

Post M&A Long Run Share Price Performance of Indian Acquiring Banks

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Abstract

This study attempts to investigate the impact of Mergers and Acquisitions (M&A) deals on shareholder wealth creation using Buy and Hold Abnormal Returns (BHAR) in order to understand the investor experience and capture investment goals of investors.

This study was conducted with respect to 21 M&A announcements in the Indian Banking sector. BHAR estimate under Event methodology approach was used to highlight excess returns over and above the market average after the merger announcements. Further the Average Buy and Hold Abnormal Return (ABHAR) estimate was calculated to analyse the impact of nature of amalgamation on post M&A announcement by grouping bidder banks as voluntary and compulsory merger type.

The study found: (1) the announcement of M&A deals do not create significant and improved BHAR for shareholders of the acquirer banks during their respective M&A deals. (2) ABHAR emphasised that on an aggregate basis, the M&A announcement has generated Buy and hold abnormal returns for the portfolio of Indian banks. (3) The Buy and Hold Abnormal Returns for bidder banks did not differ significantly when grouped as voluntary merger deals vis-à-vis compulsory merger deals.

Keywords: *Bank, BHAR, M&A, Performance*

Introduction

The Indian economy has seen significant increase in the Mergers and Acquisitions paradox in its various industrial sectors. Since the nationalisation era, the Indian banking sector has been through numerous policy changes, failure of banks, increase in Non-performing Assets (NPAs), resistance to government control on credit programs, and competition from foreign banks. The focus on importance of consolidation emerged with the Narasimham Committee I (1991) recommendations. These recommendations emphasised on external reconstruction and consolidation to make the size of the Indian commercial banks comparable with those of global competitors. There have been as many as 85 completed M&A deals within Indian banks since the pre-nationalisation era till date. With heightened M&A activity in the Indian banking sector, analysing the outcome of M&A deals on wealth creation for Indian acquiring banks becomes important from the viewpoint of investors who expect superior earnings from such transactions and therefore invest for short term or long term gains. *In the past, India had several small banks; therefore, India was termed as over-banked but under-served. With the aim of strategic positioning and commanding sizeable market share, the consolidation in the banking industry intends to improve long term financial performance.* The ability of mergers to create value in the long run has been one of the focus areas of research in finance. In India, a majority of research work is concentrated on evaluation of short-term effect of M&A on wealth creation. A smaller portion of studies have investigated the impact of M&A deals on shareholder wealth creation using buy and hold abnormal returns (BHAR), especially in the context of M&As in the Indian banking sector.

Previous studies in financial economics have analysed the long run behaviour of the stock returns following major corporate events and decisions like dividend announcements, stock splits, M&A, etc. These studies track the performance of returns post-event of sample firms for a relatively long timespan following the event as compared to that used in Cumulative Abnormal Returns Methodology. In studies like (Shirley Cheung, 2014), Buy and hold abnormal returns has been used to indicate the excess returns over the industry average that an investor of the acquirer firm will enjoy after purchasing the shares post-merger. The current study attempts to use BHAR estimate to measure investor experience and capture investment goals of investors with respect to announcements of M&A deals by banks. Also, this study considers Nifty 50 as the benchmark to calculate and evaluate the excess returns attained (if any) by the shareholder of the acquirer bank. This reference to market index rather than industry average has been justifiably practiced in previous studies [for instance (Barber, Lyon, 1997), (Turamari and Hyderabad, 2017), (Malpezzi and Martimo, 2015)]. Control firms approach, reference portfolios, benchmark method, and Fama-French three factor model are widely used methods for calculating long run abnormal returns as advocated by (Barber, Lyon, 1997).

In this study, the long-term abnormal returns are estimated by calculating Buy and Hold Abnormal Returns using Benchmark method where the benchmark return is derived from adjusted market model.

Applicability

The study would be useful for upcoming M&A cases where the study helps the investor capture their investment goal. The findings of this study are applicable to all emerging economies such as Brazil, Poland, Indonesia, Mexico, Poland, South Africa, South Korea, China, Nigeria, Saudi Arabia, Taiwan, and Thailand.

All corporate giants want to make their presence in these nations because of potential growth opportunities in these economies.

M&A is one of the best strategic moves to enter into these economies, but in most of the cases, investors are not experienced to predict the outcomes. So, the findings of this study would be helpful.

