



## MERGER AND AQUISITION IN INDIAN BANKING INDUSTRY

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### Abstract

*The role of Indian Banks can be distinctly identified in the pre and post liberalization period. The pre liberalization phase is that of development of the banking system. In the post liberalization period, there has been an expansion of products and services. One important change has been to bring about consolidation through mergers and acquisitions. The effect of merger is expected to bring about synergy in operations and financial aspects. To facilitate consolidation and bring about emerging strong banks, guidelines have been framed so that the weak banks can exit and merger / amalgamation can be encouraged. Mergers of banks in India can be either through voluntary or compulsory procedure.*

*Basel II and III norms require larger banks to take advantage of incorporation of norms relating to creation of sophisticated database and maintenance process. The successful merger of ICICI Bank and Bank of Mathura, HDFC Bank and Times Bank, South Gujarat Local Area Bank Ltd. with Bank of Baroda and Ganesh Bank of Karandwad and Federal Bank Ltd., shows that India is slowly moving from large number of small banks to small number of large banks.*

*The aim of this paper is to do the comparative analysis of impact of mergers and acquisition on liquidity, profitability, efficiency and capital structure of acquiring banks in India. The researcher select six cases of merger occurred between 2000 and 2006 in the Indian Banking Sector. Ratios analysis is used to examine the pre and post merger financial performance of acquiring Banks. To test the statistical significance applying paired sample t-test. The result indicates that M&A's are not created difference in the financial performance of the acquiring Banks.*

**Keywords:** Merger and Acquisition, Indian Banking Industry, Liquidity, Efficiency, Profitability, Capital Structure.

### Introduction

India embarked on a strategy of economic reforms in the wake of a serious balance of payment crisis in 1991 (Mohan, Rakesh 2005). In Indian banking sector, the policy makers adopted a cautious approach for introducing reform measures on the recommendation of Narishmam Committee I (1991), Narishmam Committee II (1997) and Verma Committee (1999). The main objective of the banking sector reforms was to improve the efficiency of banks and to promote a diversified and competitive financial system. One of the outcomes of such reforms was the consolidation of the banking industry through mergers and acquisitions. Consolidation is driven by apparent advantages of scale-economies, geographical diversification as well as product diversification (which helps to reduce risk), lower costs through branch and staff rationalization, cross-border expansion and market share concentration. The new Basel II and Basel III norms have also led banks to consider M&As.



With the need for additional capital requirement and costly database creation and maintenance processes, larger banks would have a relative advantage with the incorporation of the norms. However, if compatibility issues are not addressed properly, mergers could pose problems, such as customer attrition, implementation costs and staff issues. While consolidating one should make sure that the size of the banks should neither be too small to lack scale efficiency nor too large to cause too-big-to-fail and market dominance concerns.

Historically, mergers and acquisitions activity started way back in 1920 when the Imperial Bank of India was born, i.e. when three presidency banks (Bank of Bengal, Bank of Bombay and Bank of Madras) were reorganized to form a single banking entity, which was subsequently known as State Bank of India. Several M&A activities among banking institutions were later reported during this pre independence period. In 1949, the Banking Regulation Act which empowered the Reserve Bank of India (RBI), India's central bank, to regulate and control banking institutions in India was enacted. This enactment has provided a sign of relief to investors and improved depositors' confidence in Indian banking system. In 1960s, several private banks were found to be operating on a very low capital. As a result, several banks failed and this has led to loss of confidence of the public towards the banking system as a whole. To restore confidence in the banking system and thus to avoid losses to depositors, 45 banks were pushed into mergers. Most of these mergers were between failed private banks and public sector banks. Merger of the New Bank of India and The Punjab National Bank in 1993 was the only merger between nationalized Banks. State Bank of India had kick-started the process of consolidating its associate banks almost seven years ago. In 2008 and 2010, India's largest bank took over State Bank of Saurashtra and State Bank of Indore. Currently, it has five associate banks. However, in some of the cases both the banks were private sector banks. Since the onset of reforms in 1990, there have been 27 bank amalgamations. Recently, on 13th August 2010, the process of M&As 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. In the last fifteen 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. It would be observed that 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.

Indian banking sector has witnessed two types of mergers i.e. forced and voluntary mergers. The main objective of RBI to initiate forced merger is to protect the interest of depositors of the weak bank. When a bank has shown symptoms of sickness such as huge NPAs and substantial erosion of net worth, RBI has intervened and merged the weak bank with a strong bank. The second type of mergers is voluntary mergers with the motivation of market dynamics such as increasing size, diversification of portfolio which reduces risk, exposure to new geographical markets and improved treasury performance as the cost of funds would reduce (hence, improve spread) as it would have a better credit rating. A bank would also be able to leverage scale and improve its trading income. In all these cases acquirer banks have gained the advantage of branch network and customer clientele of the acquired banks. As these mergers are voluntary in nature, both bidder and target banks must have perceived benefit out of the mergers. There are twenty one cases of bank mergers during the period 1993 to 2006. Out of this, five mergers are voluntary mergers. These are



merger/amalgamation of private sector bank with another private sector bank. Another two cases are convergence of financial institutions into a commercial bank.

