

# “Relationship between merger announcement and stock returns: evidence from Indian banking”

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## Relationship between merger announcement and stock returns: evidence from Indian banking

### Abstract

This paper examines the relationship between merger announcements with the stock returns in the Indian Banking during the period of 1999-2008. Using event study methodology, it attempts to ascertain whether the bidder banks experience significant abnormal returns during the post-announcement and pre-announcement periods. The results indicate that bidder banks may or may not experience any significant abnormal returns during the post-announcement period. No bank specific characteristics could explain the pattern of market reaction to merger announcements. However, significant abnormal returns were observed in daily share prices in majority of the cases, during the pre-announcement period, indicating possibility of leakage of information in the market.

**Keywords:** mergers in banks, merger announcement, consolidation in banking, market reaction, event study methodology, abnormal stock returns, pre-announcement, post-announcement, bidder banks, facilitated mergers, market driven mergers.

**JEL Classification:** G21, D4.

### Introduction

Banking industry around the globe has undergone significant transformation under the impact of technological advances, deregulation and globalization. An important aspect of this process has been consolidation, as a large number of banks have been merged, amalgamated or restructured. Although, the process of consolidation began in 1980's, it accelerated in the 1990's, leading to the present state of highly concentrated markets with just a few dominating players (Yassin 2011). During the late 1990s, macroeconomic pressures and banking crises forced banking industry to alter its business strategies. The regulators were under pressure to deregulate the banking sector at the national level and open up financial markets to foreign competition. This led to increased competition, particularly for the banks in the emerging economies that were hitherto operating in a protected environment. This led to significant changes in the structure of the banking industry, including, among others, privatization of state-owned banks, mergers and acquisitions (M&A's) and increased presence of foreign banks. The financial value involved in the M&A's multiplied over the years. As a result of these M&A's, the number of banks has declined substantially both in advanced and developing economies.

A number of studies have been conducted in the mature markets to find out how the stock markets react to the merger announcements and whether the investors perceive the merger announcement as good or bad news for the banks. However, not much attention seems to have been paid to this issue in the developing economies. The results may differ significantly, particularly in view of the fact that developing countries share peculiar characteristics not

commonly found in mature market economies. Such characteristics include dominance of state owned banks and M&A transactions driven by policy initiatives instead of market drivers. Present paper offers evidence in this regard from the Indian banking sector that shares these characteristics with banking sectors of many developing countries.

### 1. Mergers and Indian banking system: an overview

Like most developing economies, the banking system in India comprises of different ownership groups, public and private, and within private, domestic and foreign. Indian banking system has been dominated by the public sector banks for a very long time till smaller private banks as well as foreign banks were allowed to coexist but even then their activities were restricted through entry regulation and strict branch licensing (Kumbharkar, 2003). At the end of 1990's, public sector banks accounted for nearly 90% of total assets and deposits with the residual being almost equally split between private and foreign banks but the situation changed by the end of 2008, when private banks also increased their share significantly to 21.5% and 20.5% in terms of total assets and deposits respectively but still public sector banks continued to play a dominant role in the Indian banking. Another feature of Indian banking is that in the public sector banks, Government owns 51% to 55% share and the remaining is with the private shareholders. Thus, the issue of mergers involving public sector banks is just not a policy issue as it involves private interest as well.

A number of steps were taken by Reserve Bank of India (RBI) based on the recommendations of the first Narasimham Committee on Financial Reforms in 1991. The reforms aimed at creating a more profitable, efficient and sound banking system through entry de-

regulation, branch de-licensing, deregulation of interest rates, etc. However, the second Narasimham Committee 1998 recommended mergers of large Indian banks to make them strong enough for supporting international trade. Based on the recommendations of the committee, there was a string of mergers in Banks of India during the late 90's and early 2000. However, consolidation of banks through M&A's is not a new phenomenon for the Indian Banking system, which has been going on for several years. There have been several bank amalgamations in India in the post-reform period. In all, there have been 33 M&A's since the nationalization of 14 major banks in 1969. Of these mergers, 25 involved mergers of private sector banks with public sector banks, while in the remaining eight cases, mergers involved private sector banks. Out of 33, 21 M&A's took place during the post-reform period with as many as 17 mergers/amalgamations took place during 1999 and after. Prior to 1999, the amalgamations of banks were primarily triggered by the weak financials of the bank being merged, whereas in the post-1999 period, there have also been mergers between healthy banks, driven by the business and commercial considerations (Leeladhar, 2008). Out of 17 mergers, financial data regarding share prices was available only for 13 banks.