Review of Literature

A lot of empirical research work has been carried out through various studies in countries like US, UK and other developed countries in areas including short term as well as long term profitability and wealth creation effect of Mergers and Acquisitions, long run financial performance of acquirers as well as targets. In India, several studies have extensively elaborated in respect of trends and developments of M&A deals across various sectors. Several approaches including Cumulative Abnormal Returns (CAR) method, Capital Asset Pricing Model (CAPM) method, Fama French 3 factor model, Buy and Hold Abnormal Returns model have been popularly employed to examine M&A outcomes on long run performance of bidding firms across global and Indian corporate industry.

For assessing the impact of M&A announcement on long run share price performance of bidding banks by using BHAR methodology, prominent previous studies have been reviewed.

(Barber and Lyon, 1997) analysed the three general approaches i.e. Reference Portfolio, matched control firms and the Fama-French three-factor model for developing a benchmark for the calculation of long-run abnormal returns. The data set in their empirical analysis includes all NYSE/AMEX/NASDAQ firms from 1963 to 1994. The study concluded existence of significant biases in test statistics when long-run abnormal returns are calculated using a reference portfolio; long run CAR and associated test statistics are generally positively biased and long run BHAR and associated test statistics are generally negatively biased. (Turamari and Hyderabad, 2017) examined a sample of mergers between 2000 and 2010 to probe the long run performance of Indian acquiring companies. The long run CAR and BHAR were calculated using market index and control firms as reference portfolio. The results of the study suggest that in India, mergers in the long run bring gains to shareholders of acquiring companies and specifically cash financed mergers performed better than stock financed mergers in India. (Giannopoulos, Holt, Khansalar and Mogoya, 2017) traced the effect of M&A on the wealth of shareholders of public firms in the U.S by analysing 352 M&A deals during the period 1999-2008. The results of the study indicate that bidding firms suffer significant negative buy-and-hold abnormal returns in the three-year period after M&A announcement and that in the long run, hostile bids and cash-financed bidders outperform friendly bids and stock-funded bidders, respectively. (Amporn Soongswang, 2007) studied the market impact on tender offers undertaken by a Thai listed company from 1992-2002 with an aim to assess the impact of the strategy on shareholders' wealth. The study assessed the target firm's performance using BHAR. The results concluded that Thai takeovers create significant and substantial positive values before announcement, at announcement and after announcement for target. (Eugene F. Fama, 1998) discussed the finance literature on long term return anomalies. The paper elaborates on various previous literatures on concepts including behavioural models of overreaction and under-reaction, bad model problems, the return metric, and presents a discussion about reliability of individual studies done on IPOs, Stock splits, mergers, etc. The study concludes that apparent overreaction of stock prices to information is about as common as under-reaction and post event continuation of pre-event abnormal returns is about as frequent as post event reversal. The study stressed on the inference that the long term return anomalies are fragile. (Bishnoi and Sofia Devi, 2015) examined change in the performance of banks for 3 years pre and post merger in terms of financial ratios such as profitability ratios, solvency ratios, efficiency and earning capacity of banks, and growth rate of total assets. The study concluded that for all the nine merging banks, with a total of 18 cases of mergers over the period 1991-2010, each of the indicators shows different statistical significance in different merger cases and though M&A may be theoretically important, the impact on profitability, capital, and growth rate is not significant. Also equal numbers of significant ratios are seen for both compulsory as well as voluntary merger cases.

examined the trends in M&A in India, effect of M&A announcement on short term wealth and long term wealth creation for shareholders using CAR and BHAR. The study also applies accounting ratio methodology for pre-merger and post-merger operating and financial performance of firms in M&A deals. The sample includes 50 acquirers from the manufacturing sector for the period 1995-1996 through 2005-2006 sub-grouped using CMIE industry classification. With reference to long term buy and hold returns, it can be concluded that no significant positive returns have accrued to shareholders of acquirers in various sectors during post-announcement period. (Joeri Moerman, 2014) examined the long-term abnormal returns for 169 mergers that took place in the U.S. during the period 1995-2007. It is an empirical study attempting to discover factors affecting long term abnormal returns. The results of the study suggest that M&A of these companies were value destructing based on short-term results. The acquiring firms gained an immediate and statistical significant loss on the day of the announcement as well as subsequent 4-day window. The results also indicated insignificant abnormal returns in the case of mergers in the same industry. The study also observed a downward trend of ABHAR over a 3-year period. (Sihna, et. al 2019) used event study methodology to capture the impact of demonetisation on Indian industries. They tried to find diversity in the performance of various sectors by finding abnormal returns using asset pricing models and they concluded that the market has a short-term negative response towards the demonetisation announcement. (Zakaria & Kamaludin, 2018) used the Market-adjusted Abnormal Returns (MAAR) and Buy-and-Hold Abnormal Returns (BHAR) to study the short-and-long term share price performance of acquirer companies listed on the Saudi Arabia Stock Exchange. They concluded that investors could earn positive MAAR during the few days surrounding the announcement date and investors could earn positive and significant market-BHAR for shares that are held up to 36 months following the completion months of M&A events. (Giannopoulos, et. al 2017) analysed the impact of takeover announcement on shareholders' wealth and reviewed the difference in case of single acquirers and multiple acquirers. They found that acquirer shareholders experience positive abnormal returns during the announcement period. The study concluded that single acquirers consistently outperform multiple acquirers.

