International Journal of Academic Research in Business and Social Sciences
December 2013, Vol. 3, No. 12
ISSN: 2222-6990

Impact of Bank Mergers on the Efficiency of Banks: A study of merger of Bharat Overseas Bank with Indian Overseas Bank

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DOI: 10.6007/IJARBSS/v3-i12/427 URL: http://dx.doi.org/10.6007/IJARBSS/v3-i12/427

Abstract
After the implementation of reform measures, there has been large changes in the philosophy, perceptions, and functioning of commercial banks and banks are expected to manage the large inflows and outflows of financial resources. Therefore a strong banking system through consolidation is required. Under such situations, it is necessary to study the impact of consolidation on different profitability and efficiency parameters of the banks. In the paper the attempt is made to compare the pre-merger and post-merger performance of Bharat Overseas Bank and Indian Overseas Bank by comparing different efficiency parameters like Profit Per employee, Business Per Employee, Investment and Advances, Interest Income, Return on Assets, NPAs etc. The study concluded that after merger there is improvement in all the parameters of the banks.

Since 1992, the Indian Banking system has undergone several changes in terms of organisation, functions, resource mobilisation, socio-economic role, problems and solutions. The Indian Banking system has travelled a long way from a highly regulated environment in relation to different parameters such as branch, location, interest rate on deposits and advances, priority sector lending etc. to a highly competitive environment by implementation of reform measures since 1992. In the pre-reform period, profitability was not considered as an important yardstick to evaluate the performance of the banks, particularly the public sector banks. But after the implementation of reform measures, there have been sea changes in the philosophy, perceptions and functioning of commercial banks. In order to understand the changing role of commercial banks and the problems and challenges that they have been facing presently it would be appropriate to study the major developments in the banking sector during the post reform period. One such development that has significantly affected the banking structure is the process of consolidation through Merger & Acquisition. In practice M& A provide an opportunity to banks to share their resources, reduce intermediate costs & expand delivery platforms & to improve chances for economies of scale in their operations. These developments are expected to have important implications for operating performance and profitability in the banking system. Therefore from the view point of both managerial and policy interests, it is extremely important to know how the banking industry has been reacting to the

emerging challenges and which banks are performing better than others in this period of transition.

An Overview of Indian Banking

In India banking system has a wide mix- comprising of public sector banks, private sector banks, foreign Banks, Exchange Banks, Post-Office Saving banks etc. Table no.1 provides a brief detail of the structure of Indian commercial banks as on March 2012. As on March 2012, the number of commercial banks in India were 87, out of 26 were in public sector, 20 in private sector and 41 were foreign banks.

Table No. 1

Share in banking space

Type of Bank	No. Of Banks	No. of Branches	Percentage share of no. of branches	Percentage share of Assets
Public sector	26	67,466	83.0	72.8
Private sector	20	13,452	16.6	20.2
Foreign sector	41	323	0.4	7.0
Total	87	81,241	100	100.0

Source: compiled from the speaking notes of Dr. Duvvuri Subbarao, at the FICCI-IBA, Annual Banking Conference, Mumbai, 13 august 2013.

Bank Mergers in India

After the introduction of financial sector reforms starting early nineties, consolidation of banks assumed significance. The process also gained momentum after the Narasimham Committee-1 (1991), which put forward the broad pattern of banking sector (3 or 4 large banks, 8 to 10 national banks, local banks and rural banks). The consolidation process was also reiterated by the S.H.Khan committee(1997), Narasimham committee-II (1998), Raghuram Rajan committee(2009), Committee on Fuller Capital Account Convertibility(2006)and Committee on Financial Sector Assessment(2009). All these committees viewed that restructuring of Indian banking system is required and this restructuring should be market driven based on viability and profitability considerations brought about through a process of M&A.

The following table shows that since the first round of bank nationalisation in 1969, there were a total of 41 mergers in India. The nature of bank mergers in India has been as follows

Table No. 2
Nature of bank mergers in India

Nature of merger	No. of cases
Public sector banks with public sector banks	3
Private sector banks with public sector banks	24
Private sector banks with private sector banks	14
Total	41

Source: compiled from the reports on "Trends & Progress of Banking in India" RBI, various issues

Bank Failures and Mergers during the Post Financial Sector Reform period

The phenomenon of M&A among Indian banks is not restricted to the post-reform period of the Indian banking. It is important to note that many mergers during the pre-reform period were instituted by the government in an effort to restructure ailing banking units. Market driven mergers, which are on a gradual rise, are , the outcomes of the post-reform period, driven by the changes in the competitive landscape of the Indian banking system which forced many of the incumbent banks to restructure themselves and boost their efficiency in an attempt to ensure long term profitability and survival.