Though, the total assets of the merged (target banks) was fairly large at the time of merger and was around Rs 39,000 crores, there is not enough research to indicate implication of the merger announcement on the wealth of the shareholders. This particular area could be a matter of interest not only to the shareholders who are an important stakeholder of a banking firm but also to policy makers because in a country like India where public sector banks dominate the banking industry, it is the Government who is the major owner of such enterprises and will incur financial loss if mergers are not creating any wealth. Most of the bank mergers in India are policy driven and not market driven, hence it is important for the policy makers to understand that their policies have added value for all the stakeholders or not.

## 2. Literature review

A number of studies have been conducted to examine the impact of consolidation in Banking on shareholder's wealth. However, most of the studies have focused on mature market economies, though a few did examine the implications for the developing economies as well.

*2.1. Studies in mature market.* One of the earlier studies by Thomas F. Siems (1996) uses an event study methodology and data from the largest bank (those with \$10 billion in assets) mergers of 1995 and finds that acquiring banks in mergers with the

highest percentage of office overlap receive significant positive and higher abnormal returns than banks in mergers with fewer office overlaps. The study analyses stock returns of acquiring and target banks (19 bank mega mergers) to assess the financial markets expectations as to the overall performance results from such deals. The results indicate that the merger announcement were generally associated with negative abnormal returns to acquiring bank shareholder's and positive abnormal returns to target bank stocks. This is because management was either attempting to maximize its own utility and not that of its shareholders or it simply paid too much for the target institutions.

Steven J. Pilloff (1996) uses both the accounting and market data to study the gains achieved in a sample of forty-eight mergers involving publicly traded institutions that merged between 1982 and 1991. To assess the overall gain in wealth, the consolidated sum of acquirer and target abnormal return is measured. The results suggest that merger announcement typically do not lead to overall gain in stockholder wealth. The abnormal return findings suggest that on average market does not expect mergers to lead to gains in performance, a result consistent with actual measured performance gains.

David A. Becher (2000) examines the valuation effects of sample of 558 bank mergers from 1980-1997. The overall results indicate that bank mergers create wealth. A basic event study is done to calculate abnormal returns for target and bidder firms and the author focuses on two different window periods, 36 day window and an 11 day window. The returns to the bidder firms are statistically negative in the 11-day window, while the returns to the target firms and combined firms remain statistically positive in both windows. Their results are also consistent with the notion that bank mergers occur for synergistic reasons and are not the result of empire building.

Houston Ryangert (2001) analyzes a sample of 64 largest bank mergers in the US between 1985 and 1996. They obtain managements estimates of projected cost savings and revenue enhancements and found that mergers occurring in the 1990's appear to result in positive revaluations of the combined value of bidder and target banks, though the returns to bidder banks are negative and statistically significant. Their results are also consistent with notion that bank mergers occur for synergistic reasons and are not the result of empire building. By linking management's assessment of the merger's value to stock analysts' reports and the stock market's reaction, the study has looked at each merger from the perspective of management, analysts and investors.

Cornett and Tehranian (2006) measures long-term operating performance of commercial bank mergers over the period of 1990-2000 using both accounting data and stock return data. The results of the study indicate that along with increase in accounting based operating performance, the merged banks also experience positive abnormal long run stock returns. The abnormal returns to bidder bank are negative and significant and those of the target banks are positive and significant.

Cybo-Ottone and Murgia (2000) perform an event study analysis of 54 M&A deals during the period of 1988-1997, covering 13 European banking markets of the European Union plus the important Swiss markets. The study finds a positive and significant increase in stock market value for the average merger at the time of deal announcement. Their findings contradict the bulk of empirical studies conducted in the US banking markets where no value creation effects are generally found. They explain this difference in results as stemming from the different structure and regulation of EU banking markets. The returns to target bank shareholders are significantly positive, but the returns to the acquirer bank shareholders show a significant positive effect in the shorter event windows with a general market index. On the other hand, results using bank sector index do not confirm a significant positive effect for the bidder firms.

Campa and Hernando (2006) look at the performance record of M&A's that took place in the European Union financial industry in the period of 1998-2002. The results indicate that merger announcements implied positive excess returns to the shareholders of the target company around the date of the announcement, with a slight positive excess-return on the 3-months period prior to announcement. Returns to shareholders of the bidder firms were essentially zero around announcement. One year after the announcement, excess returns were not significantly different from zero for both targets and bidders. On the other hand target banks show improvements in their return on equity and efficiency following their acquisition.

Another study by Scholtens and Wit (2004) examines the short-term wealth effects of bank mergers in the US and European market to both the target and bidder banks shareholders. Wealth is calculated on the basis of performance vis-à-vis the market and sector specific index. The study finds that there are significant differences in the shareholder wealth effects of the US and European bank mergers but there are situations in which market reactions do not significantly differ. Both targets and bidders show positive cumulative abnormal returns in Europe whereas in the US only target show positive

abnormal returns. The overall value of bank mergers is positive in Europe and neutral in the US.

