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Impact of Mergers and Acquisitions on the Performance of the Indian Bank's Share Price : An Event Study Approach

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ABSTRACT

This paper presents an investigation into the relationship between the announcement of mergers and acquisition and the existence of positive abnormal returns for shares of these firms. The aim of this project is to examine the impact of Merger and Acquisition on the stock prices of Indian Banks by using the Event Study Methodology; it is one of the most frequently used tools in financial research. The objective of Event Study is to assess whether there are any abnormal or excess returns earned by security holders accompanying specific events (*e.g.* merger announcements, earnings announcements, stock splits), where an abnormal return is the difference between observed return and appropriate return by stock market during a particularly defined event window.

In order to analyse the effect of announcement of bank's Merger and Acquisition on stock price, we have considered four cases of Mergers in banking sector. In this study, we tested our results by analysing the daily return of the event windows and compare with average period return of security. By accepting the abnormal return as a benefit of the acquisition and investors of Acquirer Company received profit in term of share value appraisal. We observed that acquirer got benefit by the acquisition deals and it reflect through the excess return over the normal return of bank's share prices.

In last 10 to 15 years banking industry passed through different scenario and to compete in this scenario some banks acquired other banks to improve their own market cap and financial conditions with expanding market by acquisition. The purpose of this study is to figure out the effect of the acquisition on the share capitalization value of the Acquirer Company and abnormal return due to the acquisition. This paper is based upon the secondary data analysis of the acquirer company share prices movements in respect of the market index price movements.

Keywords: Merger and Acquisition, Event Study, Banking industry, Returns.

1. INTRODUCTION

1.1. Merger and Acquisition

1.1.1. Merger

Merger is defined as combination of two or more companies into a single company where one survives and the others lose their corporate existence. The survivor acquires all the assets as well as liabilities of the merged company or companies. Generally, the surviving company is the buyer, which retains its identity, and the extinguished company is the seller. Merger is also defined as amalgamation. Merger is the fusion of two or more existing companies. All assets, liabilities and the stock of one company stand transferred to Transferee Company in consideration of payment in the form of:

1. Equity shares in the transferee company,
2. Debentures in the transferee company,
3. Cash, or
4. A mix of the above modes.

1.1.2. Acquisition

Acquisition in general sense is acquiring the ownership in the property. In the context of business combinations, an acquisition is the purchase by one company of a controlling interest in the share capital of another existing company.

1.1.3. Methods of Acquisition

Acquisition in general sense is acquiring the ownership in the property. In the context of business combinations, an acquisition is the purchase by one company of a controlling interest in the share capital of another existing company.

An acquisition may be affected by:

1. Agreement with the persons holding majority interest in the company management like members of the board or major shareholders commanding majority of voting power;
2. Purchase of shares in open market;
3. To make takeover offer to the general body of shareholders;
4. Purchase of new shares by private treaty;

1.2. Motive Behind Merger and Acquisition

In the globalized economy, M&A acts as an important tool for the growth and expansion of the economy. The main motive behind the M&A is to create synergy, that is one plus one is more than two and this rationale beguiles the companies for merger at the tough times. M&A help the companies in getting the benefits of greater market share and cost efficiency. Companies are confronted with the facts that the only big players can survive as there is a cut throat competition in the market and the success of the merger depends on how well the two companies integrate themselves in carrying out day to day operations.

Growth is always the priority of all companies and confers serious concern to expand the business activities. Companies go for M&A for achieving higher profit and expanding market share. M&A is the need of business enterprises for achieving the economies of scale, growth, diversification, synergy, financial planning, Globalization of economy, and monopolistic approach also creates interest amongst companies for M&A) in order to increase the market power. M&A is not a single day process, it takes time and decisions are to be taken after examining all the aspects.

1.3. The Indian Banking Sector

The Banking system of India was started in 1770 and the first Bank was the Indian Bank known as the Bank of Hindustan. Later on some more banks like the Bank of Bombay-1840, the Bank of Madras-1843 and the Bank of Calcutta-1840 were established under the charter of British East India Company. These Banks were merged in 1921 and took the form of a new bank known as the Imperial Bank of India. For the development of banking facilities in the rural areas the Imperial Bank of India partially nationalized on 1 July 1955, and named as the State Bank of India along with its 8 associate banks (at present 7). Later on, the State Bank of Bikaner and the State Bank of Jaipur merged and formed the State Bank of Bikaner and Jaipur.