Recently in 2015, a Finance Ministry-appointed panel has also recommended that small public sector banks with less than Rs. 2 lakh crore assets (loans plus investments) include Andhra Bank, Bank of Maharashtra, Dena Bank, Punjab & Sind Bank, Vijaya Bank, and United Bank of India, should be readied for merger with five large PSBs. The large PSBs, with the capability to acquire include Bank of Baroda, Bank of India, Canara Bank, Punjab National Bank and Union Bank of India. However, officials cautioned that mergers and acquisitions can be brought about only if trade unions agreed to go along as agitations and strikes might affect operations.

### **Literature Review**

Several studies have been conducted to examine the efficiency of banks. Berger and Humphrey (1997) in their study provide an extensive review of studies on the efficiency of banking sector. They pointed out that, majority of studies focused on the banking markets of well-developed countries with particular emphasis on the US market.

Kuriakose Sony et al., (2009), focused on the valuation practices and adequacy of swap ratio fixed in voluntary amalgamation in the Indian Banking Sector and used swap ratio for valuation of banks. Schiereck Dirk et al., (2009), explained the relationship between bank reputation after Merger and Acquisitions and its effects on shareholder's wealth. It is found in the study of Bhaskar A Uday et al., (2009) that Banking sector witness of Merger activities in India when banks facing the problem of losing old customer and failed to attract the new customers. Kuriakose Sony & Gireesh Kumar G. S (2010) in their paper assessed the strategic and financial similarities of merged Banks, and relevant financial variables of respective Banks were considered to assess their relatedness. Joshua Kemal Mohammad Usman (2011) finds the post merger profitability of the Royal Bank of Scotland and from the Accounting Ratio analysis it is proved that RBS merger proves to be a failure in Banking Industry. Devarajappa S.(2012) in his study finds that after mergers financial performance of banks in terms of return on equity, gross profit ratio and net profit ratio have improved. The studies that have been conducted to analyze the impact of mergers and acquisitions on bank performance can be classified as ex-ante studies and ex-post studies. The literature suggests that there is mixed empirical evidence regarding the impact of mergers and acquisitions on the efficiency of banks.

### **Objective and Hypothesis**

The objective of the present paper is to examine the performance of banks that have gone through mergers in India, in the post-reforms period, and to see the impact of mergers on the financial performance of merging banks.



To test the objectives mentioned above, the following hypotheses are formulated.

- (1)  $H_L$ : Liquidity position of the bank has not improved after the merger.
- (2)  $H_E$ : Efficiency position of the bank has not improved after the merger.
- (3)  $H_P$ : Profitability position of the bank has not improved after the merger.
- (4)  $H_C$ : Capital structure position of the bank has not improved after the merger.

### Sample and Methodology

The sample of six banks from the period of 2000 to 2006 is taken. Some banks have been excluded from the sample due to non availability of data. Such banks are also excluded which have acquired their own subsidiary branches.

**List of the banks under study are:**

Years	Target Bank	Acquirer Bank	Motive of Merger	Type of Merger
2000	Times Bank Ltd.	HDFC Bank Ltd.	To achieve scale and scope economies	Voluntary merger
2001	Bank of Madura Ltd.	ICICI Bank	To achieve scale and scope economies	Voluntary merger
2004	South Gujarat Local Area Bank Ltd.	Bank of Baroda	Restructuring of weak banks	Forced merger
2004	Global Trust Bank Ltd.	Oriental Bank of Commerce	Restructuring of weak banks	Forced merger
2006	United Western Bank Ltd.	IDBI Bank Ltd.	Restructuring of weak banks	Forced merger
2006	Ganesh Bank of Karandwad	Federal Bank Ltd.	Restructuring of weak banks	Forced merger

Data on financial ratios for up to three years prior and three years after the acquisition period for each acquiring bank in the sample was extracted from annual report of banks. Pre-merger and post-merger financial ratios were estimated and the averages computed for the entire set of sample banks, which have gone through mergers after the post-reform period. Average pre-merger and post-merger financial performance ratios were compared to see whether there was any statistically significant change in financial performance due to mergers, using “paired two sample t- test” at confidence level of 0.05.