Thus, the findings of the studies in the US differ from those in European markets. The studies in the US find negative returns to the shareholders of the bidder bank and positive returns to the shareholders of the target banks, positive returns in the combined value of bidder and target banks. On the other hand, studies in the European markets find positive returns both to the bidder and target bank shareholders. The difference in the results in both the markets could be explained from the different structure and regulation of EU banking markets (Cybo-Ottone, 2000). India, being one of the leading emerging market economies has a banking structure and regulatory framework, which is different from countries like the US and Europe. Thus, it will be interesting to examine the issue in the context of developing economies like India.

*2.2. Studies in developing economies.* Choi and Murtagh (2004) investigate the effects of mergers and acquisitions among South Korean commercial banks for the period of 1998-2002. However, they do not find significant abnormal returns for the bidders in the pre-announcement period. Also, they do not find significantly negative returns after its public announcement; in contrast they find significantly negative abnormal returns for the target banks for a particular window. The results indicate that there is evidence of speculation on target banks being acquired. Evidence of leakage of news prior to the official merger announcement is unlikely since they do not show any significant returns to bidders prior to announcement date. In addition, there were negative returns for a target as well as a bidder, which is somewhat unusual compared to the general merger and acquisition result.

Ritu Basu et al. (2004), examine a large panel of more than 100 banks from Argentina to study the effects of bank consolidation on performance between December 1995 and December 2000. The results show a positive and significant effect of bank consolidation on performance as bank returns increase with consolidation and insolvency risk is reduced. The study specifies a bank return generating process that includes several macro-economic and bank specific risk factors.

Chong (2005) examines the impact of forced bank mergers on the shareholder's wealth of Malaysian banks using event study methodology. The results of the study shows that the forced merger scheme destroys economic value in aggregate and acquiring banks tend to gain at the expense of the target banks. The overall value of the Malaysian forced bank merger scheme is significantly negative. His analysis further shows that the contrasting forced merger finding is linked to cronyism.



Anand and Singh's (2008) study on "Impact of merger announcement on shareholder wealth: evidence from Indian private sector banks" analyzes five mergers in the Indian banking sector during the period from 1999 to 2005 to study the returns to shareholders as a result of merger announcement using event study methodology. The results indicated that merger announcement in the Indian banking industry have positive and significant shareholder wealth affect both for bidder and target banks.

Jayadev and Sensarma's study on "Mergers in Indian banking: An analysis" examines some critical issues of consolidation in Indian banking with particular emphasis on views of two important stakeholders, i.e., shareholders and managers. The author conducts an event study analysis of bank stock returns to find that in case of forced mergers, neither the bidder nor the target shareholders have benefited but in case of voluntary mergers, the bidder banks shareholders have gained more than those of target banks.

Thus, in case of developing economies, the studies above indicate that mergers, which have been forced

or facilitated, create no value for shareholders and the results are mixed for other mergers. However, no comprehensive study seems to be carried which covers the entire reform period. Also, the window period selected in most of the studies is very short and the long-term implication of shareholder wealth has not been examined. This paper makes a modest attempt in this direction.

### 3. Data, sample and method of analysis

During the period of study, 13 bank mergers took place. In all such cases, the acquirer banks were listed with stock exchanges in India and the data with respect to daily and weekly share prices were obtained from the "Capitaline" database. In addition, the information regarding date of announcement, the type of merger (forced/facilitated by policy decision or voluntary, driven by market) and the stated objectives of merger were obtained from various published reports, press releases and the websites of the concerned banks. Table 1 gives the list of mergers, their dates of announcement and types of merger for the banks included in the sample.

Table 1. Merger announcements included in the sample

Date of announcement	Name of the acquirer bank	Name of the target bank	Type of merger
November 26, 1999	HDFC Bank	Times Bank	Market driven
December 10, 2000	ICICI Bank	Bank of Madura	Market driven
November 15, 2002	Punjab National Bank	Nedungadi Bank	Facilitated
October 20, 2001	Bank of Baroda	Benaras state Bank	Facilitated
June 25, 2004	Bank of Baroda	South Gujarat Local Area Bank	Facilitated
July 26, 2004	Oriental Bank of Commerce	Global trust Bank	Facilitated
June 20, 2005	Centurion Bank	Bank of Punjab	Market driven
September 13, 2006	IDBI Bank	United Western Bank	Facilitated
January 25, 2006	Federal Bank	Ganesh Bank of Kurundwad	Facilitated
February 15, 2006	Indian overseas Bank	Bharat overseas Bank	Facilitated
September 4, 2006	Centurion Bank	Lord Krishna Bank	Market driven
December 9, 2006	ICICI Bank	Sangli Bank	Market driven
February 22, 2008	HDFC Bank	Centurion Bank of Punjab	Market driven