The Indian banking sector can be divided into two eras, the pre liberalization era and the post liberalization era. In pre liberalization era government of India nationalized 14 Banks on 19 July 1969 and later on 6 more commercial Banks were nationalized on 15 April 1980. In the year 1993 government merged The New Bank of India and The Punjab National Bank and this was the only merger between nationalized Banks, after that the numbers of nationalized Banks reduced from 20 to 19. In post liberalization regime, government had initiated the policy of liberalization and licenses were issued to the private banks which lead to the growth of Indian Banking sector.

On 13th August 2010, the process of M&A in the Indian banking sector passes through the Bank of Rajasthan and the ICICI Bank. Moreover, the HDFC Bank acquired the Centurion Bank of Punjab on 23 May 2008. And Recently Kotak Mahindra Bank acquired INGVyasa Bank on 01 April 2015.The Reserve Bank of India sanctions the scheme of mergers of the ICICI Bank and the Bank of Rajasthan. After the merger the ICICI Bank replaced many banks to occupy the second position after the State Bank of India (SBI) in terms of assets in the Indian Banking Sector. In the last ten years, the ICICI Bank, the HDFC bank in the private sector, the Bank of Baroda (BOB) and the Oriental Bank of Commerce (OBC) in the public sector involved themselves as a bidder Banks in the Merger and Acquisitions (M&As) in the Indian Banking Sector. Table 1 gives a detailed account of all Merger and Acquisitions took place in the Indian banking sector.

Table 1
List of Merger and Acquisitions (M&A) in Indian Banking Industry

Name of the acquiring bank	*Bank targeted*	*Acquisition Year*
Kotak Mahindra Bank	INGVyasa Bank	2014
ICICI Bank	Bank of Rajasthan Ltd.25:118	2010
HDFC Bank	Centurion Bank of Punjab	2008
Indian Overseas Bank	Bharat Overseas Bank	2007

Name of the acquiring bank	*Bank targeted*	*Acquisition Year*
Federal Bank	Ganesh Bank of Kurandwad	2006
Industrial Development Bank of India	United Western Bank	2006
Centurion Bank of Punjab	Lord Krishna Bank	2006
ICICI Bank	Sangli Bank	2006
Bank of Punjab	Centurion Bank	2005
Industrial Development Bank of India	IDBI Bank Ltd.	2004
Bank of Baroda	South Gujarat Local Area Bank	2004
Oriental Bank of Commerce	Global Trust Bank	2004
Punjab National Bank	Nedungadi Bank Ltd.	2003
ICICI Bank	ICICI Ltd.	2002
Bank of Baroda	Banaras State Bank Ltd.	2002
ICICI Bank	Bank of Madura	2001
HDFC Bank Ltd.	Times Bank Ltd.	2000
Bank of Baroda	Bareilly Co-op Ltd.	1999
Union Bank of India	Sikkim Bank Ltd.	1999
Oriental Bank of Commerce	Bari Doab Bank Ltd.	1997
Oriental Bank of Commerce	Punjab Co-op Ltd.	1996
State Bank of India	Kashinath State Bank	1995
Bank of India	Bank of Karad Ltd.	1994
Punjab National Bank	New Bank of India	1993

Source: www.academia.edu/Merger_and_Acquisition in Indian Banking Sector

2. LITERATURE REVIEW

Many studies have been made on testing the efficiency of Stock Market in relation to event announcement like dividend, bonus, right issue, option listing, stock split, annual earning, Merger and Acquisitions etc. Reviews of significant studies by the Researchers are as follows-

(Dilshad, Mehroz Nida, 2012) examines the efficiency of market with respect to announcements of mergers and acquisitions using an event study methodology. Specifically, this study analyzed the effects of banks mergers and their announcements on the prices of stocks, in Europe. They study 18 deals that involve banks in Merger and Acquisition from year 2001 to 2010 in order to investigate the returns of shareholder of the targets and acquirers. They conclude that significant cumulative abnormal returns were short for the acquirers. At the end of the event window, the cumulative abnormal returns were 0. Evidence of excess returns after the merger announcement was also observed along with the leakage of information that resulted in the rise of stock prices few days before the announcement of merger or acquisition. At the same time, the results of cumulative abnormal returns showed that target banks earned abnormal returns on the merger announcement day.

