Pre and Post Merger Operational Efficiency of Banks in India – A Comparative Study

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ABSTRACT

The Economic reforms initiated by the Government of India during the mid of 1991 altered the business environment radically. The policy changes through LPG and IT helped our financial institutions for multifaceted growth. As a result financial awareness has contributed to dynamism in the Indian economy. Banking is the most leading sector in India and has been among the top performers in the markets. Banks are the front line financial institutions in our economy working under intense and healthy competition. Indian banks have opted for Mergers and Acquisitions (M&A) as a strategic tool for global entry mode and expansion in future. Mergers and Acquisitions is a pre-requisite that lead banks to the phase of consolidation amongst banks in future. This paper focuses on a comparison of pre and post merger of banks and its operational performance measured through selected 11 ratios.

INTRODUCTION

Growth is the basic objective of every firm and banks are not an exception. To meet the extent of severe competition that the Indian banks are exposed to on account of the development of private sector banks, entry of foreign banks to withstand in the competitive market, it is necessary for the banks to expand their activities by increasing their capabilities of carrying out wide range of activities and services to meet the modern requirements of business enterprise and thereby enabling it to have cost reduction. For this purpose the Indian banks have opted for M&As as a strategiy. In the rapidly changing environment where technology is embedded in people and process, well planned M&As are recognized as critical for growth and even survival.

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STATEMENT OF THE PROBLEM

The financial sector in general and Banking sector in particular were forced to reorient themselves to move towards the development of more efficient and well functioning units. So, it was necessary to structure the Indian banks to improve their competitiveness, through expansion of the size of their capital, asset base and adoption of technology. Merger and Acquisitions considered to be more useful to achieve the requisites for enhancing the competitiveness in a shorter span.

This study assess the successful of M&As of the banking industry by analyzing its implications from point of view of growth.

OBJECTIVES OF THE STUDY

1. To assess the success of Mergers and Acquisitions in the pre and post merger period.

2. To find out the leading indicators and its impact on banks operational performance through selected ratios.

REVIEW OF LITERATURE

According to **Devivedi V. K (1999),** M&A can be used to improve the financial position and increase the profitability if it is carried out systematically and professionally by giving due attention to the HR issues. **Laxman G (2004)** assesses the impact of merger on financial performance in terms of CAR, NPAs, Interest income, Interest Expenditure, Operating expenditure, Provisions and Contingencies, Spread, Gross Profit, Net profit as percentage to total assets before and after merger. The study concluded that there is a decreasing trend in spreads and increasing tendency in NPAs of the target bank. But these indicators are more or less remained the same when compared to average indicators of the Private Sector Banks during the period under study. **Sathya Swaroop Debasish (2005)** in her study "suggested that the removal of entry barriers saw emergence of private sector banks (both old and new) in India and how market forces are compelling these to conglomerate and consolidate their competitive abilities. **Sivaram Y.G (2006)** concluded that the banking sector has gained momentum in merger and acquisition activities and the factors such as globalization, technological changes regulatory, flexibility have triggered the M&As in the Indian banking sector.

METHODOLOGY

Sources of Data

The study is based on secondary data. The data were collected from the official directory and data base of Centre for Monitoring Indian Economy (CMIE) namely PROWESS. The published annual reports of the selected banks related websites, magazines and journals on finance have also been used as data source.

Period of Study

The study covered a period of 10 years as five years before the date of merger and five years after the date of merger including the year of merger. So it covers a period from 1995-2006

Sampling Design

Banks merged from 1995 onwards were selected on the basis of the availability of data for a period of 5 years before the merger and five years from the merged period. Accordingly, the sample for the study consists of 9 banks. The list of such banks is presented in Table 1.