Merger in banking sector: 1992–1994

During 1991-92, 28 banks under liquidation were treated as dissolved and two banks were placed under liquidation. On 31st March 1992, 96 banks went under liquidation. On July 6, 1991, the RBI suspended all payments and other transactions of Bank of Credit and Commerce International (Overseas) ltd. and the SBI was appointed as the provisional liquidator of BCCI. In February 1993, the Grand Court of Cayman Islands approved the terms and conditions for the sale of BCCI (O) ltd., to the SBI. The SBI offered to purchase the business of Bombay branch BCCI (O) ltd. for a consideration of Rs. 40 r. Following the agreement of promoters a wholly owned subsidiary of SBI viz. SBI Commercial and International Bank ltd. (SBICI) was incorporated on October 1993, and it started its business from January 31, 1994.

The Bank of Karad ltd. also fell into financial crises due to the large scale irregularities by certain stock brokers. The crises affected the depositor's interest and the survival of the bank. Then RBI took over the matter and issued an interim order for liquidation of the bank on May 27, 1992. The scheme of amalgamation with Bank of India came into force on July 20, 1994.

Bank Mergers: 1995-2000

A very important merger of the early 1990s was that of a nationalised bank viz. New Bank of India with Punjab National Bank. The New Bank of India had incurred losses during the last four proceeding years. With the introduction of prudential accounting standards and new NPA norms, the financial position of the New Bank of India further worsened. The cumulative losses

and the erosion of deposits weakened the liquidity position of New Bank of India and threatened its existence. Thus for the interest of the depositors the RBI took a decision in September 1993 for merging the New Bank of India with PNB.
In January 1996, the Kashinath Seth bank ltd. was also merged with SBI. The Punjab Co-operative bank ltd. and Doab Bank ltd. were also merged with Oriental Bank of Commerce ltd. on April 8, 1997. In June 1999, Bareily Corporation Bank ltd. merged with Bank of Baroda.

Bank Mergers: 2000-2005

The year 2001 witnessed the merger of the 57 years old Tamil Nadu based private sector commercial bank "Bank of Madura Ltd." with a new generation private bank i.e. ICICI bank. The RBI approved the merger of Bank of Madura with ICICI Bank ltd. with effect from March10, 2001. As per the scheme of amalgamation, the swap ratio was fixed at two equity shares of ICICI Bank for every one equity share of Bank of Madura ltd.
On 26th April 2002, the RBI also accorded approval for merger of ICICI ltd. with ICICI Bank. The Benares State Bank ltd. was also merged with Bank of Baroda on July 19, 2002.The Nedungadi Bank which was incurring huge losses was also placed under moratorium for a period of 3 months from November 2, 2002 and the scheme of amalgamation of Nedungadi Bank ltd. with Punjab National Bank came into effect on February 1, 2003.
The Global Trust Bank (GTB), which was granted licence in 1994, began showing adverse growth in 2002. The RBI instructed the bank to adopt prudential norms for reducing its adverse futures. But the bank was not able to finalise the programme of capital expansion from domestic sources as advised by RBI. As the financial position of the bank was steadily deteriorating and its solvency getting seriously affected, the RBI had placed the bank under moratorium on July 24, 2004, to protect the interests of the small depositors and that of the banking system. Of the various merger proposals, the one proposed by the Oriental Bank of Commerce was found acceptable by the RBI and was forwarded to the central government for approval. As per the notification of the government the GTB was merged with OBC on August 14, 2004.
In 2005, a proposal of voluntary amalgamation was submitted by two new generation private sector banks viz. "Bank of Punjab" and Centurian Bank Ltd.". The scheme of amalgamation of these two banks was approved by the RBI in terms of Sec. 44A of the Banking Regulation Act , and the became effected from October 1, 2005. The Centurian Bank subsequently changed its name to Centurian Bank of Punjab Ltd.

Bank Mergers during the year 2006-2013

On January 7, 2006, the Ganesh Bank of Kurundwad Ltd. was placed under moratorium for three months, as the net worth of the bank was turned negative and it failed to maintain the capital adequacy requirements for several years. This Bank was merged with Fedral Bank Ltd. on September 2,2006.The Capital to Risk Weighted Ratio of the United Westron Bank Ltd (UWB) had turned negative and failed to maintain it and this bank was merged with Industrial Development Bank of India ltd. on October 3, 2006.
The year 2007, witnessed the merger of an old private sector bank "Bharat Overseas Bank Ltd." with a nationalised bank viz. Indian Overseas Bank. The bank with a network of 103 branches was taken over by India Overseas Bank in April 3, 2007.On May 23, 2008, Centurian Bank of

Punjab was merged with HDFC Bank. Centurian Bank of Punjab had around 400 branches out of about 180 locations supported by an employee base of over 7500 employees.
The Bank of Rajasthan with asset size of Rs. 17300.06 cr. incurred the net loss after provision and taxes remained at Rs. 102.13 cr. for the year ending March 31, 2010. On august 13, 2010 Bank of Rajasthan was also merged with ICICI Bank.

Reports of various committees on Bank Mergers

Since 1992 the RBI and the Government initiated several initiatives to strengthen the banking system. Several committees were also appointed by the government which gave several proposals for the same purpose.