Objective

First, the study aims to examine the announcement effect of M&A on long term share price performance of the acquiring banks by deriving BHAR corresponding to each M&A deal. To judge the overall returns of the portfolio of the acquirer banks alongside the reference portfolio (Nifty 50), the percentage ABHAR of all the acquiring banks across the sample over different time windows after announcement are examined. Further, the study analyses the impact of nature of amalgamation on post M&A announcement i.e. whether the Buy and Hold Abnormal Returns for bidder banks differ when grouped as voluntary vis-à-vis compulsory merger type.

Methodology

The study has examined 25 M&A deals (excluding the M&A deals of co-operative banks, Regional Rural Banks and Financial Institutions) which took place in the post economic reform period in the Indian banking sector. The sample size of acquiring banks in the 25 M&A deals was further filtered to 20 M&A deals subject to the availability of data for satisfying the requirements of the objectives of the study. The study uses weekly share price data of acquiring banks as well as market index (Nifty 50). Inclusion of the acquirers is subject to them being listed during the three different event windows defined for the purpose of examining long term wealth creation effect of mergers i.e. 1-year, 2-year and 3-year holding periods after the announcement of M&A deal. Only domestic mergers and acquisitions were considered, wherein the acquirers as well as targets were part of the Banking Sector during the period 1991 to 2017.

Table 1: List of M&A deals considered in the sample

Sr No	Merger Announcement Date	Date	Acquirer Bank	Target Bank
1	01-01-1996	01-01-1996	State Bank of India	Kashinath Seth Bank
2	07-04-1997	08-04-1997	Oriental Bank of Commerce #	1. Punjab Co-op Bank Ltd 2. Bari Doab Bank Ltd
3	19-06-1998	03-06-1999	Bank of Baroda	Bareilly Corp. Bank Ltd
4	26-11-1999	26-02-2000	HDFC Bank Ltd	Times Bank
5	28-12-2000	10-03-2001	ICICI Bank	Bank of Madura
6	20-06-2002	20-06-2002	Bank of Baroda	Benaras State Bank Ltd
7	13-11-2002	01-02-2003	Punjab National Bank	Nedungadi Bank Ltd
8	08-05-2003	28-10-2003	Centurion Bank	Bank of Muscat
9	06-02-2003	25-06-2004	Bank of Baroda	South Gujarat Local Area Bank
10	26-07-2004	14-08-2004	Oriental Bank of Commerce	Global Trust Bank
11	29-06-2005	01-10-2005	Centurion Bank.	Bank of Punjab
12	25-01-2006	02-09-2006	Federal Bank Ltd	Ganesh Bank of Kurundwad
13	12-09-2006	03-10-2006	IDBI Bank	United Western Bank
14	14-02-2006	31-03-2007	Indian Overseas Bank	Bharat Overseas Bank
15	08-12-2006	19-04-2007	ICICI Bank	Sangli Bank
16	27-08-2007	13-08-2008	State Bank of India	State Bank of Saurashtra
17	25-02-2008	23-05-2008	HDFC Bank	Centurion Bank of Punjab
18	18-05-2010	13-08-2010	ICICI Bank	Bank of Rajasthan
19	15-07-2010	27-08-2010	State Bank of India	State Bank of Indore
20	20-11-2014	01-04-2015	Kotak Mahindra Bank	ING Vysya Bank

Source: Compiled from Report on Trend and Progress of RBI of various years, (Tamragundi and Devarajappa S, 2015), (Bishnoi and Sofia Devi, 2015) and Bloomberg.