Sample Banks

Sl. No	Merging bank	Merged bank	Year
1	Kasinath Seth Bank	State Bank of India (SBI)	1995
2	Punjab Co-operative Bank	Oriental Bank of Commerce (OBC)	1997

3	Bareilly Co-operation Bank	Bank Of Baroda (BOB)	1999
4	Sikkim Bank	Union Bank of India (UBI)	1999
5	Times Bank	Housing Development Financial Corporation Bank (HDFC)	2000
6	Bank of Madura	Industrial Credit Investment Corporation of India (ICICI Bank)	2001
7	Nedungadi Bank	Punjab National Bank (PNB)	2003
8	Global Trust Bank	Axis Bank	2004
9	IDBI Bank	Industrial Development Bank of India (IDBI)	2005

Source: IBA Bulletin

ANALYSIS AND DISCUSSIONS

OPERATIONAL RATIOS

Financial ratios are the analytical tools, applied to financial data, which used to identify trends of the activities, strength and weakness and others which measure the ability of the firm's business. So a combination of the following operational ratios are used to determine the operational performance of merged banks.

1. Price earning ratio (X_1)
2. Ratio of price to book value per share (X_2)
3. Price to cash EPS (X_3)
4. Market capital to share capital (X_4)
5. EV / EBIDT (X_5)
6. Non performing asset to net advance (X_6)
7. Business per employee (X_7)
8. Profit per employee (X_8)
9. Return on asset (X_9)
10. Return on equity (X_{10})
11. Capital adequacy ratio (X_{11})

For the purpose of analysis the ratio has been calculated for each bank for the period of pre-merger and post-merger period separately and the mean ratio has been obtained for the purpose of comparison between the pre and post merger period. The mean ratios, standard deviation and co-efficient of variation for each bank have been calculated for the purpose of analysis and are given below in the form of tables. Apart from this t-Test is also used to test the significance of the mean ratios between pre- and post merger period.

1. PRICE EARNING RATIO (X_1)

The ratio indicates the market value of every rupee earned in the bank. This ratio expresses the relationship between a bank's ability to generate profit and the market price of its equity shares. A high price earning ratio means high price for shares in relation to earnings. This possibility reflects a bright future. A low ratio is undesirable.

Bank	Mean	SD	CV	Mean Growth	Mean Difference	SD Error	DF	t-value
Pre Merger	4.665	4.151	88.99	133.762	-6.2402	3.3261	8	-1.876
Post Merger	10.905	8.574	78.63					**(NS)**

Source: Compiled from Annual Reports of the Banks

The above ratio indicates that the mean ratio of X_1 during pre merger period ranges between 0.424 to 11.665 with an overall mean of 4.665 and CV of 88.99% among the nine banks. Five banks namely SBI, OBC, PNB, AXIS and IDBI have higher mean ratio whereas the UBI and ICICI have lower mean ratio compared to the overall mean ratio. The mean ratio of post merger period ranges between 0.428 to 28.468 with an overall mean of 10.905 and CV of 78.63%. Three banks namely, HDFC, ICICI, and AXIS have higher mean ratio whereas the other six banks have lower mean ratio compared to the overall mean ratio. It is observed from the ratio that the percentage of change in the mean ratio X_1 between the pre and post merger period in case of SBI, ICICI, AXIS and IDBI is positive and it is ranges from 0.943 to 462.29 and in case of OBC and PNB is negative wit the growth of -28.85 and -28.23.

The above t-test shows that there is no significant difference in the mean ratio- X_1 between pre and post period of merger. To conclude, 4 banks enjoy good market price in relation to its earnings.

2. PRICE TO BOOK VALUE PER SHARE (X_2)

This ratio shows the extent to which the market price of the shares is higher than the book value of the share between the pre merger and post merger period. The higher the ratio indicates the shares enjoy good market value compared to the book value of the share.