Narasimham Committee I

In its first report in 1991 the Narasimham committee recommended measures to restructure the Indian banking system. The committee recommended that the Number of public sector banks should be reduced through M&A. The committee made the following important recommendations.

- There should be 3 to 4 large banks of global character
- Eight to ten banks of national character in the country engaged in universal banking
- Some local Area banks whose area of operation is confined to some specific region.
- Some rural banks including the Regional Rural Banks whose main function would be to finance the credit requirements of agriculture and allied activities in rural areas.

The committee recommended the merger of strong banks in public and private sector between themselves and in some cases even with development financial institutions and non- banking institutions.

Narasimham Committee II

The second report of The Narasimham committee (April 1998) on banking sector on structural issues made many recommendations.
Merger between banks and Domestic Financial Institutions and Non Banking financial Institutions need to be based on the synergies and locational and business specific complementarities of the concerned institutions and must obliviously make sound commercial sense. Merger of public sector banks must emanate from managements of the banks with the government as the common stakeholder playing a supportive role. Such mergers however can be worthwhile if they lead to rationalisation of the work force and branch network, otherwise the merger of Public sector banks would tie down the management with operational issues and distract attention from the real issues. It would be necessary to evolve policies aimed at “right sizing and redeployment of surplus staff either by way of retaining them and giving them appropriate alternative employment or by introducing a Voluntary Retirement Scheme with appropriate incentives. This would necessitates the co-operation and understanding of the employees and towards this direction managements should initiate discussions with the representatives of staff and would need to convince their employees about intrinsic soundness of the idea, the competitive benefits that would accrue and the scope and potentials for

employee's own professional advancement in a bigger institution. Merger should not be seen as a means of bailing out weak banks. Merger between strong banks and financial institutions would make for greater economic and commercial sense and would be case where the whole is greater than the sum of its parts and have a Force Multiplier Effect. It can thus be seen from the recommendations of the Narasimham Committee that the merger of Public sector banks were expected to emanate from the managements of banks with the government as a common stakeholder playing in the supportive role.

Joint Parliamentary Committee on Bank Mergers in India

While examining the issues relating to the above developments, the "Joint Parliamentary committee" (JPC) on stock market scams and matters relating thereto has made the following observations and recommendations in para 10.87 of the report on the role of the RBI regarding bank mergers

Bank merger is a recent phenomenon in our country and before the merger , the sanction of RBI is required as stipulated in section 44A of the banking Regulation act 1949. And the role of RBI is limited. No merger is allowed unless the scheme of merger draft has been placed before the shareholders of the banking companies and approved by a resolution passed by the majority representing two-third value of the shareholders. As such RBI does not have any role to play regarding the SWAP ratio arrived at the end. In case of any dissenting shareholder, RBI has to determine the value of the share price, which will be final. This practice is at variance from that of mergers in case of the companies. Where as per the Companies Act, the approval of the court is required before the amalgamation/merger between the two companies which also ensures fair price.

Making the above observations, the JPC has made the following recommendations on the role of RBI in bank mergers.

a) Laying down the guidelines to process a merger proposal in terms of the abilities of investment bankers.
b) The key parameters that form a basis for determining the SWAP ratios
c) Disclosures
d) The stage at which the board will get involved in order to have meaningful board level deliberations.
e) Norms for promoter buying or selling shares directly/indirectly, during, before and after discussion period etc. Without this, many mergers will become a subject of public debate, which may not all the time necessarily be constructive.

Varma Committee report on Bank Mergers

In February 1999, the RBI also appointed a "Working Group on Restructuring of Weak Public Sector Banks "under the chairmanship of Shri M.S. Varma, which was to identify weak public sector banks and to suggest scheme for the restructuring and strengthening of weak banks. For identifying weak banks the committee developed important parameters, which were essential for a financially strong bank. The group submitted its report in October 1999, and recommended the following seven parameters for identifying weak banks

- Capital Adequacy Ratio

- Coverage Ratio
- Return on Assets
- Net Interest Margin
- Ratio of operating profits to average working funds
- Ratio of cost to income
- Ratio of staff cost to net interest income plus all other incomes.

On the basis of the above parameters public sector banks were classified into three categories- i) the banks which meet all the above parameters ii) the banks which meet none of the parameters. iii) The banks in which some of the parameters were present.

The Woking Group made an exhaustive case by case examination of the financial strength and weakness of all Public sector banks and the Group also suggested a two-stage operation for restructuring of weak banks. The Group opined that the option for merger or privatisation will be relevant only after enhancing the operational efficiency of the banks. The committee recommended that the privatisation or merger of weak banks should be considered as the last option. During the first stage the operational, organisational, financial and systematic restructuring should be undertaken. The operational efficiency could be attained only by adopting modern technology, reducing costs of operations, reducing the level of NPAs, improving practices of corporate governance, change of legal system, adopting staff rationalisation measures, enhancing the efficiency and involvement of bank management etc.