(Ananthi and Dinesh, 2012) examined the efficiency of Indian Stock Market with respect to the Information Content of Profit Booking Announcement. The Impact of Profit Booking Announcement by LIC housing finance Ltd. By employing Event study using rate of return, beta, excess return and average excess return, pivot point and t-statistics for testing market efficiency. The study concluded that the announcement of corporate events like Profit Booking made by the LIC housing finance Ltd. is having a slight impact on the stock market during the study period.

(Kruger, Nthoesane and Mlonzi and, 2011) examine that whether there are any significant abnormal returns around the public announcement of earnings and to establish whether the efficient capital market hypothesis applies to the small ALtX market. The study focused on all the companies listed on the JSE-ALtX that announced annual earnings between 1 January and 31 December 2009. The method used for calculating the expected returns was the Capital Asset Pricing Model (CAPM). The study concluded that during a recessionary period, shareholders' wealth is eroded in the small ALtX market; however, the weak form of market efficiency provides an opportunity for entrepreneurs and investors to exploit the market for profits when the market is performing well.

(Liargovas and Repousis , 2011) examine the impact of Greek mergers and acquisitions on the performance of the Greek Banking Sector during the period 1996-2009. With the use of event study methodology, they reject the "semi-strong form" of Efficient Market Hypothesis (EMH) of the Athens Stock Exchange. They find that ten days prior to the announcement of a merger and acquisition, shareholders receive considerable and significant positive cumulative average abnormal returns (CAARs). Also the results show that significant positive CAARs are gained upon the announcement of horizontal and diversifying bank deals. The overall results indicate that bank mergers and acquisitions have no impact and do not create wealth. They also examine operating performance of the Greek Banking Sector by estimating twenty financial ratios. Findings show that operating performance does not improve, following mergers and acquisitions.

(Aduda and Caroline, 2010) examine the reaction of stock price to the information content of the stock split at the Nairobi Stock Exchange. This was achieved by studying nine companies that had undergone stock splits in the period 2002 to 2008. The study made use of the trading activity ratio to determine whether stock splits elicit any reaction in the Kenyan market. They use the event window of 101 days. Abnormal returns were calculated by use of the market model and *t*-tests are conducted to test the significance. The study found out that the Kenyan market reacts positively to stock splits, as shown by a general increase in volumes of shares traded around the stock split. There is also an increase in trading activity after the stock split as compared to that before the stock split.

(Raja and Sudhahar, 2010) examine the efficiency of the Indian Stock Market with respect to Information Content of Bonus issue announcement released by the IT Companies over the period 2000 to 2007. The statistical tools used under this study in order to test the informational efficiency of the Indian Stock Market are Average Security Returns Variability, Average Abnormal Returns, Cumulative Abnormal Returns and T-test. The study concludes that the Indian stock markets for the IT Companies are efficient but not perfectly efficient to the bonus issue announcement. This enables the investors to make abnormal profit during announcement period. The author himself highlights some of the limitations of the study. The study is confined to only one event and is restricted to only IT Companies. Moreover, it can also be extended to two or more events by taking different industries.

(Iqbal and Mallikarjunappa, 2007) examined the market reaction to quarterly earnings announcement of 149 companies listed on the Bombay Stock Exchange for September 2001 by employing both parametric and non-parametric tests. It is observed that during event window, runs test are not significant at 5% level, which signifies that abnormal returns occur randomly. On the other hand, *t*-test rejects the existence of abnormal returns on daily basis, which provides an opportunity to beat the market and earn abnormal returns. The study concludes that Indian stock market is not efficient in semi-strong form.

