders.

## 3. Short-run Effect-Methodology

Event study methodology is one of the most common statistical research methods in the field of finance (Bowman, 1983; Brown & Warner, 1980, 1985; David, 2010; Henderson, 1990; Konchitchki& O'Leary, 2011; Kothari & Warner, 2007; MacKinlay, 1997; Mcwilliams& Siegel, 1997; McWilliams & McWilliams, 2000; Peterson, 1989; Serra, 2004; Wells, 2004; Weston et al., 2014). It is used to evaluate the security prices surrounding an event to see how the market reacts to it. Event study approach has been used to analyse the secondary data (stock prices of the companies who announced mergers and acquisitions). This enables a researcher to determine whether investors received any abnormal returns as a result of these events. Abnormal return is the distinction between the actual return and expected return on a given day, as determined by a return model, (chosen by the researcher) (Rani et al., 2016). "The short-term analysis is based on the assumption that capital markets incorporate new information immediately after the first announcement of a transaction"(Fama, 1970) .

## 4. Mechanism of event study

Finance theory suggests that capital markets reflect all available information about firms in the firms' stock prices. Given this basic premise, one can study how a particular event changes a firm's prospects by quantifying the impact of the event on the firm's stock. Finance scholars have developed the event study methodology to perform this type of analysis

### 4.1 Event definition and date of announcement

An event is a particular action that the researcher would like to study. It is expected that the event will convey some information that may influence stock prices(Rani et al., 2016).For this study, merger of SBI and its associates defined as event.

The first step in the event study methodology is to define the event as the date on which the acquisition is first publicly announced. In general, day 0 refers to the day the announcement is first published in a newspaper. For this purpose of the study, the announcement day has been defined as the day the announcement through Government Gazette notification on 22nd February 2017.

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#### 4.1.1Estimation period

The estimation window is the time period in which the expected return is estimated. The estimation period is the period prior to the event and the event window. The expected return is calculated using a time period other than event window. For the present study estimation window is from -282 days to the day -31 (from 31 to 282days prior to the event window), comprising of 252 trading days. It ensures estimates of the normal return model are not affected by event-related returns.

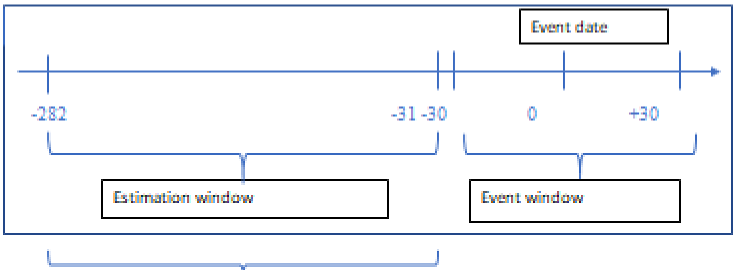


Figure 1

Figure depicts the event window and estimation window. There must not be an overlap between the estimation window and the event window.

#### 4.1.2 Event window period

The event window is the period in which an event occurs where the security prices of the particular firms are examined. The event window for this study is chosen as (-30, +30).The event, say, the merger announcement, is represented by 0 in the window. Here, the time period prior to announcement date is represented by -30 and +30 represents 30 days' time period after the announcement date. In order to conduct an in-depth analysis, the event window has been further broken down.The abnormal return over varying windows, namely, (-5, 0), (-5, +5), (0, +5), (-10, 0), (-10, +10), (0, +10), (-30, 0), (-30, +30), and (0, +30) have been observed.

#### 4.1.3 Anticipation window

Event methodology in the study allows to measure the responsiveness of stock market returns to the event. Furthermore, this methodology allows to test whether the stock market has anticipated the effect of the event that would have on the corporate value. Therefore, it allows to test the market efficiency and more importantly, it identifies insider trading before the announcement event. These effects are captured in the anticipation window. Anticipation window can be described as the range of trading days before the event date to check for abnormal returns in response to the event. Generally, 5 to 10 trading days are for studying corporate announcements. However, for this study, the researcher identified an anticipation window of 5 days, 15 days and 30 days.