In its recommendations the Working Group estimated that in the next three years the overall cost of restructuring the weak banks will be Rs. 5500 cr. Of which Rs.3000 cr. will be the capital infusion, Rs. 1000 cr. Will be the NPA buyout, staff rationalisation measures will cost Rs. 1100 to 1200 cr. and the technology up gradation will cost Rs. 300 to Rs. 400 cr. The Group also recommended the constitution of Financial Restructuring Authority. For speeding up the recovery process in weak banks, the committee recommended the setting up of Debt Recovery Tribunals to take their cases on a priority basis. But in the budget of 2000-01 the then Finance Minister announced the constitution of a Financial Restructuring Authority for each weak bank instead of a single Authority for all weak banks. Under the proposed framework, the statutes governing public sector banks would be amended to provide for the suspension of board of directors on the basis of recommendations of RBI and constitution of a FRA comprising experts and professionals. The amendments would also enable the FRA to exercise special powers, including all powers of the Board of the bank. The Government would also consider recapitalisation of the weak banks to achieve the prescribed Capital Adequacy Norms.

Review of Literature

A large number of studies examined various aspects of M&A in the Indian banking system. Many important books and research articles have been published. In this section of the chapter an attempt has been made to review some of the books and articles, existing literature dealing with the various aspects of bank consolidation.

Goyal K.A. & Joshi vijay (2011) in their paper, gave an overview on Indian Banking Industry & highlighted the changes occurred in the banking sector after post liberalisation. This study examined the need for M&A in Indian banking. It also gave the idea of changes that occurred after M&A in the Indian banking sector in terms of financial, human resources and legal

aspects. It also described the benifits that come out M&A & examined that M&A is a strategic tool for expanding their horizon and companies like the ICICI bank has used merger as their expansion strategy in rural market to improve customer base and market share. The sample of 17 mergers of post liberalisation period was taken.

Kuriakose Sony and Giresh Kumar G.S. (2010) in their paper, assessed the strategic and financial similarities of merged banks and the relevant financial variables of respective banks were considered to assess their relatedness. The study concluded that on;y private sector banks are in favour of voluntary merger wave in Indian banking system and the pubic sector banks are reluctant towards this type of restructuring. Target banks are more leverage (dissimilar) than bidder banks, so the merger lead to attain optimum capital structure for the bidders and asset quality of the target firms is very poor except in case of HDFC and CBoP merger in 2007. The factor behind voluntary amalgamation are synergies, efficiency, cost saving, economies of scale. The merging partner's strategically similarities and relatedness are very important in the synergy creation because the relatedness of the strategic variables have a significant impact on the bank performance .

Aharon David y et all (2010) analysed the stock market bubble effect on M&A and followed by the reduction of pre-bubble and subsequent, the bursting of bubble seems to have led to further consciousness by the investors and provide evidence which suggests that during the euphoric bubble period investor take more risk. M&A of banks is the significany force of change took place in the Indian banking sector.

Kuriakose Sony et. Al.(2009) focused on the valuation practices and the adequacy of Swap ratio fixed in the voluntary amalgamation in the Indian Banking sector and used swap ratio for the valuation of banks, but in most of the cases the final swap ratio is not justified to their financials.

Schiereck dirk et al(20090 explained the relationship between bank reputation after M&A and its effect on shareholder's wealth. This study considered 285 Europian M&A transactions announced between 1997 &2002 and finds that on average wealth was not significantly affected by M&A.

R Srivassan et al,(2009) gave the views on financial implications and problems occurring in M&A highlighted the case for consolidation and discussed the synergy based merger which emphasised that merger is for making large size of firm but no guarantee to maximise profitability on a sustained business and there is always a risk of improving performance after merger.

Anand Manoj & Singh Jagandeep (2008) studied the impact of merger announcements of five banks in Indian banking system on the shareholder's wealth. These mergers were the Times Bank merged with the HDFC Bank, Bank of Madurai merged with ICICI Bank, the ICICI Ltd. merged with ICICI Bank, the Global Trust Bank merged with Oriental Bank of Commerce and the Bank of Punjab merged with the Centurian Bank. The announcement of merger of banks had positive and significant effect on the shareholder's wealth.

Koetter (2008) in his paper aimed to suggest a taxonomy to evaluate post-merger performance on the basis of cost and profit efficiency. His study identifies successful mergers as those that fulfil simultaneously two criteria. First, the merged banks must exhibit efficiency levels above the average of non-merging banks. Second, banks must exhibit efficiency changes

between merger and evaluation. The study further finds that every second merger is a success in terms of either cost efficiency or profit efficiency.

Altunba et al(2008) also examined the impact of Europian Union Bank's strategic similarities on post-merger performance. The study found that on average, ban mergers have resulted in improved performance. The study also found that for domestic deals, it can be quite costly to integrate institutions which are dissimilar in terms of their loans, earning costs, deposits and size.