3. RESEARCH METHODOLOGY

3.1. Event Study

An **Event study** is a statistical method to assess the impact of an event on the value of a firm. For example, the announcement of a merger between two business entities can be analysed to see whether investors believe the merger will produce or demolish value. The basic idea is to find the abnormal return attributable to the event being studied by adjusting for the return that stem from the price variation of the market as a whole.

As the event methodology can be used to find the effects of any type of event on the trend and scale of stock price changes, it is very flexible. Event studies are thus common to various research areas, such as accounting and finance, management, economics, marketing, information technology, law, and political science.

One aspect often times used to structure the overall body of event studies is the breadth of the studied event types. On the one hand, there is research investigating the stock market responses to economy-wide events (*i.e.*, market shocks, such as regulatory changes, or catastrophic events). On the other hand, event studies are used to investigate the stock market responses to corporate events, such as mergers and acquisitions, earnings announcements, debt or equity issues, corporate reorganizations, investment decisions and corporate social responsibility.

3.2. Calculation Procedure

Depending on the model chosen for the 'normal return', conducting event studies requires the researcher to implement a distinct sequence of steps. For the most common model, the 'market model', the steps are as follows: (1) Retrieve and match time series of financial returns of the firm's stock and its reference index. (2) For each event, identify the sequences of firm and market returns that need to be included in the estimation window. (3) Compare start day price with average price of the Window period and with this parameters, predict the 'normal returns' for stock for whole window period. (4) Deducting these 'normal returns' from the 'Predict returns (by using market model and event model) ' gives you the 'abnormal returns'. (5) Now compare the return of the different period window based on the different window's actual return & intercept with beta values.

The data analysed in this research has been collected from the reliable source *i.e.* from the website of National Stock Exchange (NSE). The sample consists of four major Mergers of last decade in the Indian banking sector. All the acquiring banks are traded on BSE SENSEX and NSE Nifty. These four banks are selected on the basis of availability of data and the target banks are traded on the BSE SENSEX and NSE Nifty at a significant price, *i.e.* non-zero. In order to find the impact of Merger and Acquisition we have used Event Study Methodology.

The table 2, below shows the sample of M&A's in the Indian banking sector and date of announcement.

Table 2

Name of the Acquirer Bank	*Targeted Bank*	*Year merger*	*Effective date*
Kotak Mahindra Bank	INGVyasa Bank	2014	01-Apr-15
ICICI Bank	Bank of Rajasthan Ltd.	2010	13-Aug-10
HDFC Bank	Centurion Bank of Punjab	2008	23-May-08
HDFC Bank	Times Bank Ltd.	2000	01-Jan-99

Source: www.academia.edu/Merger_and_Acquisition in Indian Banking Sector, Kotak mahiendra & ING Vyasa Bank M&A

To ascertain whether there are any abnormal or excess returns earned by security holders, we have defined an event window by combining three window period. The event window is divided in three parts: -

Estimation Window: Days before the announcement Day of acquisition.

Event Window: From Day of the announcement of acquisition Till Day of the Effective Day.

Post Event Window: Days after the Effective Day of acquisition.

After collecting the data for four banks and market, we have calculated the return of banks (Ri) separately and corresponding return for market (Rm) separately for each window period by using the formulas.

$$Ri = \frac{Pi_{t+1} - Pi_t}{Pi_t}$$

Where Ri represents day return of the Bank,

Pi_{t+1} The closing price of the current day

Pi_t Depicts the closing price of the previous day.

$$Rm = \frac{Pm_{t+1} - Pm_t}{Pm_t}$$

Where Rm represents day return of the market,

Pm_{t+1} This represents the Market closing price of the current day

Pm_t This represents the Market closing price of the previous day.

A key assumption underling this event study method is the hypothesis that prices of the stock market immediately and fully incorporate all the available information i.e. market efficiencyhypothesis. Resultantly, the announcement of a Merger or an Acquisition deal leads to a rapid adjustment of the share prices that are related to this event. In order to assess the significance of the adjustment of the share prices, this event model is used.

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

This equation explains the linear relationship between the expected return of the security and the market portfolio.