## ANALYSIS OF MERGER AND ACQUISITION IN BANKING SECTOR

### HOUSING DEVELOPMENT FINANCE CORPORATION BANK (HDFC)

#### Analysis of Liquidity Ratio

As would be seen from the table, the comparison of the pre and post merger liquidity ratios for HDFC bank showed that there was marginal decline in the mean liquidity current ratio (1.183% to 0.590%), during the pre and post-merger period. However, the decline was not statistically significant (t-statistic value of 1.547). In contrast, the mean acid test ratio had increased marginally from pre- to post-merger period (-3.197% to -2.540%), but the increase was not statistically significant (low t-statistic value of -0.932). The findings suggested that for the HDFC bank, merger had caused not improvement in liquidity ratios. Therefore, we accept the hypotheses  $H_C$ .

#### Analysis of Efficiency Test Ratio

The results showed that the mean assets turnover ratio had declined during the post-merger period (0.105% to 0.087%) and the decline was statistically validated with a “t” value of 7.150. There was a marginally increase in fixed assets turnover ratio (2.693% to 5.065%) and the increase was statistically validated (t-value of -4.565). Likewise, mean current assets turnover ratio had increased marginally (1.345% to 1.448%) but increase was not statistically significant (-0.476).

The mean advances turnover ratio showed a decline during the post-merger period (0.338% to 0.274%), but the decline was not statistically significant (t-value of 2.70).

There was a rise in mean equity turnover ratio (1.005% to 1.248%), but the increase was not statistically significant (t-value of -0.636). The mean cash turnover ratio had declined during the post-merger period (0.706% to 0.641%) and the decline was not statistically validated (t-value of 1.031).

The above findings suggest that for HDFC Bank merger had caused a marginal but statistically insignificant decline in efficiency ratios in terms of advances turnover ratio and cash turnover ratio. Based on the results, the hypotheses  $H_E$  is being accepted.

#### Analysis of Profitability Ratios:

The results showed that the mean return on assets had marginally declined during the post-merger period (8.403% to 6.307%) and the decline was statistically significant, the t-value being 6.786. Likewise, the mean return on equity (21.02% to 18.524%) and mean advances/deposits ratio (0.438% to 0.436%) had also declined during the post-merger period; the declines were not statistically significant (t-values of 0.560 and 0.060 respectively). Thus, merger had caused a marginal but statistically insignificant decline in profitability performance in terms of return on equity and advances/deposits ratio. Based on the results, the hypotheses  $H_P$  is being accepted.

#### Analysis of Capital Structure Ratios

The mean equity capital/total assets ratio had marginally declined during post-merger period (0.076% to 0.012%) and the decline was statistically significant with the t-value being 3.794.



However, the mean interest coverage ratio showed a significant decline during the post merger period (0.671% to 0.431%) but the decline was not statistically validated with a “t” value of 2.281. The findings suggested that, merger had not yielded any improvement in capital structure performance.

From the above results, we conclude that after the merger, the performance of HDFC Bank has not improved. Even, merger has not improved the liquidity, efficiency and profitability position for HDFC Bank. The main reasons of the declining the performance of banks were the non satisfaction of shareholders and differences in culture.

**Mean pre and post –merger ratio for merging bank**

	HDFC Bank				ICICI Bank			
	Pre-Merger (3-Year average)	Post-merger (3-Year average)	t-statistic (0.05 significance)	t-critical (one tail)	Pre-Merger (3-Year average)	Post-Merger (3-year average)	t-statistic (0.05 significance)	t-critical (one tail)
<b>Liquidity Ratios</b>								
Liquidity current ratio	1.183	0.590	1.547	2.920	1.183	0.590	1.547	2.920
Acid test ratio	-3.197	-2.540	-0.932	-do-	-3.197	-2.540	-0.932	-do-
<b>Efficiency Test Ratio</b>								
Assets turnover ratio	0.105	0.087	7.150	-do-	0.105	0.087	7.150	-do-
Fixed assets turnover ratio	2.693	5.065	-4.565	-do-	2.693	5.065	-4.565	-do-
Current assets turnover ratio	1.345	1.448	-0.476	-do-	1.345	1.448	-0.476	-do-
Advances turnover ratio	0.338	0.274	2.70	-do-	0.338	0.274	2.70	-do-
Equity turnover ratio	1.055	1.248	-0.636	-do-	1.055	1.248	-0.636	-do-
Cash turnover ratio	0.706	0.641	1.031	-do-	0.706	0.641	1.031	-do-
<b>Profitability Ratios</b>								
Return on assets	8.403	6.307	6.786	-do-	8.403	6.307	6.786	-do-





Return on equity	21.02	18.524	0.560	-do-	21.02	18.524	0.560	-do-
Advances/deposits ratio	0.438	0.436	0.06	-do-	0.438	0.436	0.06	-do-
<b>Capital Structure Ratios</b>								
Equity capital/total assets	0.076	0.012	3.794	-do-	0.076	0.012	3.794	-do-
Interest coverage ratio	0.671	0.431	2.281	-do-	0.671	0.431	2.281	-do-

## INDUSTRIAL CREDIT AND INVESTMENT CORPORATION OF INDIA

### (ICICI BANK)

Comparative average pre-and post-merger performance ratios and results from tests for statistical significance for ICICI Bank merger have been summarized in the above table-1.