For the purpose of the study, the first date of media announcement of the merger has been taken as the event date (day 0). Date of announcement is the date when the company has gone public regarding the proposed merger. This is the date when only announcement regarding a proposed merger reaches the market and the merger has not actually taken place. It is expected that market then starts reacting immediately to the announcement which becomes apparent in the share prices of both the acquirer and target banks going in for the merger. Thus, the first possible date when news of the proposed merger was made public is very important and has been used in the study. The same has been obtained from a variety of sources such as the news clippings or the information available on the websites of the respective banks. Event study methodology was used to examine the impact of merger announcement on stock returns.

Both daily and weekly share price data were used as most of the shareholders do not react on daily basis to the market expectation. It is may be the traders and not the shareholders for whom daily share price returns may actually matter in such announcements. Therefore, weekly returns were also computed to analyze if they result in any significant returns to the shareholders.

The daily share price data was collected for 160 days prior to the date of announcement and 40 days after the date of announcement. Likewise, the weekly share price data was collected for 130 weeks before the announcement date and 26 weeks after the announcement date.

For each security  $j$ , the following stochastic process model is used to calculate abnormal return:

$$AR_{jt} = R_{jt} - (\alpha + \beta \times R_{mt}),$$

where,  $AR_{jt}$  is the abnormal return for bank stock  $j$  at time  $t$ ;  $R_{jt}$  is the actual return for bank stock  $j$  at time  $t$ ;  $\alpha$  is the ordinary least square (OLS) estimate of the intercept of the market model regression;  $\beta$  is the ordinary least square (OLS) estimate of the slope of the coefficient in the market model regression;  $R_{mt}$  is the return to the market at time  $t$  as approximated by the BSE sensex.

The abnormal returns were then calculated to find cumulative abnormal return (CAR). Daily pre-event CAR ( $CAR_i$  41 to -1 days) and post-event CAR ( $CAR_j$  0 to 40 days) was calculated. Similarly, weekly pre-event CAR ( $CAR_i$  -26 to -1 week) and post-event CAR ( $CAR_j$  0 to 26 weeks) was calculated. They were further tested for significance at the 5% level by calculating standardized cumulative abnormal return (SCAR) for both pre-event ( $SCAR_i$ ) and post-event ( $SCAR_j$ ) each where:

$$SCAR_i = \frac{CAR_i}{\text{Standard error of } CAR_i}.$$

$$SCAR_j = \frac{CAR_j}{\text{Standard error of } CAR_j}.$$

It is the post-event SCAR ( $SCAR_j$ ) of the bidder banks, which is then analyzed to ascertain if bank

mergers have resulted in any significant returns to the shareholders of the bidder banks.

#### 4. Merger announcement and stock returns

M&A, being an important piece of information for any company, should normally result in significant impact on share prices. Such an impact may be reflected in positive abnormal returns for the bidder banks if market perceives positive gains from the merger. Ordinarily, the impact of M&A announcement should be noticeable only after the announcement has been made, i.e., post-announcement period. However, some traces of the impact of merger may be observed during the period prior to the announcement due to leakage of some information or rumors regarding announcement. Therefore, the impact of merger announcement has been examined for post-announcement period as well as pre-announcement period.

#### 5. Impact on stock returns during post-announcement period

The impact was examined both on daily and weekly stock returns. Table 2 presents cumulative abnormal returns ( $CAR_j$ ) and standardized cumulative abnormal returns ( $SCAR_j$ ) of bidder banks using both daily and weekly data.

Table 2.  $CAR_j$  and  $SCAR_j$  of bidder bank

Name of the bidder bank (Target)	$CAR_j$		$SCAR_j$	
	Daily	Weekly	Daily	Weekly
Indian Overseas Bank (Bharat Overseas Bank)	-0.23	-0.15	-9.4*	-0.65
Bank of Baroda (Banaras State Bank)	0.27	0.58	6.27*	1.94*
Bank of Baroda (South Gujarat Bank)	-0.01	0.07	-0.55	0.23
HDFC Bank (Centurion Bank Of Punjab)	-0.007	-0.47	-0.23	-1.78
Centurion Bank of Punjab (Bank Of Punjab)	-0.08	-0.54	-1.93*	-2.57*
Centurion Bank (Lord Krishna Bank)	-0.04	-0.55	-2.05*	-2.46*
Oriental Bank of Commerce (Global Trust Bank)	-0.31	-2.54	-14.02*	-6.62*
ICICI Bank (Sangli Bank)	0.04	0.26	1.6	2.66*
Federal Bank (Ganesh Bank of Kurundwad)	-0.03	-0.62	-1.005	-5.01*
Punjab National Bank (Nedungadi Bank)	0.368	N.A	6.21*	N.A
ICICI Bank (Bank Of Madura)	0.13	-0.15	2.75*	-1.13
HDFC (Times Bank)	0.68	1.04	10.45*	4.75*
IDBI Bank (United Western Bank)	0.31	0.21	7.36*	0.51
Total no of cases			13	12
Not significant			4 (30%)	5 (40%)
Significantly positive			5 (40%)	3 (25%)
Significantly negative			4 (30%)	4 (33.33%)