Aggarwal A.K. (2006) in the study also concluded that the financial sector reforms have aided the banking industry to optimally harness the operational flexibility and functional autonomy for enhancing efficiency, productivity and profitability gains. As a strong banking system is critical for sound economic growth, it is essential to improve the comprehensiveness and quality of the banking system further to fillip efficiency into the performance of the real sectors. With a view to triumphantly facing global competition M&A are the effective tool. M&A help banks to acquire competitive size, an opportunity to gain sizeable market share, both domestic and international by building brand image and gainfully reducing the cost of product development and delivery. However bank mergers should keep in mind the inherent strength and weaknesses of both the entities. Fundamental features like portfolio, NPA levels, capital adequacy, technology levels, cultural divergence, and employee issues should be meticulously examined.

Cornett et al (2006) examined the operating performance around commercial bank mergers and found that industry adjusted operating performance of merged banks increases significantly after the merger. Large bank merger produce greater performance gains than small bank mergers.

Swain B.K. (2005) also found that the issue of bank consolidation assumes significance from the view point of making Indian banking strong and sound, apart from its growth and development to become sustainable. It is strongly felt that in Indian banking the process of merger should be started immediately. Sooner the process takes off, greater the benefits to the economy as a whole.

Ismail & Davidson (2005) also studied merger in Europian banking and its effect on shareholder's value. The study found that abnormal returns are higher in bank to bank rather than cross product deals, suggesting that there is scope for exploiting economies of scale and market power within yhe banking sector.

Sharma Meena (2005) is of the opinion the Indian banking industry is likely to see many more mergers as the competition intensifies. The mergers are more likely between the private banks and foreign banks. This is because public sector banks are still protected by their large branch network which insulated them from competition from new banks, which will take some time to develop a comparable network. The private and foreign banks, on the other hand have been most severely affected by competition and are likely to seek mergers to improve their competitive strength. They are also likely to gain benefits from such mergers on account of economies of scale.

Lakshmi Narayana (2005) in his study explained that the phenomenon of M&A among Indain baks is not restricted to post liberalisation era of banking system. Between 1960-2004, there have been 71 mergers among banks in India. Of these 55 mergers occurred during 1960-1990. It is important to note that government instituted many mergers during the pre-reform period in

order to restructure weak banks. Market driven mergers which are on a gradual rise, are thus, outcomes of the post-reform period, driven by the changes in the competitive landscape of the Indian banking system., which forced many of the incumbent banks to restructure themselves and boost their efficiency in an attempt to improve long term profitability.

Beena (2004) highlighted the current favourable environment for mergers which finds evidences of a rising trend in the number of mergers in the Indian corporate sector since the introduction of economic reforms. However this study focus on the private corporate sector and uses accounting ratios to assess pre and post merger performance. The author analysed 115 domestic and foreign mergers over the period 1995-2000 and it was found that both domestic and foreign owned acquiring firms exhibited declining rates of returns.

Kumar Rajan, chairperson, NABARAD (2004) studied the likely impact of consolidation on the co-operative credit system in India. As per the study co-operatives have a unique place in the rural credit scenario. There is need to revamp them through reforms and revitalisation. The process of consolidation in the co-operative sector is not an easy affair with boards of management not in place for many years in many states. The merger of the co-operative credit system will be time consuming affair. Kumar Rajan also maintained that the success of merger will also depend upon the willingness of the state government to let go the controls they have on the components.

Lakshminarayan P. (2003) in his article also highlighet the importance of consolidation in Indian banking. According to him It is time that the Indian banks should think in terms of expanding globally by proper restructuring exercise at the earliest.

Aggarwal Shyam Ji (2003) also necessitated the need for Indian banks to merge. In his article he maintained that looking globle trendsof consolidation, it is need of the hour to restructure the banking sector in India through M&A in order to make them more capitalized, automated and technology oriented as to provide more competitive and customer friendly. Further, if the pace of mergers in India is to be accelerated then the impediments must be immediately resolved.

Beena (2000) studied the trends of mergers in India over a longer period spanning 1973-1995. Examining the number of mergers and the industry of the merger prior to reforms, she found that most mergers were among manufacturing industry, although the number of mergers in non- manufacturing industry did not show gradual rise.

Need of the study

Since the early 1990s, the structure of the banking sector has significantly changed due to the deregulation and liberalization, accompanied by divestment of public sector banks, entry of foreign banks and merger of many banks in India and in the world. In the post reform period about 25 bank mergers took place in India. These mergers have important implication on the performance and profitability in the banking system. Therefore from the point of view of both managerial and policy interests, it is extremely important to know the impact of these merges on the efficiency levels of banks and their temporal behaviour so as to understand how the banking industry has been reacting to these emerging challenges and which banks are performing better than others in this period of transition.

Objectives of the study

1. To study whether size of banks matter and to what extent
2. To study the likely impact of mergers on the efficiency and profitability parameters of banks.

Methodology of the study

In the study an attempt has been made to highlight various issues involved in bank mergers in India. For the purpose of the study the collection of data has been based on secondary sources. The information was collected from various books, studies, annual reports of banks, Indian Bank Association journals, RBI bulletins, articles, and various websites.