#### Analysis of Liquidity Ratios

The comparison of the mean pre- and post- merger liquidity ratios showed that there was marginal decrease in the mean liquidity current ratio (2.002% to 0.232%) and the mean acid test ratio (1.28% to -2.90%) during the post merger period and the declines were statistically significant (t-values of 10.380, 24.879 respectively). The merger had caused a marginal but statistically significant decline in liquidity position, in terms of liquidity current ratio and acid test ratio.

#### Analysis of Efficiency Test Ratio

The results showed that the mean assets turnover ratio had marginally declined during post-merger period (0.133% to 0.079%), but the decline was not statistically significant, confirmed by the t- value of 2.051. In contrast, the mean fixed assets turnover ratio (1.854% to 2.225%) and mean current assets turnover ratio (1.13% to 2.104%) had increased during the post-merger period but the increases were not statistically significant (t- values of -0.482, -2.510 respectively)

The mean advances turnover ratio had marginally declined during post merger period (3.253% to 0.867%) but the t- value of 2.454 suggested that the difference was not statistically significant. The mean equity turnover ratio showed an increase during the post-merger period (0.695% to 1.264%) and the increase was statistically validated (t-value of -26.421). However, the mean cash turnover ratio had also increased (0.362% to 1.191%) during the post-merger period, but the increase was not statistically significant confirmed by the t- value of -1.597.



The above results suggested that merger has caused an increase in fixed assets turnover ratio, current assets turnover ratio and cash turnover ratio, but the increase was statistically insignificant. Based on the results, the hypothesis  $H_E$  is being accepted.

### **Analysis of Profitability Ratio**

The comparison of average pre and post merger profitability ratios for ICICI bank showed that there was marginal increase in the mean return on assets (3.749% to 5.641%), but the decline was not statistically significant (t- value of -0.941).

In contrast, the mean return on equity had declined marginally (16.177% to 13.352%) in the post-merger period, but the decline was not statistically significant (t-value of 0.385). The mean advances/deposits ratio showed a significant rise after the merger (0.382% to 1.164%), as suggested by the “t” value of -5.597.

### **Analysis of Capital Structure Position**

The results showed that mean equity capital/total assets ratio had marginally declined during the post-merger period (0.032% to 0.09%) and the decline was statistically validated (t-value of 7.530). The mean interest coverage ratio showed an insignificant decline after the merger (0.227% to 0.185%), as suggested by the “t” value of 0.720. The results indicated that capital structure position of the bank has not improved after the merger.

After the comparison of mean pre- and post-merger ratios we have reached at the conclusion that most of the ratios had been increased during the post merger but the increases were not statistically significant. What are the reasons that after the voluntary acquisition of bank of Madura (BOM) with ICICI bank, the performance of the banks has not increased significantly?

ICICI bank increased its size by acquiring Bank of Madura (BOM) and reached the position of a large size bank among the private sector banks way back in 1999. The announcement of this merger there was a significant rise in abnormal returns leading to increase in value for shareholders of BOM, but the shareholders of ICICI bank did not achieve any gains. This is not surprising because shareholders of a troubled bank start to gain from a merger with a strong bank where as the same may not be good news from the perspective of the strong acquiring bank. Since BOM had comparatively more NPAs than ICICI bank, the capital adequacy ratio of the merged entity was lower (from 19% to about 17%). The two banks also had a cultural misfit, with BOM having a trade union system and ICICI bank’s workers being young and upwardly mobile unlike those for Bank of Madura. There were technological issues as well as ICICI bank used 2000 software, which were very different from BOM’s ISBS software. With the manual interpretations and procedure and the lack of awareness of the technology utilization in BOM, there were hindrances in the merged entity. Due to these reasons, the performance of the ICICI bank has not been improved after the merger.





## BANK OF BARODA

### Analysis of Liquidity Ratios

As would be seen from table below, the comparison of the pre-merger and post-merger liquidity ratios for the Bank of Baroda showed that there was a decline in the mean liquidity current ratio (0.709% to 0.559%), but the decline was not statistically significant (t-statistic value of 1.045). On the other hand, there was a decline in the mean acid test ratio (-5.921% to -7.950%), but here decline was statistically significant (t-statistic value 4.570)

The results suggested that liquidity position of Bank of Baroda had declined insignificantly in terms of current ratio and significantly in terms of acid test ratio.