Notes: \* Significant at the 5% level. N.A – weekly data for the complete estimation window was not available as the bank was listed on stock exchange at a later date. The share price data could be collected only for three weeks in the estimation window.

As may be observed from Table 2, there are five mergers (more than 40% of cases) where daily data shows results different from that suggested by weekly data. Therefore, this implies that the

result could be influenced by the fact whether the stock price data was taken on daily basis or weekly basis. In case of daily returns,  $SCAR_j$  was significantly positive in five out of thirteen cases,

significantly negative in four cases and insignificant in four cases. In case of weekly returns,  $SCAR_j$  was significantly positive in three out of thirteen cases, significantly negative in four cases and insignificant in five cases. Weekly data was not available for the entire estimation window for one of the banks as it was listed later. Thus, the results were mixed and they do not help us in conclusively ascertaining whether the impact is insignificant, significantly positive or significantly negative.

However, from the perspective of a long-term investor, the news is not very good as the probability of positive returns declines as we shift from daily returns to weekly returns.

## 6. Relationship between $SCAR_j$ and bank characteristics

Since, the results were mixed; an attempt was made to identify some of the bank characteristics that could influence  $SCAR_j$ . These characteristics included the type of merger – facilitated or market driven (F/M), size gap ratio of bidder and target bank (Total assets of bidder/Total assets of target), NPA's of the target banks and financial health of the target banks in terms of stressed or non-stressed banks. On the basis of these characteristics, a unique pattern developed in case of each merger. Table 3 presents the value of computed  $SCAR_j$  and other information relating to these characteristics in respect of each of the mergers under study.

Table 3. Relation between  $SCAR_j$  and bank characteristics

Name of the bidder bank (target)	Daily $SCAR_j$	Weekly $SCAR_j$	F/M	Size gap ratio (small/big)	NPA's	STR/NSTR	Pattern
Indian Overseas Bank (Bharat Overseas Bank)	-9.4*	-0.65	F	15.91 (sg)	Low	NSTR	FSGLNSTR
Bank of Baroda (Banaras State Bank)	+6.27*	+1.94*	F	55.8 (bg)	Low	STR	FBGLSTR
Bank of Baroda (South Gujarat Bank)	-0.55	+0.23	F	6.63 (sg)	High	STR	FSGHSTR
HDFC Bank (Centurion Bank of Punjab)	-0.23	-1.78	M	4.85 (sg)	Low	NSTR	MSGLNSTR
Centurion Bank of Punjab (Bank of Punjab)	-1.93*	-2.57*	M	0.92 (sg)	Low	STR	MSGLSTR
Centurion Bank (Lord Krishna Bank)	-2.05*	-2.46*	M	4.408 (sg)	Low	STR	MSGLSTR
Oriental Bank of Commerce (Global Trust Bank)	-14.02*	-6.62*	F	4.57 (sg)	High	STR	FSGHSTR
ICICI Bank (Sangli Bank)	+1.6	+2.66*	M	116.8 (bg)	Low	STR	MBGLSTR
Federal Bank (Ganesh Bank of Kurundwad)	-1.005	-5.01*	F	92.5 (bg)	High	STR	FBGHSTR
Punjab National Bank (Nedungadi Bank)	+6.21*	N.A	F	48.29 (bg)	High	NSTR	FBGHNSTR
ICICI Bank (Bank of Madura)	+2.75*	-1.13	M	4.44 (sg)	Low	NSTR	MSGLNSTR
HDFC (Times Bank)	+10.45*	+4.75*	M	3.55 (sg)	Low	NSTR	MSGLNSTR
IDBI Bank (United Western Bank)	+7.36*	0.51	F	12.36 (sg)	Low	STR	FSGLSTR

Notes: \* Significant at the 5% level, N.A – weekly data for the complete estimation window was not available; F – facilitated, M – market driven, SG – small gap, BG – big gap, STR – stressed, NSTR – non stressed.