After the collection of data from various sources they have been properly arranged and tabulated to make analyses and interpretation. Simple percentages, bar diagrams and tables have been used. In order to derive appropriate inferences and to carry out elaborate analyses two types of 't-tests' have also been applied.

1. 't-test' of significance of simple correlation coefficient
2. 't-test' of significance of difference of means

   To test the significance of correlation coefficient between Asset size and profitability 't-test' of significance of correlation coefficient is applied. After finding the Karl Pearson's correlation coefficient between Asset size and Profits, the following formula is used to find 't-ratio'

$$|t| = \frac{r - 0}{\sqrt{\frac{1-r^2}{n-2}}}$$

here 'r' is the Karl pearson's correlation coefficient.
'n' is the sample size.

To test the significance of difference of means of various efficiency parameters of banks before and after merger 't-test' of significance of difference of means is applied, which involves the use of following formula to find 't-ratio'

$$|t| = \frac{|\bar{x}_1 - \bar{x}_2| - 0}{\sqrt{\hat{S}^2\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

$$\text{and} \quad \hat{S}^2 = \frac{n_1 s_1^2 + n_2 s_2^2}{n_1 + n_2 - 2}$$

where
n1= Sample size before merger
n2= Sample size after merger
x1= Average before merger
x2= Average after merger
s1= Standard Deviation before merger
s2= Standard Deviation after merger
After calculating the't-ratio' the calculated value is compared with the tabulated value to make interpretation.

Relationship between size and profitability

Much of the impetus towards merger comes from the belief that there is a linear relationship between size and efficiency, arising partly or wholly from economies of scale. So that bigger you get the more you become competitive. Indian banks are much smaller than international banks. If they wish to become competitive, they must get bigger. To show the relationship between size and profitability, a sample of 24 large banks (whose assets are more than Rs. 1,00,000 cr.) is taken. Their assets and operating profits are taken and Karl Pearson's Correlation coefficient between them is obtained.

Table No.3

Asset size and Profits of large banks (Asset size more than Rs. One lakh crore)

S. No.	Bank	Assets (Rs. Cr.)	Operating Profits (Rs. Cr.)
1.	Bank of Baroda	4,47,321	8,581
2.	HDFC Bank	3,37,909	8950
3.	Axis Bank	2,85,628	7431

4.	PNB	4,58,194	10614
5.	ICICI Bank	4,73,647	10386
6.	Allahabad Bank	1,82,935	3770
7.	SBI	13,35,519	31574
8.	IDBI Bank	2,90,837	4056
9.	HSBC	1,09,224	3528
10.	Indian Bank	1,41,419	3463
11.	Bank of India	3,84,535	6494
12.	Corporation Bank	1,63,560	2856
13.	Andhra Bank	1,24,964	2815
14.	Citi Bank	1,28,428	3472
15.	State Bank of Hyderabad	1,18,315	2653
16.	Union Bank of India	2,62,211	5254
17.	Canara bank	3,74,160	5943
18.	Syndicate bank	1,82,468	3347
19.	Standard Chartered Bank	1,21,686	4500
20.	Indian Overseas Bank	2,19,648	3534
21.	United Bank of India	1,02,010	1829
22.	Oriental Bank of Commerce	1,78,130	3141
23.	UCO bank	1,80,498	2811
24.	Central Bank of India	2,229,800	2815

Source: “Business Today” Dec. 9, 2012, pp.100-105

After applying the formula Karl Pearson’s correlation coefficient is found to be 0.98712

$$r = 0.98712$$

Test of Significance of the correlation coefficient

To test the significance, the t-test of significance of correlation coefficient is applied.

Null Hypothesis Ho: The correlation between assets size and profitability is insignificant or r=o

Alternative Hypothesis H1: The correlation between Asset size and profitability is significant or r>0

Apply t-ratio

$$|t| = \frac{r - 0}{\sqrt{\frac{1-r^2}{n-2}}}$$

After calculation

ItI= 28.94

Interpretation

The tabulated value at 5% level of significance for 22 degrees of freedom and for one tail test is 1.717. The calculated value is more than the tabulated value. Thus the calculated value falls in the rejection region. Null hypothesis is rejected and the alternative hypothesis is accepted. i.e. the correlation coefficient between Asset Size and operating profits is highly significant.

Thus Size Matters

Presently the size of Indian banks is relatively small in relation to meet the needs of Indian companies expanding their business overseas. To overcome this, Indian banks needs consolidation and by 2020 we may see 5-6 large Indian banks out of which at least a few could be among the top 50 banks in the world. By 2020, we may also see entry of a few more private sector banks, so the competitive environment in the banking sector could see individual players working out differentiated strategies based on their strengths and market niches. For example, some players might emerge as specialists in mortgage products, credit cards etc. and some may concentrate on SME segment or high net worth individuals by providing specially tailored services.