### Analysis of Efficiency Test Ratio

The comparison of the pre- and post- merger efficiency ratios showed that there was a marginal decline in the mean assets turnover ratio (0.099% to 0.076%) and mean fixed assets turnover ratio (10.250% to 9.264%) during the pre and post- merger period. However, the declines are statistically significant (t-statistic values of 15.033 and 37.95). In contrast, there was an increase in the mean current assets turnover ratio before and after the merger (2.112% to 2.343%) but the increase was not statistically significant (t-value of -0.394).

The mean advances turnover ratio (0.218% to 0.148%) and mean equity turnover ratio (1.816% to 1.222%) showed a significant decline, and the decline was statistically significant, as confirmed by the t-values of 8.562 and 6.951. However, the mean cash turnover ratio (0.797% to 0.680%) had declined in the post- merger period, but the decline was not statistically significant (t-value of 0.485). After the comparison of the mean pre- and post-merger ratios for Bank of Baroda, we conclude that most of the ratios had declined after the merger and the decline are statistically significant. Based on the results, the efficiency position of the bank has not been improved after the merger.

### Analysis of Profitability Ratios

Comparison of the pre and post merger profitability ratios for Bank of Baroda showed that there was a decline in the mean return on assets (6.797% to 4.57%) during the post merger period, and the decline was statistically significant (t-value of 8.069). There was marginal decline in the return on equity ratio (13.353% to 11.480%) during the post-merger period, but the decline was not statistically significant (t-value of 0.641). In contrast, mean advances/deposits ratio showed a marginal rise (0.528% to 0.614%) during the post-merger period, but the increase was statistically insignificant (0.528% to 0.614%) confirmed by the t-value of -1.114.

The above results suggested that merger had caused insignificant decline in return on equity and statistically insignificant rise in advances/deposits ratio. Therefore, merger had not yielded any improvement in profitability ratios.



### **Analysis of Capital Structure Ratios**

Comparison of pre-and post-merger capital structure ratios for Bank of Baroda showed that there was marginal decline in the mean equity capital/total assets ratio (0.004%to 0.003%), during the pre- and post- merger period and the decline was statistically significant, as confirmed by the t-value of 3.311. Mean interest coverage ratio (0.203% to 0.785%) had increased in the post-merger period but the increase was not statistically significant (t-value of -1.634).

The results indicated that merger has caused a decline in equity capital/total assets and decline was statistically significant. In another case, merger has caused an increase in interest coverage ratio, but increase was statistically insignificant. Therefore we accept that the capital structure position has not improved after the merger.

From the above results, we conclude that after the merger the performance of Bank of Baroda has not improved; even merger has not improved the liquidity, efficiency and profitability position for Bank of Baroda. This type of merger may be classified as forced merger which was taken for restructuring of weak bank (South Gujarat Local Area Bank Ltd.).

This forced merger may be protecting the interest of depositors, but shareholders of both bidder and target banks do not perceive the benefits of merger. Both bidder and target bank’s market value of equity has been reduced on the immediate announcement of merger. In case of this forced merger, the share prices of the acquired bank (BOB) have not shown any significant increase even after a substantial time gap from the merger. Because of these reasons, BOB has not shown any significant improvement in any single ratio.

### **Mean Pre-and Post-merger ratios for merging bank**

	Bank of Baroda				Oriental Bank of Commerce			
	Pre-Merger (3-Year average)	Post-merger (3-Year average)	t-statistic (0.05 significance)	t-critical (one tail)	Pre-Merger (3-Year average)	Post-Merger (3-year average)	t-statistic (0.05 significance)	t-critical (one tail)
<b>Liquidity Ratios</b>								
Liquidity Current ratio	2.097	1.940	2.029	2.920	0.709	0.559	1.045	2.920
Acid test ratio	-10.997	-9.817	-0.454	-do-	-5.921	-7.950	4.570	-do-
<b>Efficiency Ratios</b>								
Assets turnover ratio	0.113	0.079	14.078	-do-	0.099	0.076	15.033	-do-



Fixed assets turnover ratio	25.074	12.921	21.739	-do-	10.25	9.264	37.950	-do-
Current assets turnover ratio	1.691	0.957	4.315	-do-	2.112	2.343	-0.394	-do-
Advances turnover ratio	0.259	0.146	46.421	-do-	0.218	0.148	8.562	-do-
Equity turnover ratio	2.005	1.073	5.496	-do-	1.816	1.222	6.951	-do-
Cash turnover ratio	1.255	0.733	3.229	-do-	0.797	0.680	0.485	-do-
<b>Profitability Ratios</b>								
Return on assets	8.267	5.37	11.022	-do-	6.797	4.57	8.069	-do-
Return on Equity	18.183	14.323	10.954	-do-	13.353	11.48	0.641	-do-
Advances/deposit s ratio	0.491	0.629	-4.815	-do-	0.528	0.614	-1.114	-do-
<b>Capital Structure Ratios</b>								
Equity capital/total assets	0.006	0.004	7.407	-do-	0.004	0.003	3.311	-do-
Interest coverage ratio	0.257	0.268	-0.153	-do-	0.203	0.785	-1.634	-do-

**Oriental Bank of Commerce**

Comparative mean pre- and post-merger ratios and results from tests for statistical significance for OBC merger have been summarized in table above.