Note: OBC's merger with the two targets; Bari Doab Bank Ltd & Punjab Co-op Bank Ltd have been categorised together for calculations due to common announcement & effective date of merger.

Buy and Hold Abnormal Returns (BHAR) technique, which focuses on long term wealth creation effect of M&As, has been employed in various studies [such as (Barber and Lyon, 1997), (Joeri Moerman, 2014)] etc.

This study focuses on post-announcement long term performance of shares of acquiring banks and for that, three different event windows have been defined with length of 1-year, 2-year and 3-year holding periods. As per standard approach, many studies have used BHAR to highlight excess returns over and above the industry average that an investor buying the shares of the acquiring firm enjoyed if he made the purchase of shares after a particular merger. But this study has considered the return on market (Nifty 50 index) as the expected return and this reference to market index rather than industry average has been justifiably practiced in previous studies [for instance (Barber, Lyon, 1997), (Turamari and Hyderabad, 2017), (Malpezzi, Martimo, 2015)]. The BHAR over the relevant event window is then computed by following the standard model given below:

T T

$$BHAR_i = \prod_{t=1}^T (1 + R_{i,t}) - \prod_{t=1}^T (1 + R_{benchmark,t})$$

Where, $BHAR_i$ is buy and hold abnormal returns for sample acquirer firm, $R_{i,t}$ are the raw weekly returns on share prices of acquirer firms for period t , $R_{benchmark,t}$ is the weekly returns on benchmark index for period t . In BHAR methodology, the cumulative returns during the selected event window or holding period on the share of the acquiring company are computed by compounding the weekly returns on the acquiring company's returns.

The below stated null hypothesis is tested by using t values at 1%, 5%, 10% level of significance:

H0: The announcement of merger and acquisition will not create long term abnormal returns for the shareholders of the acquiring bank over the one, two and three year time windows.

$$t_{BHAR} = \frac{\overline{BHAR}_i}{(\sigma(BHAR_{i,T}) / \sqrt{n})}$$

The Average Buy and Hold Abnormal Returns (ABHAR) across the portfolio of acquirer banks during a holding period T is computed as:

$$\overline{BHAR}_T = \frac{1}{N} \sum_{i=1}^N . BHAR_{i,T}$$

The null hypothesis that the **mean BHAR** or **ABHAR** is equal to Zero for the N number of merging banks is tested at 1%, 5% and 10% significance level.

Further, the study analyses the impact of nature of amalgamation on Post M&A announcement BHAR i.e. whether there is a significant difference between the Buy and Hold Abnormal Returns for bidder banks grouped as voluntary and compulsory merger type.

Therefore, the following hypothesis was tested at 5% level of significance:

H0: There is no significant difference between the ABHAR for bidder banks in compulsory mergers and that of bidder banks in voluntary mergers in 1-year, 2-year and 3-year holding periods.

For the above, first, the statistical technique F-Test Two-Sample for Variances was applied to determine whether the samples had equal or unequal variances at 5% level of significance. Results of F-Test showcased equal variances for both the sub-samples for 1-year, 2-year and 3-year holding periods. Therefore, t-test for two samples assuming equal variances was used to test significant difference between the Average Buy and Hold Abnormal returns (ABHAR) of bidder banks in compulsory merger group and that of bidder banks of voluntary merger group.

A Statistical F Test uses an F Statistic to compare two variances, s_1 and s_2 , by dividing them. $F = s_1^2 / s_2^2$, where, s_1^2 = larger sample variance and s_2^2 = smaller sample variance.

Two sample t test for equal variances:

$$t = \frac{(\bar{x} - \bar{y}) - (\mu_x - \mu_y)}{s \sqrt{\frac{1}{n_x} + \frac{1}{n_y}}}$$

Analysis and Interpretation

Section 1: BHAR of Acquirer banks derived for each of the M&A cases

Buy and Hold Abnormal Returns (BHAR) technique focuses on long term wealth creation effect of M&As. In this section, the impact of M&A on shareholder wealth creation using buy and hold abnormal returns (BHAR) is assessed.

Table 2 shows calculations of BHAR over 1, 2 and 3 year time windows post M&A announcement for the acquirer bank for each of the merger cases during the study period.