With size, a bank is able to leverage economies of scale and economies of scope. This will also help expand the capital base. There is no doubt that Indian banks will need to scale up in terms of size if they have to compete globally. For instance, in the list of top 100 banks in the world, China has 9(5 of which are in top 50) while India has only one. SBI is the only Indian bank which

is ranked among the top 100 banks in the world, coming at the 61st rank globally 9 last year 68th) in terms of Tier I capital, ICICI bank is at 107th place (last year 111) . In terms of assets, SBI ranked 59 (last year 74) . Among the top 25 banks in Asia (ex- Japan) SBI ranks 12th in terms of Tier I capital. To put up the issue in perspective, Tier I capital and asset of ICBC, the largest bank in China(and Asia), is 5.96 times and 5.50 times respectively bigger than that of SBI, the largest bank in India. However, the Tier I capital of Bank of America, the largest bank in the world, is only 44 times larger than that of ICBC.

Merger of Bharat Overseas Bank with Indian Overseas Bank

Bharat Overseas Bank was originally designed to anchor Indian Bank's overseas operations. The provocation was the Thai government asking IOB to close its banking branch in 1969 after nationalisation. The government withhold the Thai pressure for Four years and in 1973, following RBI initiative, six private sector banks teamed up with IOB to form Bharat Overseas bank.

The Indian government, has now reached an understanding with Thailand. The RBI has allowed Krung Thai Bank Public company to set up shop in India and Thailand is ready to reciprocate the gesture. So, there is no problem with IOB taking over BOB.

The IOB was having 30 % holding in BOB. The other stakeholders in BOB were Bank of Rajasthan (16%), Vysya Bank(14.66%), Fedral bank(10.67%), Karur Vysya bank(10%), South Indian Bank(10%) and Karnataka bank(8.67%). In March 2005, BOB had an equity base of Rs. 15.75 cr. and a net worth of Rs. 198 cr.

In the year 2007, the BOB was merged with IOB. The bank with a network of 103 branches was taken over by IOB in April 3, 2007.

Table No. 4

Financial performance of Bharat Overseas Bank and Indian Overseas Bank for three years before merger

	Bharat Overseas bank			Indian Overseas Bank		
	2004	2005	2006	2004	2005	2006
Number of Employees	984	1075	1098	24382	24366	24178
Business Per Employee (Rs. Lakh)	370	422	484	232.51	269.48	354.78
Profit Per Employee(Rs. Lakh)	3.41	1.86	0.51	2.10	2.66	3.22
Total Business (Rs. Lakh)	364080	453650	531432	5669058.52	6566149.68	8576661.94
Total Profit(Rs. Lakh)	3355.4	1999.5	600	51202.2	64813.56	77853.16
Investment and Advances(Rs. Cr.)	1328	2637	3015	40467	44220	53708

Interest income(Rs. Cr.)	198	219	252	3754	3951	4406
Other Income (Rs.Cr.)	32	19	26	741	800	541
Return on Advances (%)	1.25	0.62	0.15	1.08	1.32	1.32
Net NPA Ratio (%)	2.26	1.56	1.87	2.85	1.27	0.65

Source: Researcher's compilation from financial statement of banks retrieved from http://www.rbi.org.in/rdocs/publications

Table No. 5
Financial Performance of Indian Overseas Bank three years after merger

	Indian Overseas Bank		
	2008	2009	2010
Number of Employees	24947	25512	26892
Business Per Employee (Rs. Lakh)	582.7	689.5	712
Profit Per Employee(Rs. Lakh)	4.82	5.20	2.6
Total Business (Rs. Lakh)	14536616.9	17590524	19147104
Total Profit(Rs. Lakh)	120244.54	132662.4	69919.2
Investment and Advances(Rs. Cr.)	88876.5	106100.7	116649.8
Interest income(Rs. Cr.)	7738.8	9641.4	10245.8
Other Income (Rs.Cr.)	1037.1	1598.8	1143.3
Return on Advances (%)	1.30	1.17	0.53
Net NPA Ratio (%)	0.60	1.33	2.52

Source: Researcher's compilation from financial statement of banks retrieved from http://www.rbi.org.in/rdocs/publications

Table No. 6

Combined Financial performance of Bharat Overseas Bank and Indian Overseas Bank three years before merger

	Bharat Overseas Bank & Indian Overseas Bank		
	2004	2005	2006
Number of Employees	25366	25441	25276
Business Per Employee (Rs. Lakh)	237.84	257.92	360.34
Profit Per Employee(Rs. Lakh)	2.15	2.62	3.10
Total Business (Rs. Lakh)	6033138.52	7019799.68	9108093.94
Total Profit(Rs. Lakh)	54557.6	66813.06	78453.16
Investment and Advances(Rs. Cr.)	41795	46857	56723
Interest income(Rs. Cr.)	3952	4170	4658
Other Income (Rs.Cr.)	773	819	567
Return on Advances (%)	1.165	0.97	0.735
Net NPA Ratio (%)	2.555	1.415	1.26

Source: Researcher's compilation from financial statement of banks retrieved from http://www.rbi.org.in/rdocs/publications