**6.1. Facilitated and market driven mergers.** As can be observed from the above table, seven mergers were facilitated and six were market driven mergers. Among the facilitated mergers, standardized daily cumulative abnormal returns (daily  $SCAR_j$ ), was significantly positive in case of three mergers, significantly negative in case of two mergers and insignificant in the remaining two mergers. However, standardized weekly cumulative abnormal returns (weekly  $SCAR_j$ ) was significantly positive in case of only one merger, significantly negative in case of two mergers and insignificant in three and for one of the merger, data was not available.

Among the market driven mergers, it is normally expected that the shareholders of the bidder banks will earn positive returns but as can be observed

from the above table that standardized daily cumulative abnormal returns (daily  $SCAR_j$ ) are significantly positive in case of only two mergers, significantly negative in case of two and insignificant in the remaining two cases. Standardized weekly cumulative abnormal returns (weekly  $SCAR_j$ ) were also significantly positive in case of two mergers, significantly negative in case of two and insignificant in case of remaining two.

### 6.2. Size gap between the target and bidder bank.

The impact of M&A announcement on share price may not be substantial if the bidder bank is significantly larger than the target bank as the acquisition of new resources would only constitute a very small proportion of the assets of the bidder bank after the merger. Thus, the size gap between the bidder bank

and the target bank may play an important role in determining whether merger announcement will have significant impact on share prices of the bidder bank. It was observed that size gap ratio of the banks do not seem to significantly influence the returns to the shareholders. Normally, the higher is the size gap ratio, less significant the impact on the share price of the bidder bank. The size gap ratio till about 20% was classified as small and the remaining as big size gap ratio. A big size gap ratio of 55.8 has given significant positive returns to the shareholders in both daily and weekly analysis and small size gap ratio as 3.55 has also given significant positive returns to the shareholders in both analyses. Thus, no specific relationship could be established between the size gap ratio and post announcement returns to the shareholders.

**6.3. NPA's of the target bank.** The asset quality of the target banks is expected to have an important bearing on the impact of merger for the bidder bank. The asset quality may be reflected in the level of NPA's in the bank. The higher is the NPA's ratio, the greater is the credit risk the bank is taking by acquiring the target bank. Ratio of net NPA's to total advances has been examined for the purpose of ascertaining the level of NPA's and a ratio up to 10% has been considered as low NPA and the remaining were considered as high NPA. As may be observed from the table above, two of the target banks show high NPA's, out of which one merger is giving significant positive returns and the other merger is giving significant negative returns. Hence, no relation could be established between the level of NPA's and impact of merger announcements.

**6.4. Financial health of the target bank.** Financial health of the target bank may influence the perception of the investor regarding the merger. Financial health of the target bank is reflected by various financial ratios namely, ROE, ROA, ratio of net interest margin to total assets, ratio of non interest income to total assets, profit per employee and ratio of net NPA's to total advances. For the purpose of the study, target bank which has all ratios as positive is categorized as financially non-stressed bank other-

wise it is categorized as financially stressed bank. As may be observed from the above table, mergers giving positive returns to the shareholders include stressed as well as non-stressed target banks. Thus, no specific pattern could be observed that could establish any relationship between the financial health of the target bank and impact of merger announcement.

Further, an attempt was made to find out if the pattern of these characteristics has any relationship with impact of merger announcement. Among the mergers giving significant positive returns to the shareholders, a variety of patterns like MSGLNSTR, FBGHNSTR, FBGLSTR, FSGLSTR and MBGLSTR could be observed. Thus, no single pattern could be identified being associated with mergers having significant positive impact on returns to the bidder bank. Similarly, no single pattern could be associated with mergers giving significant negative returns to the shareholders of the bidder bank.

Thus, no specific pattern of bank characteristics like type of the merger, size gap ratio of the banks, level of NPA's and financial health of the banks could be associated with significantly positive or negative impact of merger announcement.

## 7. Impact on stock returns during pre-announcement period

Generally, one would expect absence of any abnormal returns prior to the announcement of merger. However, given the kind of market conditions in India, some information (incomplete and unreliable) may be leaked prior to the formal announcement of merger. This is particularly true in case of facilitated mergers because the proposal has to pass through various channels before it is finalized for announcement and implementation. In order to examine whether there is significant impact of such potential leakages of information on the share prices, the  $SCAR_i$  was calculated for pre-announcement period from -1 to -40 days. Table 4 presents the values of daily and weekly  $CAR_i$  and  $SCAR_i$  computed during the pre-announcement period for the sample banks.