Table 2: Percentage Long Term BHAR of Acquirer Banks Post Merger Announcement

Acquirer Bank	1 Year	BHAR 2 Year	3 Year
State Bank of India (Target - Kashinath Seth Bank)	0.48	0.14	-0.04
Oriental Bank of Commerce (Target - Punjab Co-op Bank and Bari Doab Bank)	-0.25	-0.78*	-0.55
Bank of Baroda (Target - Bareilly Corp Bank)	-0.61	-0.64	0.01
HDFC Bank (Target - Times Bank)	2.19	1.24	0.77
ICICI Bank (Target - Bank of Madura)	-0.47	0.34	0.35
Bank of Baroda (Target - Benaras State Bank)	1.28	0.85	0.53
Punjab National Bank (Target - Nedungadi Bank)	2.23**	1.42**	1.11**
Centurion Bank (Target - Bank of Muscat)	-0.32	0.48	0.24
Bank of Baroda (Target - South Gujarat LAB)	1.40	0.60	0.29
Oriental Bank of Commerce (Target - Global Trust Bank)	-0.32	-0.84**	-0.55
Centurion Bank (Target - Bank of Punjab)	0.18	0.47	0.43
Federal Bank (Target - Ganesh Bank of Kurundwad)	0.04	0.31	0.13
IDBI Bank (Target - United Western Bank)	0.88	0.26	0.30

Acquirer Bank	1 Year	BHAR 2 Year	3 Year
Indian Overseas Bank (Target - Bharat Overseas Bank)	-0.30	0.11	-0.19
ICICI Bank (Target- Sangli Bank)	-0.01	-0.26	0.11
HDFC Bank (Target- CBOP)	0.38	0.28	0.27
State Bank of India (Target- State Bank of Saurashtra)	0.03	0.25	0.40
ICICI Bank (Target - Bank of Rajasthan)	0.26	0.03	0.15
State Bank of India (Target- State Bank of Indore)	0.05	0.01	-0.15
Kotak Mahindra Bank (Target- ING Vysya)	0.43	0.33	0.25

Note: (i) *, **, *** represents significance at 10%, 5% and 1% level respectively.

The BHAR for shareholders of PNB was found to be positive and statistically significant at 5% level for 1-year, 2-year as well as 3-year event windows. The BHAR for 1-year was 2.23% which declined for 2-year holding period to 1.42% and this further declined to 1.11% for 3-year holding period. The stock returns for the PNB shareholders declined as the length of the event window increased.

Oriental Bank of Commerce (OBC) has undertaken 3 M&A deals with Punjab Co-op Bank Ltd

and Bari Doab Bank Ltd announced in 1997 and with target Global Trust Bank (GTB) announced in 2004. In both the cases, the BHAR movement was similar i.e. negative BHAR for 1-year, 2-year as well as 3-year event windows, but statistically significant BHAR only in case of 2-year holding period. The trend noticed in all three merger deals of OBC is such that the returns to the shareholders relatively improved from 1-year period to 2-year period; however, the returns declined during the 3-year period.

Other than PNB and OBC, none of the other bidder banks showed significant positive or negative buy and hold abnormal returns.

The null hypothesis i.e. the announcement of M&A will not create long term abnormal returns for shareholders of bidder banks, is rejected only in case of PNB's merger with Nedungadi Bank for all the three event windows. In case of OBC, null hypothesis is rejected for the 2-year holding period with respect to both its M&A deals.

Section 2: Results of descriptive statistics of Average Buy and Hold Abnormal Returns

The ABHAR is measured over each week for 1-year, 2-year and 3-year holding periods by taking all the acquirer banks in our sample (subject to price data availability) thereby considering them collectively under one portfolio and using market index (Nifty 50) as a reference portfolio. The null hypothesis that the mean BHAR (ABHAR) is equal to Zero for the N number of merging banks is tested at 1%, 5% and 10% significance level.

Table 3: Percentage abnormal buy and hold results over different time windows after the announcement date

Particulars	BHAR		
	1 Year	2 Year	3 Year
ABHAR (of all the sample acquirer banks)	0.38 **	0.23*	0.19 **
T-Stat	2.15	1.87	2.32

Note: (i) *, **, *** represents significance at 10%, 5% and 1% level respectively.

For the portfolio of acquirer banks, the ABHAR for 1-year period was found to be 0.38% which declined to 0.23% for 2-year period. However, this further declined to 0.19% for the 3-year holding period. The ABHAR values for all the three years are statistically significant at 10% level of significance.