Table No. 7

Average of different parameters of the two banks in the pre and post merger period

	Bharat Overseas Bank & Indian Overseas Bank		
	Mean		Change
Business Per Employee (Lakh)	Pre	291.27	127.57 %
	Post	662.87	
Profit Per Employee (lakh)	Pre	2.62	59.16 %
	Post	4.17	

Investment and Advances (Cr.)	Pre	48458.3	114.36 %
	Post	103875.6	
Interest income(Cr.)	Pre	4260	116.15 %
	Post	9208.67	
Other Income(Cr.)	Pre	719.67	74.96 %
	Post	1258.7	
Return on Advances (%)	Pre	0.956	4.60 %
	Post	1.00	
Net NPA Ratio(%)	Pre	1.74	-26 %
	Post	1.48	

Based on table 4, 5&6

After calculating the pre merger and post merger average values for different variables it was found that all of the variables have recorded a positive change. Comparison of pre merger and post merger average of Business per employee has improved by 127.57%,profit per employee has improved by 59.16%. Similarly, Investment and Advances have increased by 114.36%. Interest Income of the Indian Overseas Bank has also improved by 116.15%. Other income of the bank has also increased by 74.96%. In the same manner, Return on Advances improved by 4.60% and NPAs of IOB have decreased by 26%.

Table No. 8

Mean, Standard Deviation and t-ratios for the pre and post merger period

	Mean		Standard Deviation	t-Value(Calculated)	Interpretation
Business Per Employee (Lakh)	Pre	291.27	53.644	6.73	Significant
	Post	662.87	56.402		
Profit Per Employee (lakh)	Pre	2.62	0.38	1.811	Insignificant
	Post	4.17	1.146		
Investment and Advances (Cr.)	Pre	48458.3	6198.62	6.00	Significant
	Post	103875.6	11447.0412		
Interest	Pre	4260	295.165	6.299	Significant

income(Cr.)	Post	9208.67	1068.240		
Other Income(Cr.)	Pre	719.67	109.572	2.86	Significant
	Post	1258.7	242.253		
Return on Advances(%)	Pre	0.956	0.175	0.1638	Insignificant
	Post	1.00	0.336		
Net NPA Ratio(%)	Pre	1.74	0.577	0.37	Insignificant
	Post	1.48	0.7912		

Based on table 4, 5&6

After calculating t-ratios for various efficiency indicators, they are compared with the tabulated value at 5% level of significance and for 4 d.f..The tabulated value at 5% level of significance and for 4 dif. is 2.132. If the calculated value is less than the tabulated value, then null hypothesis is accepted and there is no significant improvement in that variable in the post merger period. But if the calculated value is more than the tabulated value, the null hypothesis is rejected and the alternative hypothesis is accepted i.e. there is significant improvement in that variable in the post merger period.

After calculation, it is found that the merger between Bharat Overseas Bank and Indian Overseas Bank has resulted in significant improvement in Business Per Employee, Investment and advances, Interest income and other income. But other variables like Profit Per Employee, Return on Advances and NPA ratio have not recorded significant improvement in the post merger period.

Conclusion:

Levelling the playing field between domestic and foreign banks is particularly important for a competitive setting. The popular view that large banking firms are more efficient and less risky than smaller firms or the notion that the global banking industry is consolidating in order to eliminate excess capacity, may be some of the forces but one cannot deny the fact that today public policies are encouraging the banks to merge. The question is not consolidation to cover weaknesses, but to build stronger financial sector. Though each bank and branch can be effective too, but the combined assets, systems and technology platforms of the corporate parents will mitigate the risk and extend the credit, which a single particular bank cannot do. From the central bank's view point main concern over bank consolidation is its effect on systematic risk and hence on financial stability. Financial integration leads to reduced financial cost, increases market competition, better use of technology and reduces economic dependence.

But before allowing mergers to proceed, it must be ensured that certain conditions must be satisfied so that merger proves to beneficial for all the concerned. Clear reasons must exist for M&A, which may include revenue growth, lower costs and improved return on assets. Merger should not only create strong domestic banks, but these banks

should also be in the position to compete internationally. Market driven merger is most desirable. At the same time, regulators should act as a facilitator if the merger meets the objectives of soundness and stability. Merger should not lead to emergence of one or group of dominant banks that can engage in monopolistic behaviour. Merger of banks should always be in public interest. Management of banks involved in merger should be "fit and proper" and adequately skilled to complete the integration process and manage the risks thereof.

. Capital acts as the last defence to absorb losses. Therefore the merger process should insure that the merged entities should be adequately capitalised to meet these requirements. While it is desirable that the ownership of merged entity is with diversified shareholders, it should be ensured that no single shareholder or group of shareholders is able to exercise undue influence on the banks. Since the merger results in the creation of large financial conglomerates, the regulatory authorities should ensure that the existing supervisory practices are adequate to supervise such entities.

Unless these conditions are satisfied, there is every danger of merger derailing the steady improvement in the health of Indian banking system that has taken place consequent to banking sector reforms.

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