Table 4.  $CAR_i$  and  $SCAR_i$  of the bidder banks

Name of the bidder bank (target)	$CAR_i$		$SCAR_i$	
	Daily	Weekly	Daily	Weekly
Indian Overseas Bank (Bharat Overseas Bank)	0.07	-0.79	1.87	-3.83*
Bank of Baroda (Banaras State Bank)	0.05	-0.07	1.98*	-0.87
Bank of Baroda (South Gujarat Bank)	-0.02	-0.02	-0.44	-0.06
HDFC Bank (Centurion Bank Of Punjab)	0.004	0.33	0.13	3.68*
Centurion Bank of Punjab (Bank Of Punjab)	-0.13	0.16	-4.18*	0.50
Centurion Bank (Lord Krishna Bank)	0.21	-0.72	6.69*	-3.92*
Oriental Bank of Commerce (Global Trust Bank)	0.03	-1.59	0.89	-4.35*
ICICI Bank (Sangli Bank)	0.095	0.19	4.48*	1.08



Table 4 (cont.).  $CAR_i$  and  $SCAR_i$  of the bidder banks

Name of the bidder bank (target)	$CAR_i$		$SCAR_i$	
	Daily	Weekly	Daily	Weekly
Federal Bank (Ganesh Bank Of Kurundwad)	0.09	-0.65	3.26*	-4.79*
Punjab National Bank (Nedungadi Bank)	-0.17	N.A	-8.2*	N.A
ICICI Bank (Bank Of Madura)	0.41	-0.44	5.63*	-3.15*
HDFC (Times Bank)	-0.2	0.02	-5.05*	0.24
IDBI Bank (United Western Bank)	0.26	-0.19	11.34*	-0.32
Total no of cases			13	12
Not significant			4 (30%)	6 (50%)
Significantly positive			6 (50%)	1 (10%)
Significantly negative			3 (20%)	5 (40%)

Notes: \* Significant at the 5% level. N.A – weekly data for the complete estimation window was not available.

The above table shows that  $SCAR_i$  is significant in nine out of thirteen cases in daily returns and in six out of twelve cases in weekly returns. This indicates that market had started building some expectations about the merger much before the announcement has been made public. This is an issue of real concern for the policy makers as it indicates the role of insiders in the market and possibility of information leakage in the market much before the announcement of a proposed merger has been made public.

## 8. Relation between $SCAR_i$ and $SCAR_j$

Significant  $SCAR_i$  in some of the mergers does indicate the possibility of leakage or rumor in the market. One would expect the impact of merger announcement to be less significant in case there has already been a significant impact on share prices during the pre-announcement period and the information during post-announcement period is not significantly different from the one leaked during the pre-announcement period. It may be interesting to examine the relationship between pre-merger and post-merger  $SCAR$ .

Table 5. Relationship between daily  $SCAR_i$  and  $SCAR_j$ 

Name of the bidder bank (target)	Direction of $SCAR_i$	Direction of $SCAR_j$
Bank of Baroda (Banaras State Bank)	Significantly positive	Significantly positive
Centurion Bank (Lord Krishna Bank)	Significantly positive	Significantly negative
ICICI Bank (Sangli Bank)	Significantly positive	Insignificant
Federal Bank (Ganesh Bank of Kurundwad)	Significantly positive	Insignificant
ICICI Bank (Bank of Madura)	Significantly positive	Significantly positive
IDBI Bank (United Western Bank)	Significantly positive	Significantly positive
Centurion Bank of Punjab (Bank Of Punjab)	Significantly negative	Significantly negative
Punjab National Bank (Nedungadi Bank)	Significantly negative	Significantly positive
HDFC Bank (Times Bank)	Significantly negative	Significantly positive
Indian Overseas Bank (Bharat Overseas Bank)	Insignificant	Significantly negative
Bank of Baroda (South Gujarat Bank)	Insignificant	Insignificant
HDFC Bank (Centurion Bank of Punjab)	Insignificant	Insignificant
Oriental Bank of Commerce (Global Trust Bank)	Insignificant	Significantly negative

Table 6. Relationship between weekly  $SCAR_i$  and  $SCAR_j$ 

Name of the bidder bank (target)	Direction of $SCAR_i$	Direction of $SCAR_j$
HDFC Bank (Centurion Bank Of Punjab)	Significantly positive	Insignificant
Indian Overseas Bank (Bharat Overseas Bank)	Significantly negative	Insignificant
Centurion Bank (Lord Krishna Bank)	Significantly negative	Significantly negative
Oriental Bank of Commerce (Global Trust Bank)	Significantly negative	Significantly negative
Federal Bank (Ganesh Bank of Kurundwad)	Significantly negative	Significantly negative
ICICI Bank (Bank of Madura)	Significantly negative	Insignificant
Bank of Baroda (Banaras State Bank)	Insignificant	Significantly positive
Bank of Baroda (South Gujarat Bank)	Insignificant	Insignificant
Centurion Bank of Punjab (Bank of Punjab)	Insignificant	Significantly negative
HDFC Bank (Times Bank)	Insignificant	Significantly positive

Table 6 (cont.). Relationship between weekly  $SCAR_i$  and  $SCAR_j$ 

Name of the bidder bank (target)	Direction of $SCAR_i$	Direction of $SCAR_j$
ICICI Bank (Sangli Bank)	Insignificant	Significantly positive
IDBI Bank (United Western Bank)	Insignificant	Insignificant

Notes: Tables 5 and 6 show daily and weekly  $SCAR_i$  and  $SCAR_j$  with respect to all the sample banks.