Figure 1: Percentage average abnormal buy and holding returns (ABHAR) for the portfolio of acquirer banks over a period of 3 years

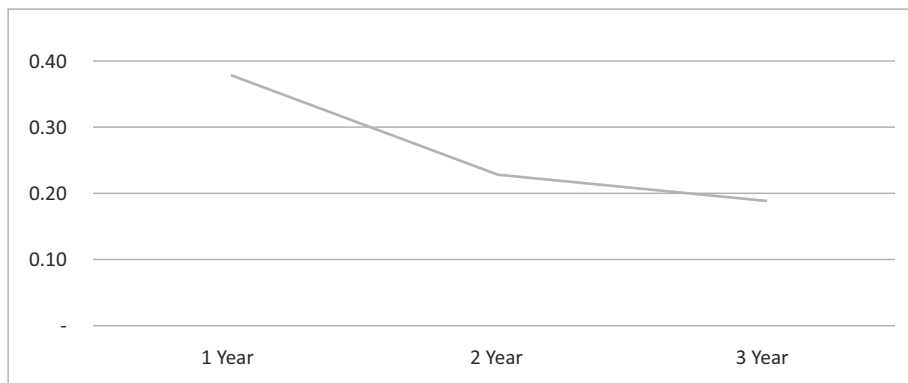


Figure 1 shows that the ABHAR is positive for all the 3 event windows but has a diminishing trend, which implies that though the shareholders didn't suffer negative returns, the returns for the shareholders had an inverse relationship with the length of the event windows.

The study rejects the null hypothesis that $ABHAR \neq 0$ for 1-year, 2-year and 3-year holding period.

Section 3: Impact of nature of amalgamation on Post M&A announcement long term returns

Various previous studies have explored how the nature of the bid (friendly or hostile) may affect bidder shareholders' wealth. Studies like (Cosh, Guest 2001) found that hostile bidders (sample of UK firms) earn positive returns in the long term after an M&A compared to friendly bids which resulted in negative long-term returns. (Dube, Glascock and Romero, 2007) stressed that bidder firms in friendly bids are unable to earn positive abnormal returns in the long term, as the target firms have fewer attractive features.

This study tries to extend the above idea in the Indian banking sector context, trying to analyse the impact of nature of amalgamation on Post M&A announcement BHAR. The Banking Regulation Act (BRA), 1949 provides the regulatory framework for M&A in India's banking sector. The act provides for two types of amalgamations: (i) voluntary, and (ii) compulsory.

RBI has the discretionary power to approve the voluntary amalgamation of two banking companies under Section 44(A) of the BRA. Compulsory amalgamations are induced or forced by RBI under Section 45 of the BRA, in public interest or in the interest of the depositors of a distressed bank, or to secure proper management of a banking company, or in the interest of the banking system.

The study tries to assess whether there is a significant difference between the buy and hold abnormal returns for bidder banks grouped as voluntary merger and compulsory merger type.

Table 4: Post M&A announcement ABHAR for bidder banks grouped as per type of amalgamation

Event Window	ABHAR			t-Stat
	Compulsory (n = 8)	Voluntary (n = 12)	Difference of Means	
1 year	0.72*	0.15	0.57	1.56
2 year	0.25	0.22*	0.03	0.09
3 year	0.15	0.22***	-0.07	-0.37

Note: (i) *, **, *** represents statistical significance of BHAR as well as mean difference at 10%, 5% and 1% level respectively.

It can be observed that the ABHAR values for 1-year, 2-year and 3-year holding periods were positive for bidder banks in compulsory merger type as well as voluntary merger type. (Refer to Annexure 1 for the list of merger cases included in the two categories).

The bidder banks that participated in voluntary mergers experienced statistically significant positive ABHAR during the 2-year and 3-year holding periods. The bidder banks that participated in compulsory mergers experienced statistically significant positive ABHAR during the 1-year holding period.

ABHAR of bidder banks in compulsory type of merger has been greater than bidder banks in voluntary type of merger in the 1-year holding period and 2-year holding period. But none of these mean differences corresponding to the three event windows are statistically significant at 5% when tested using t test for two samples having equal variances. The null hypothesis is accepted at 5% level of significance for all the three event windows.