**Analysis of Liquidity Ratios**

The comparison of the pre- and post- merger liquidity ratios for the OBC Bank showed that there was a marginal decline in the mean liquidity current ratio (2.097% to 1.940%), during the pre- and post-merger period. However, the decline was not statistically significant (t-value of 2.029). There was an increase in the mean acid test ratio before and after the merger (-10.997% to -9.817%) during the post-merger but the increase was not statistically significant (t-value of -0.454). The above results suggested that merger of Global Trust Bank Ltd. with OBC bank have caused a decline in liquidity performance of the merging Bank. Based on the results, the hypotheses  $H_L$  is being accepted.



### **Analysis of Efficiency Test Ratio**

Comparison of the pre- and post-merger efficiency ratios for the OBC showed that there was a marginal decrease in the mean assets turnover ratio (0.113% to 0.079%), mean fixed assets turnover ratio (25.074% to 12.921%) and mean current assets turnover ratio (1.691% to 0.957%) during the pre- and post-merger period and the declines were statistically significant (t-values of 14.078, 21.739 and 4.315 respectively). Similarly, the mean advances turnover ratio (0.259% to 0.46%), mean equity turnover ratio (2.005% to 1.073%) and mean cash turnover ratio (1.255% to 0.733%) had also declined during the post merger period and the declines were statistically validated as confirmed by t-value of 46.421, 5.496 and 3.229 respectively.

The results suggested that merger had caused significant decline in efficiency performance for OBC Bank.

### **Analysis of Profitability Ratios**

The results showed that mean return on assets had declined marginally (8.267% to 5.37%) during the post-merger period and the decline was statistically validated (t-value of 11.022). Similarly, the mean return on equity had declined (18.183% to 14.323%) from pre to post merger and decline was statistically significant, as confirmed by t-value of 10.954. There was an increase in mean advances/deposits ratio (0.491% to 0.629%) and the increase was statistically significant (t-value of -4.815).

From the above results the merger had caused significant declined in profitability performance for OBC in terms of return on assets and return on equity.

### **Analysis of Capital Structure Position**

Comparison of the pre- and post-merger capital structure ratios for the OBC, which acquired the Global Trust Bank Ltd. showed that mean equity capital/total assets ratio had declined following merger (0.006% to 0.004%) and the decline was statistically significant (t-value of 7.407). In contrast, the interest coverage ratio increase (0.25% to 0.268%) during the post-merger period and the increase were not statistically significant, as confirmed by the t-value of -0.153.

Based on the results, merger had caused a marginal but significant decline in equity capital/total assets and insignificant increase in interest coverage ratio. Therefore, the capital structure position of the OBC bank has not improved after the merger.

From the above results we have concluded that consolidation may be seen as scope and product-mix efficiency. Banks may merge in order to produce a broader set of outputs than what each bank produces individually or to jointly achieve a product- mix at lower cost than before. But in case of merger of the Global Trust Bank Ltd. with Oriental Bank of Commerce this was not true. Here the most of the ratios had showed significant declined after the merger



and this merger was the forced merger which has taken for restructuring of the weak Global Trust Bank Ltd.

The shareholder's wealth of the bidder bank has been declined from 8.34% to 16.77% in the window period following the merger, neither OBC bank nor the GTB have gained on the announced of merger. Further, the shareholder of OBC bank has lost their wealth as the merger announcement is perceived as a negative signal. The share prices of the acquired bank has not shown any increase even after a substantial time gap from merger, because of the news of amalgamation with an another troubled bank may not have been welcomed by the stock markets. Therefore, merger had not yielded any improvement in the performance for OBC bank.

### **INDUSTRIAL DEVELOPMENT BANK OF INDIA (IDBI)**

Comparative mean pre- and post merger ratios and results from tests for statistical significance for IDBI Bank have been summarized below:-

#### **Analysis of Liquidity Ratios**

The results showed that there was an increase in mean liquidity current ratio (0.774% to 1.091%) during the post merger period but the increase was not statistically significant (low t-value of -0.604). In contrast, the mean acid test ratio showed a decline during the post-merger period (-6.455% to -12.057%) but the decline was not statistically validated (low t-value of 1.483).

The above finding suggested that merger had caused no improvement in liquidity position. Based on the results, the hypotheses  $H_L$  is being accepted.