R_{it} depicts the actual return of the stock '*i*' at the time '*t*',

α_i and β_i depict the coefficients in the model,

R_{mt} is the market return portfolio '*m*' at time '*t*',

ε_{it} represents the statistical error i.e zero mean distribution term that has an expected value

$$E(\delta_{it}) = 0,$$

$$\text{constant variance Var } (\delta_{it}) = (\sigma^2_{ei})$$

We used R*i* and R*m* daily return of Estimation and Event Window Periods to calculate α_i and β_i coefficients separately for Further calculation of the abnormal return based on the market model and event model approaches.

To calculate the normal return of the each period we used average price of the market and banks share prices and calculate the return for that period of window. We followed below equation to find our each window period return:-

$$R_{it} = \frac{(\text{First day price of window period-Average price of the window period})}{\text{Average price of the window period}}\%$$

Where " R_{it} " refers to the Return of the Banks Stock for the " *t* " window period

$$R_{mt} = \frac{(\text{First day price of window period-Average price of the window period})}{\text{Average price of the window period}}\%$$

Where "R_{mt}" refers to the Return of the Market for the " *t* " window period

Then we have calculated the abnormal return on stock by using the formula:

Abnormal Return = Actual Return on stock (R*i*) – Expected Return on stock based on Event Model ($\hat{R}_i$)

and **Abnormal Return** = $R_i - \alpha - \beta R_m$

4. ANALYSIS AND RESULT

The analysis has been done in order to analyse how market reacts to the information like merger and acquisition of banks. Event study was conducted to measure whether any abnormal return earned by stake holders around the Merger and Acquisition period. The basic assumption of our study is that the information was communicated publicly and this type of information consists of surprising content that the abnormal return will occur at the time of event. Abnormal return of stock price indicates the impact of the particular event on the stock price and abnormal return differ for each acquisition, it depends upon the bank's background, financial conditions & market environment.

In this research paper results are different for each acquisition deal because these deals are done in different time period and according the time period effect of the acquisition is also differ. In our study we consider normal return as a basic to compare with expected return, normal return is based on the average price of the event/estimation window. We calculate abnormal return by two ways, it was mandatory to match result of the both ways and abnormal return should be more than 0% to conclude that the acquisition deal is profitable for the bank & bank's shareholders.

In our research abnormal return is the main function to conclude something about the acquisition deal. In this study abnormal return are different for each window and each acquisition deal.

Table 3 shows the summary of the analysis and some effects of each acquisition deal, discussed as under :

1. **KOTAK BANK –ING VYASA BANK :** Kotak Bank's shareholder received Abnormal Return 14.30% & 13.58% during Event window based on estimation window figure but after Effective day of the acquisition Kotak's abnormal return went down to 3.10% & 2.94% But this abnormal return is more than the estimation window period's excess return over normal return so this acquisition deal give profit to Shareholders during the event window. If someone purchased Kotak shares before the announcement date, he got Abnormal Returns (14.30% & 13.58%) on the shares.

2. **ICICI BANK – BANK OF RAJASTHAN :** ICICI Bank's Share holder received Abnormal Return -5.22% & -5.15% during event window based on estimation window figure but after effective day of the acquisition ICICI's abnormal return raised up to the 1.75% & 1.24%. This show bank's share prices hiked after effective day of the acquisition and shareholder got benefit little in comparison of the Kotak Bank's shareholder. Here it's important to look at the estimation window Returns because before the announcement the shareholders was gaining 50.75% abnormal return on the shares so This acquisition didn't give expected abnormal return to the Bank shareholders in comparison of the return of Kotak& ING Vyasa bank (14.30% & 13.58%) and not profitable to the shareholders.

3. **HDFC BANK–CENTURION BANK OF PUNJAB:** HDFC Bank's shareholder received Abnormal Return 1.23% & 1.07% during event window based on estimation window figure but after effective day of the acquisition HDFC's abnormal return got doubled up to the 3.04% & 5.83%. Before announcement HDFC's Abnormal Return was -40.95% & actual return was -19.11%. These returns were very low & not beneficial, in comparison of these returns HDFC's shareholders got abnormal return during event window and post-event window they received abnormal return but this was not real, it was a hypothetical return because actual return was in negative form So now we can conclude that HDFC's shareholder got benefit for a little time.