Conclusion

With heightened M&A activity in the Indian banking sector, analysing the effects of M&A on wealth creation for Indian acquiring banks becomes important from the viewpoint of investors who speculate to earn superior returns from such transactions and therefore, invest for short term or long term gains. The current study attempts to use BHAR estimate to measure investor experience and capture investment goals of investors with respect to announcements of M&A deals by banks.

On announcing their M&A deals, majority of the acquirer banks have reported positive BHAR at the end of the 3-year holding period though none are statistically significant except in case of PNB and NBL M&A announcement. Therefore, this provides an extremely weak evidence of improvement in long term returns to the shareholders of the acquirer banks making investments on acquisition announcement.

Analysis of ABHAR emphasises that on an aggregate basis, the M&A announcement has generated buy and hold abnormal returns for the portfolio of Indian banks.

Further, the study also concludes that the Buy and Hold Abnormal Returns for bidder banks did not differ significantly when grouped as voluntary merger deals vis-à-vis compulsory merger deals.

Generalizability

The studies available on M&A long term share price performance in developed nations have shown mixed results with some studies stating that firms suffer significant negative buy-and-hold abnormal returns in a few years after M&A announcement and some studies stating the reverse. The findings of the present study are in line with the previous studies. The results provide mixed evidences about long term wealth generation for acquirers.

Annexure 1

Results of Two-Sample T-Test assuming Equal Variances for 1-Year Holding Period

Particulars	Compulsory	Voluntary
Mean	0.72	0.15
t Stat	1.56	
t Critical two-tail	2.10	
P(T<=t) two-tail	0.14	

Results of Two-Sample T-Test assuming Equal Variances for 2- Year Holding Period

Particulars	Compulsory	Voluntary
Mean	0.25	0.22
t Stat	0.09	
t Critical two-tail	2.10	
P(T<=t) two-tail	0.93	

Results of Two-Sample T-Test assuming Equal Variances for 2- Year Holding Period

Particulars	Compulsory	Voluntary
Mean	0.15	0.22
t Stat	-0.37	
t Critical two-tail	2.10	
P(T<=t) two-tail	0.72	

Annexure 2

List of mergers grouped as voluntary and compulsory merger type

Voluntary Merger Cases

Acquirer Bank	1 Year	BHAR 2 Year	3 Year
Bank of Baroda (Target - Bareilly Corporation Bank)	-0.61	-0.64	0.01
HDFC Bank (Target - Times Bank)	2.19	1.24	0.77
ICICI Bank (Target - Bank of Madura)	-0.47	0.34	0.35
Centurion Bank (Target - Bank of Muscat)	-0.32	0.48	0.24
Centurion Bank (Target- Bank of Punjab)	0.18	0.47	0.43
Indian Overseas Bank (Target - Bharat Overseas Bank)	-0.3	0.11	-0.19
ICICI Bank (Target-Sangli Bank)	-0.01	-0.26	0.11
HDFC Bank (Target - CBOP)	0.38	0.28	0.27
State Bank of India (Target- State Bank of Saurashtra)	0.03	0.25	0.4
ICICI Bank (Target - Bank of Rajasthan)	0.26	0.03	0.15
State Bank of India (Target- State Bank of Indore)	0.05	0.01	-0.15
Kotak Mahindra Bank (Target- ING Vysya)	0.43	0.33	0.25

Compulsory Merger Cases

Acquirer Bank	1 Year	BHAR 2 Year	3 Year
State Bank of India (Target - Kashinath Seth Bank)	0.48	0.14	-0.04
Oriental Bank of Commerce (Target - Punjab Co-op Bank and Bari Doab Bank)	-0.25	-0.78	-0.55
Bank of Baroda (Target - Benaras State Bank)	1.28	0.85	0.53
Punjab National Bank (Target - Nedungadi Bank)	2.23	1.42	1.11
Bank of Baroda (Target - South Gujarat LAB)	1.4	0.6	0.29
Oriental Bank of Commerce (Target - Global Trust Bank)	-0.32	-0.84	-0.55
Federal Bank (Target - Ganesh Bank of Kurundwad)	0.04	0.31	0.13
IDBI Bank (Target - United Western Bank)	0.88	0.26	0.3

M&A cases divided as compulsory and voluntary based on information sourced from Report on Trend and Progress of RBI of various years, (Tamragundi and Devarajappa S, 2015),(TR Bishnoi and Sofia Devi, 2015) and Bloomberg.

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