As can be seen from the above tables,  $SCAR_i$  is significant in nine mergers out of thirteen in daily analysis and six out of twelve cases in weekly analysis. These mergers were further analyzed to see whether significant change in abnormal returns was due to leakage or rumor in the market. Assuming that the change in direction is reflection of rumor, where in case the change was significant in the pre-announcement period. It was found that in case of daily share prices, only three mergers show a change in the direction, and in weekly analysis, none of the mergers show a change in the direction. This may imply that probability of rumor causing significant  $SCAR_i$  is very low both in daily and weekly analysis. Thus, this leads us to the conclusion that significant  $SCAR_i$  reflects more of leakage of information than the presence of rumor.

Interestingly, all the four mergers during the period of 1999-2003, had a positive impact on the share prices as their  $SCAR_j$  was significantly positive. However, in the case of mergers during the period of 2004-2008, only one out of nine mergers had positive impact on the share prices while four mergers had negative impact and insignificant for the rest of the mergers. This would indicate that general economic and industry specific conditions may play a significant role in determining the impact of merger announcement on share prices. In a way, the context in which the study has been conducted may significantly influence the results of the study of this kind.

### 9. Comparative analysis of results with other studies

Empirical evidence in the U.S. and Europe differ in terms of impact of merger announcement on share prices. While the U.S. experience shows negative returns to the shareholders of the bidder banks, positive returns to the shareholders of the target banks and combined positive returns to the shareholders of the bidder and target banks. Studies by Baradwaj, Fraser and Furtado (1990), Cornett and Tehranian (1992), Hannan and Wolkan (1989), Hawawini and Swary (1990), Neely (1987), Trifts and Scanlon (1987), Siems (1996), Houston and Ryangert (1994) and Becher (2000) report a positive reaction in the stock prices of target banks and a negative reaction in the stock prices of bidding banks to merger announcements.

However, most of the studies in Europe report positive returns to the shareholders of the bidder and

target banks both. Cybo-Ottone (2000) shows significant positive market revaluation in case of bidder banks. Campa and Hernando (2006) also reports positive returns to shareholders of Target Company and zero returns to bidder banks.

Our study indicates a mix of positive and negative impact on share prices. None of selected bank characteristic could explain the direction of impact. This would imply that there might be some other characteristics or circumstances that may be critical in influencing the impact of merger announcements on share prices. Such factors may include availability of detailed information regarding the merger proposal, macro-economic variables, and industry specific expectation and investor sentiments for the banking sector prevalent at the time of merger. So, it can be concluded that in India, the market reaction is similar to the one noticed in the U.S. markets and not the one observed in European markets. Incidentally, our findings are in conformity with the findings of an earlier study by Jayadev and Rudrasena regarding the bank mergers in India, though the present study is more comprehensive.

Interestingly, another study of bank mergers in India by Anand and Singh (2008) suggests value creation for all the bidder banks. The difference may perhaps be explained by difference in the size of the sample and period of the study. The results of their study are based on the analysis of data relating to only five banks, during the period of 1999-2005.

### Conclusion

Thus, to sum up, there are five mergers (more than 40% of cases) where daily data shows results different from that suggested by weekly data. Therefore, this implies that the result could be influenced by the fact whether the stock price data was taken on daily basis or weekly basis. Also, the merger announcement had a mixed impact on the returns to the shareholders of the bidder banks. In case of daily returns, five banks had significantly positive returns to the shareholders; four banks had significantly negative returns and four banks showed no significant results. However, in case of weekly returns, three banks had significantly positive returns, four banks had significantly negative returns and four banks had no significant returns. Further, none of the bank characteristics such as the type of merger, size gap ratio of bidder and target banks, NPA's of the target banks and the financial health of

the target bank were found to be influencing the impact of merger announcement on share prices. Interestingly, greater proportion of bank mergers during the period of 1999-2003 exhibited significant abnormal returns as compared to the bank mergers which took place after 2003. This would indicate that gener-

al economic and industry specific conditions may play a significant role in determining the impact of merger announcement on share prices. In a way, the context in which the study has been conducted may significantly influence the results of the study of this kind.

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