#### 4.1.3 Adjustment window

Adjustment window can be explained as those trading days right after the event date that allows to test whether there have been any significant price changes after the event. If the adjustment window shows an abnormal return, the market is inefficient since information are not incorporated and has either under reacted to the news release if the direction of adjustment is the same as the direction of the event effect or overreacted if the directions of those effects are reversed. As in anticipation window, the researcher has selected the adjustment window as (-5, +5), (-15, +15), and (-30, +30).

### 5 Long-run Effect- Methodology

For the long-term analysis, the study use the BHAR (Buy and Hold Abnormal Return) method to measure the return difference between the acquiring firms compared to benchmark. According to(Lyon et al., 1999), the BHAR approach is robust, whereas the calendar time method is miss-specified in non-random samples. The long- term value creation was assessed using the BHAR methodology in analogy to (Barber & Lyon, 1997)and (Mitchell & Stafford, 2000). This approach allows for the evaluation of abnormal returns over a longer time horizon and overcomes the limitations of using narrow windows around the announcement dates, which only measure expected cash flows. In essence, BHAR is the excess return an investor will experience over the industry average if he buys the shares of the acquiring firm after the merger. According to (Barber & Lyon, 1997)and (Mitchell & Stafford, 2000), the BHAR is an

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appropriate estimator because it captures the risk preferences and investment goals of investors. In their view, this was an important aspect of the model since investors' views on both the acquirer and the benchmark companies were directly influenced by such goals and preferences. To assess whether merger create long-term wealth, would focus on actual post-merger performance rather than "announcement effect”. So here construct the event windows for analysis beginning from the day of the effective date of merger rather than announcement date. Four different event windows have been defined for examining the long-term wealth effect of merger with length of 3 months, 6 months, 12 months and 24 months holding period during post- merger period. For estimating 3 months BHAR, 1 year data were used, for 6 months 2 years data, for 12 months 3 years data and for 24 months 5 years data respectively.

## 6. Analysis and Discussions

Based on the methodology provided in the previous section, a detailed analysis has been done to know the effect of merger on shareholders wealth in the long run and short run.

### 6.1 Short-run stock market analysis-Estimation model and definition of Abnormal return

The estimation model is the model used to estimate the expected return. Various models are existing in event studies, there are three major models, constant return, market adjusted and CAPM (market model or single index model). They are different in terms of methods used to calculate abnormal return to detect whether some event have a material impact on corporate value

Abnormal return is determined as;

$AR_{it} = R_{it} – [R_{it}|X_t]$ (1)

Where $AR_{it}$ is abnormal return, $R_{it}$is actual return and $\mathbb{E}\ [R_{it}]$ is normal return or expected return. In this study researcher selected constant mean return model and market model developed by Dodd and Warner (1983) to determine abnormal returns.

In constant return model the assumption is that the expected return for stock is just equal to average daily return during the estimation window and then calculate the differences between the realized returns and the expected returns and that would be the abnormal return.

constant-mean-return model can be calculated as;

$AR_{i,t} = R_{i.t} - \widehat{\mu_i}$ (2)

where $\widehat{\mu_i}$ is the estimate of the average return.

Market model to estimate the abnormal return;

$AR_{i,t} = R_{i,t} - \left(\widehat{\alpha}_i + \widehat{\beta}_i R_{m,t}\right)$ (3)

where $R_{i,t}$ is the return of company ion day t, $R_{m,t}$is the return of the benchmark index on day t, αi and βi are the regression coefficients of company i.National Stock Exchange (NSE) indices is used as benchmark index.