#### **Analysis of Efficiency Test Ratios**

The comparison between the mean pre- and post-merger efficiency ratios for IDBI Bank showed that mean assets turnover ratio had increased (0.07% to 0.074%) but increase was not statistically validated (low t-value of -0.209). There was decline in mean fixed assets turnover ratio (4.875% to 3.581%) during the post-merger period, but the decrease was statistically insignificant (t-value of 1.912). There was a rise in mean current assets turnover ratio (1.304% to 1.439%) and the t-value of -4.251 suggested that the difference was statistically significant.

The mean advances turnover ratio had declined marginally (0.126% to 0.120%) from pre- to post-merger period, and the decline was not statistically validated (t-value of 0.165). Likewise, the mean equity turnover ratio (1.421% to 1.120%) and the mean cash turnover ratio (2.508% to 1.119%) had declined during the post merger period and again the declines were not statistically significant (t-values of 1.056 and 0.906 respectively)

The results suggested that merger had not yielded any improvement in efficiency performance for IDBI Bank. Based on the results, the hypotheses  $H_E$  is being accepted.



**Analysis of Profitability Ratios**

As would be seen from table, there was a decline in the mean return on assets (8.173% to 6.313%), during the pre- and post-merger period. However, the decline was not statistically significant (t-statistic value of 0.714). The mean return on equity had increased marginally (6.30% to 8.323%) but the increase was not statistically significant (t-value of -1.923). There was a marginally decline in mean advances/deposits ratio (7.395% to 1.162%) and the decline was statistically insignificant (2.911).

Based on the results, the hypotheses  $H_p$  is being accepted.

**Analysis of Capital Structure Ratios**

As would be seem from the table, that mean equity capital/total assets had marginally declined after merger (0.014% to 0.006) and the change was statistically significant (“t” value of 4.801). In contrast, the mean interest coverage ratio had marginally increased after merger (0.089% to 0.109%), but this was not statistically significant, as indicated by the t-value of -1.005. The results suggested that merger has not been improved the capital structure position of the bank after the merger.

After the analysis of mean pre- and post-merger ratios for IDBI bank, the results showed that most of the ratios had declined but decline was statistically insignificant and performance of IDBI bank has not improved after the merger.

The shareholders of the United Western Bank Ltd. have gained on the second day of merger announcement but there after no abnormal returns were found. The shareholders of bidder bank also have lost their market value of equity. We argue that merger of weak United Western Bank with strong IDBI bank essential for restructuring of banking system and a desirable step in consolidation of financial sector. However, in this forced merger the United Western Bank was identified for merger almost at the collapse of the Bank. Non satisfaction of the shareholders was the main reason for declining performance of IDBI Bank after the merger.

**Mean Pre –and Post-merger ratios for merging bank**

	IDBI Bank				Federal Bank			
	Pre-merger (3-Year average)	Post-merger (3-Year average)	t-statistic (0.05 significance)	t-critical (one-tail)	Pre – Merger (3-Year average)	Post-merger (3-Year average)	t-statistic (0.05 significance)	t-critical (One tail)
<b>Liquidity Ratios</b>								
Liquidity current ratio	0.774	1.091	-0.604	2.920	0.902	1.143	-2.168	2.920





Acid test ratio	-6.455	-12.057	1.483	-do-	-9.249	-10.563	3.152	-do-
<b>Efficiency Test Ratio</b>								
Assets turnover ratio	0.07	0.074	-0.209	2.920	8.151	12.483	-4.803	-do-
Fixed assets turnover ratio	4.875	3.581	1.912	-do-	0.098	0.090	0.647	-do-
Current assets turnover ratio	1.304	1.439	-4.251	-do-	2.109	1.558	3.840	-do-
Advances turnover ratio	0.126	0.120	0.165	-do-	0.191	0.155	1.385	-do-
Equity turnover ratio	1.421	1.120	1.056	-do-	2.270	1.009	8.298	-do-
Cash turnover ratio	2.508	1.119	0.906	-do-	1.185	1.028	0.679	-do-
<b>Profitability Ratios</b>								
Return on assets	8.173	6.313	0.714	-do-	6.344	6.548	-0.166	-do-
Return on equity	6.3	8.323	-1.923	-do-	17.763	13.480	1.165	-do-
Advances/deposits ratio	7.395	1.162	2.911	-do-	0.573	0.705	-10.439	-do-
<b>Capital Structure Ratios</b>								
Equity capital/total assets	0.014	0.006	4.861	-do-	0.002	0.004	-1.443	-do-
Interest coverage ratio	0.089	0.109	-1.005	-do-	0.224	0.356	-2.286	-do-

### **FEDERAL BANK LTD**

Comparative difference in mean pre- and post-merger ratios for Federal Bank Ltd. and results from tests for statistical significance has been summarized in table:-

#### **Analysis of Liquidity Ratios**

The comparison of the differences in mean pre- and post-merger liquidity ratios showed that there was increase in mean liquidity current ratio (0.902% to 1.143%) during the pre- and



post-merger. However, the increase was not statistically significant (t-value of -2.168). However, the mean acid test ratio showed a significant decline (-9.249% to -10.563%), and the decline was statistically significant as confirmed by the t-value of 3.152.