4. **HDFC BANK – TIMES BANK LTD. :** HDFC Bank's shareholder received Abnormal Return 13.57% & 16.24% during the event window based on estimation window figure but after effective day of the acquisition HDFC's abnormal return raised up to 49.82% & 50.25% . It showed that HDFC's shareholder received extreme abnormal return on acquisition but here it important to mention that Post-Event window's actual return was less than the Event window and Estimation window's actual return was negative. So this acquisition gave expected abnormal return (13.57% & 16.24%) to the HDFC's shareholders in term of share prices.

Table 3
Analysis Summary of the four bank's acquisition deals

Name of the Acquirer Bank	*Targeted Bank*	*Window*	*Beta*	*Rm (market)*	*Ri (Stock)*	*Event Model Ri*	*Abnormal Retrun*	*Excess of Return*
Kotak Mahindra Bank	INGVyasa Bank	Estimation	1.26	23.39%	30.94%	29.40%	1.54%	1.54%
		Event	0.91	2.46%	16.71%	2.41%	14.30%	14.30%
		Event (Based on Estimation window)	1.26	2.46%	16.71%	3.12%	13.58%	13.58%
		Post Event (Based on Estimation window)	1.26	-0.05%	3.08%	-0.02%	3.10%	3.10%
		Post Event (Based on Event Window)	0.91	-0.05%	3.08%	0.13%	2.94%	2.94%
ICICI Bank	Bank of Rajasthan Ltd.	Estimation	1.42	53.77%	126.99%	76.24%	50.75%	50.75%
		Event	1.64	0.85%	-3.83%	1.39%	-5.22%	-5.22%
		Event (Based on Estimation window)	1.42	0.85%	-3.83%	1.31%	-5.15%	-5.15%
		Post Event (Based on Estimation window)	1.42	2.80%	5.83%	4.08%	1.75%	1.75%
		Post Event (Based on Event Window)	1.64	2.80%	5.83%	4.59%	1.24%	1.24%
HDFC Bank	Centurion Bank of Punjab	Estimation	0.93	23.48%	-19.11%	21.85%	-40.95%	-40.96%
		Event	1.06	0.97%	0.22%	-1.00%	1.23%	1.22%
		Event (Based on Estimation window)	0.93	0.97%	0.22%	-0.84%	1.07%	1.06%

Name of the Acquirer Bank	*Targeted Bank*	*Window*	*Beta*	*Rm (market)*	*Ri (Stock)*	*Event Model Ri*	*Abnormal Retrun*	*Excess of Return*
		Post Event (Based on Estimation window)	0.93	-20.56%	-15.99%	-19.03%	3.04%	3.04%
		Post Event(Based on Event Window)	1.06	-20.56%	-15.99%	-21.82%	5.83%	5.83%
HDFC Bank	Times Bank Ltd.	Estimation	1.00	-10.56%	-19.50%	-10.62%	-8.88%	-8.88%
		Event	1.07	35.95%	52.17%	38.60%	13.57%	13.57%
		Event (Based on Estimation window)	1.00	35.95%	52.17%	35.93%	16.24%	16.24%
		Post Event (Based on Estimation window)	1.00	-10.94%	38.82%	-11.00%	49.82%	49.82%
		Post Event (Based on Event Window)	1.07	-10.94%	38.82%	-11.43%	50.25%	50.25%

5. CONCLUSION

The announcement of Merger and Acquisition is generally perceived as positive news. We have empirically examined the efficiency of the Indian Stock Market with regards to the information of announcement of Merger and Acquisition. After testing, the study shows that the shareholders of sample banks are little able to realize the abnormal/excess return with public information but these abnormal returns are only till the effective date of M&A and after M&A there was not much more excess return . The study proved that Indian stock market shows that the market is efficient in its semi-strong form as both the historical and publically available information are dispersed in the stock prices and bank's investor is able to earn abnormal/excess return.

This study had tested the market efficiency to generate the abnormal return on share prices for a bank in Indian stock market with respect to M&A's announcement after release the information in the market and after effective day of Merger and Acquisitions (M&A's).

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