The CAR (Cumulative Abnormal Return) during for stock iduring the event window is calculated as;

$CAR_{i,[\tau1,\tau2]} = \sum_{t=\tau1}^{\tau2}\left[R_{i,t} - \left(\widehat{\alpha}_i + \widehat{\beta}_i R_{m,t}\right)\right]$ (4)

Hypothesis – Shot run analysis

**H1: Merger of SBI and its associates provides significant short-term abnormal returns for the SBI shareholders.**

**Table 1.**
**Abnormal returns of shareholders in response to the event SBI merger announcement.**

| | **SBI** | | | | | |
|---|---|---|---|---|---|---|
| | Constant Mean Return Model | | | Market Model | | |
| | CAAR | t- test | p value | CAAR | t- test | p value |
| Anticipation (-5) [-5, 0] | .37% | .0625 | .9502 | -1.94% | -.4220 | .6734 |
| Event (0) [-5, +5] | -1.80% | -.2206 | .8255 | -3.49% | -.5560 | .5787 |
| Adjustment (5) [0, +5] | -1.65% | -.2763 | .7825 | -1.35% | -.2934 | .7694 |
| Anticipation (-15) [-15,0] | 3.52% | .3548 | .7230 | -2.86% | -.3737 | .7089 |

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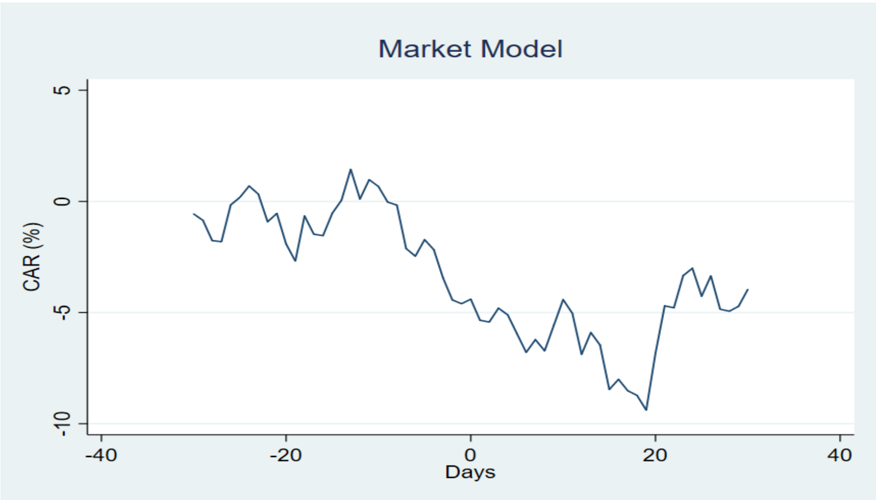
|---|---|---|---|---|---|---|
| Event (0) [-15, +15] | 3.26% | .2300 | .8183 | -6.92% | -.6321 | .5279 |
| Adjustment (15) [0, +15] | .27% | .0269 | .9785 | -3.86% | -.5048 | .6141 |
| Anticipation (-30) [-30, 0] | 7.89% | .5565 | .5783 | -4.40% | -.4014 | .6885 |
| Event (0) [-30, +30] | 13.12% | .6269 | .5313 | -3.96% | -.2449 | .8068 |
| Adjustment (30) [0, +30] | 5.75% | .4053 | .6856 | .65% | .0591 | .9530 |

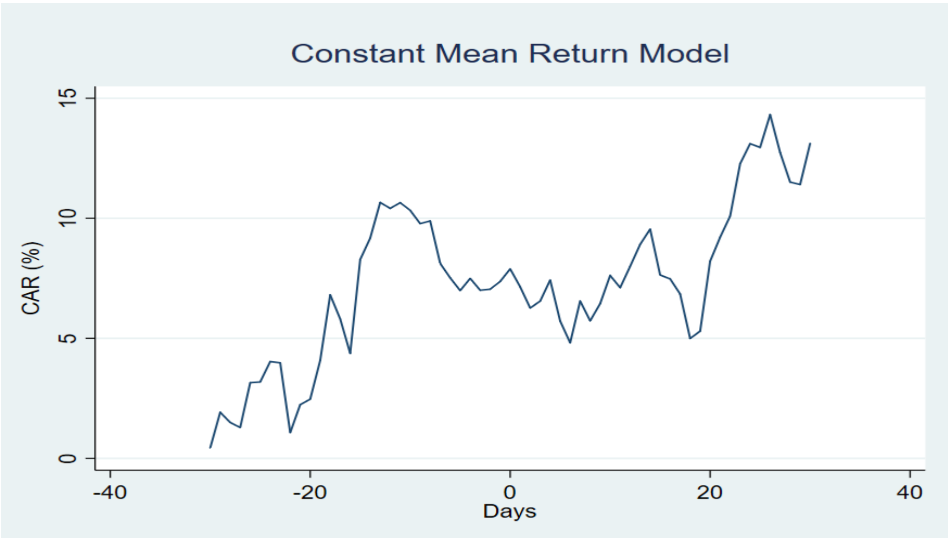
Source: Computed by STATA, data collected from https://www.nseindia.com/