### **Analysis of Efficiency Test Ratio**

The comparison of the pre- and post-merger efficiency ratios for the Federal Bank Ltd. showed that there was marginal decrease in mean assets turnover ratio (0.098% to 0.09%) during the pre-and post-merger, but the decline was not statistically significant (t-value of 0.647). In contrast, mean fixed assets turnover ratio showed a significant increase (8.151% to 12.483%) during the post-merger period and the increase was statistically significant (t-value of -4.803). The mean current assets turnover ratio (2.109% to 1.558%) showed a significant decline during the post-merger period and the decline was statistically significant (t-value of 3.840). Likewise, the mean advances turnover ratio (0.191% to 0.155%) and mean cash turnover ratio (1.185 % to 1.028%) had declined during the post merger but the declines were not statistically significant as confirmed by t-value of 1.385 and 0.679 respectively. The mean equity turnover ratio had declined after the merger but decline was statistically significant.

From above results, it appears that merger had not improved the efficiency position therefore we accepted the hypotheses  $H_E$ .

### **Analysis of the Profitability Position**

The comparison of pre- and post-merger profitability ratios for Federal Bank Ltd. showed that there was marginal decline in mean return on equity ratio (17.763% to 13.480%) but the decline was not statistically significant (t-value of 1.165). There was a statistically insignificant increase in the mean return on assets (6.344% to 6.548%), confirmed by the t-value of -0.166. Similarly, mean advances/deposits ratio (0.573% to 0.705%) showed a significant increase during the post merger period, and increase was statistically significant (t-value of 10.439).

The results indicated that merger had not improved the profitability performances of merging bank. Therefore, we accept the hypotheses  $H_p$ .

### **Analysis of Capital Structure**

In the end, we analyze the capital structure position for Federal Bank Ltd. through the comparison of the pre-and post-merger capital structure ratios which showed that there were marginal rise in the mean equity capital/total assets (0.002% to 0.004%) and mean interest coverage ratio (0.224% to 0.356%) during the post merger period. However, the rises were not statistically significant (t-values of -1.443 and -2.286 respectively). The above results indicated that merger also had not improved the capital structure position for the Federal Bank Ltd. Therefore we accept the hypotheses  $H_c$ . In general, merger has not improved the performance of Federal Bank Ltd.



After the analysis of mean pre- and post-merger ratios for Federal Bank Ltd., the results showed that most of the ratios had declined but decline was statistically insignificant and performance of Federal Bank Ltd. has not improved after the merger. Non satisfaction of the shareholders and difference in culture of banks were the main reason for declining the performance of Federal Bank Ltd. after the merger.

### **Conclusion**

M&A in the banking sector evokes high interest simply for the fact that after decades of strict regulations, easing of the ownership & control regulations has led to a wave of M&A in banking industry throughout the world. (Focarelli & Salleo, 2002). Technological progress and financial deregulation have played an important role in accelerating the process of merger and acquisition in Indian banking industry. Due to technological progress, the scale at which financial services and products are produced has expanded which provide an opportunity for the banks to increase their size and scale of production. At that time, mergers of banking institutions emerged as an important strategy for growing the size of banks. Mergers also help in the diversifications of the products, which help to reduce risk as well (Bhan, Akil, 2009). It is clear from the analysis that the only hypothesis set for the validation are accepted and the Acquiring Banks were not created difference from the merger in terms of profitability, liquidity, efficiency and capital structure. Non satisfaction of the shareholders and difference in culture of banks were the main reason that there are not much difference in terms of profitability, liquidity, efficiency and capital structure of the acquiring banks after the merger. That may be the reason that recently RBI governor Raghuram Rajan has said that the central bank is open to voluntary mergers. "When you go forcing mergers, then there is an issue of culture... so we should be careful about forcing mergers," he had said. Similarly, The government has also clarified that he may consider merging weak smaller public sector banks, and nudge bigger ones to consolidate to create big and strong global banks in India but the decision for the consolidation will be with the bank board.

Further, for comparing the accounting ratios of the Pre and Post merger the t-test is applied, result concluded that the Merger and Acquisition is the useful tool for growth and expansion in the Indian banking sector. It is helpful for survival of weak banks by merging into larger bank but no guarantee to enhance the profitability, liquidity, efficiency and capital base.



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