Table No.1 shows the CAAR, p values and t value for all anticipation, adjustment and event itself. The analysis reveals in all event windows there is no significant change in Cumulative Abnormal Return in both constant mean return model and market model. Hence the alternative hypothesis is failed to accept. SBI shareholders could not earn any abnormal return due to merger in short run.




Source: Generated by STATA, data collected from https://www.nseindia.com/

**Figure 2 CAR of SBI in response to the event 'Merger of SBI and its Associates**




Source: Generated by STATA, data collected from https://www.nseindia.com/

**Figure.3 CAR of SBI in response to the event 'Merger of SBI and its Associates**

**6.2 Long- term stock market analysis**

The short- term analysis signifies the merger announcement didn't provide any significant abnormal returns to shareholders. However, it takes long time to realize the effect, the researcher extent the scope of this study by a long-term analysis. In the course of this, we measure the stock performance of the combined company 3, 6, 12, and 24months following the M&A using the BHAR approach.

BHAR can be calculated by the following standard formula;

$BHAR_{i(t1,t2)} = \prod_{t1}^{t2} (1+R_{i,t}) - \prod (1+R_{i,t})$ (4)

where Ri,t is the return of company i on day t and Rm,t is the return of the benchmark index on day t. Here benchmark index is NSE indices.

Hypothesis - long- term effect

**H 2: Merger and acquisition of SBI and its associates will provide significant long-term abnormal returns for the SBI shareholders.**

The analysis is done by using Excel software. The results are given below;

**Table No. 2.**
**Long-run effect of SBI merger**

| | **Buy and hold abnormal return** | **t- value** | **S.D.** | **p value** |
|---|---|---|---|---|
| BHAR 3 | -23.15% | -1.0870 | 0.2130 | 0.2785 |
| BHAR 6 | -15.49% | -0.5551 | 0.2790 | 0.5792 |
| BHAR 12 | -4.51% | -0.1151 | 0.3922 | 0.9084 |
| BHAR 24 | 23.25% | 0.4423 | 0.5256 | 0.6584 |

Source: https://www.nseindia.com/

The table No.2 shows the results of BHAR analysis. From the table it is evident that all the p values are higher than 0.05 hence there is no significant BHAR for the shareholders after the merger. Hence the alternative hypothesis is failed to accept. There is no significant effect on shareholders after the merger.

**7. Conclusion**

The study examined the effect of merger of SBI and its associates on the shareholders of bidder bank. The analysis checks whether creates any positive or negative abnormal returns to shareholders due to the merger in short term and long term. It is observed that no changes are created by the announcement of SBI merger on share price and shareholders wealth. Event window in different time period clearly validate it. The analysis to find the long term effect of merger on shareholders since the date of announcement, the result of BHAR analysis shows that merger doesn't lead any wealth creation to the shareholders during long run also.

**8. Limitation of the Study and scope for further Research:**

Despite this paper has done analysis to know the long term impact of merger of SBI on share holder's wealth creation, only 6 years data could be taken for analysis. Analyzing the data for the period of 15 or 20 years may give comprehensive picture regarding the long term impact. The impact of merger is not only confined to shareholders wealth but also affect the financial performance and operational efficiency of the bidder bank which are yet to be explored by the researchers.

**9. Conflict of Interest:**

The authors certify that they have no affiliation with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or material discussed in this manuscript.

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