Bank	Mean	SD	CV	Mean Growth	Mean Difference	SD Error	DF	t-value
Pre Merger	2.099	4.758	226.6	-18.008	-0.3782	1.4767	8	0.256
Post Merger	1.721	1.526	88.66					(NS)

Source: Compiled from Annual Reports of the Banks

The above ratio indicates that the mean ratio of X_2 during pre merger period ranges between -0.566 to 14.604 with an overall mean of 2.099 and CV of 226.6% among the nine banks. Only one bank namely AXIS has higher mean ratio whereas the other eight banks have lower mean ratio compared to the overall mean ratio. The mean ratio of post merger period ranges between 0.122 to 4.956 with an overall mean of 1.721 and CV of 88.66%. Three banks namely, HDFC, ICICI and AXIS have higher mean ratio whereas the other six banks have lower mean ratio compared to the overall mean ratio. It is observed from the ratio that the percentage of change in the mean ratio X_2 between the pre and post merger period in case of ICICI is positive and it ranges 284.65% and in case of SBI, OBC, PNB, AXIS and IDBI is negative ranging from -358.3% to -20.16%.

The above t-test shows that there is no significant difference in the mean ratio- X_2 between pre and post period of merger.

3. PRICE TO CASH EPS (X_3)

This ratio relates the market price of the share with cash earnings per share. It provides shareholders with an indications of the current performance of the equity shares.

Bank	Mean	SD	CV	Mean Growth Rate	Mean Difference	SD Error	DF	t-value
Pre Merger	2.886	2.620	9.76	218.711	-6.3111	2.4058	8	-2.623*
Post Merger	9.198	0.227	3.02					

Source: Compiled from Annual Reports of the Banks

The above ratio indicates that the mean ratio of X_3 during pre merger period ranges between -0.642 to 6.372 with an overall mean of 2.886 and CV of 9.76% among the nine banks. Five banks namely, SBI, OBC, PNB, AXIS and IDBI have higher mean ratio whereas the other four banks have lower mean ratio compared to the overall mean ratio. The mean ratio of post merger period ranges between 0.39 to 22.86 with an overall mean of 9.918 and CV of -3.02%. Four banks namely, HDFC, ICICI, AXIS and IDBI have higher mean ratio whereas the other five banks have lower mean ratio compared to the overall mean ratio. It is observed from the ratio that the percentage of change in the mean ratio X_3 between the pre and post merger period in case of all banks except UBI is positive and it is ranging from 6.559% to 645.5%1 and in case of UBI is negative with -39.25%.

The above t-test shows that there is significant difference in the mean ratio- X_3 between pre and post period of merger.

4. MARKET CAPITAL TO SHARE CAPITAL (X_4)

Ratio of market capital to share capital refers to the market value enjoyed by the banks compared to the book value of share capital. This ratio reflects the current value enjoyed by the shares of the banks in relation to its book value. Hence, higher ratio enhances overall value of the organization.

Bank	Mean	SD	CV	Mean Growth Rate	Mean Difference	SD Error	DF	t-value
Pre Merger	0.352	0.277	78.72	272.159	-0.9580	.4625	8	-2.071
Post Merger	1.310	1.300	99.21					

Source: Compiled from Annual Reports of the Banks

The above ratio indicates that the mean ratio of X_4 during pre merger period ranges between 0.2 to 1.104 with an overall mean of 0.352 and CV of 78.72% among the nine banks. Six banks namely SBI, OBC, UBI, PNB, AXIS and IDBI have higher mean ratio whereas the other three banks have lower mean ratio compared to the overall mean ratio. The mean ratio of post merger period ranges between 0.046 to 2.406 with an overall mean of 1.310 and CV of 99.21%. Two banks namely ICICI and AXIS have higher mean ratio whereas the other seven banks have lower mean ratio compared to the overall mean ratio. It is observed from the ratio that the percentage of change in the mean ratio X_4 between the pre and post merger period in case of SBI, ICICI, PNB, AXIS and IDBI is positive and it is ranging from 13.861% to 661% and in case of OBC and UBI is negative ranging -95.83% and -17.95%.

The above t-test shows that there is no significant difference in the mean ratio- X_1 between pre and post period of merger.

5. EV / EBIDT (X_5)

This ratio refers to the financial capacity of a bank to meet interest, depreciation and taxes and the distribution to equity shareholders. The increased ratio indicates value of earnings available to meet its fixed obligations and the surplus available to shareholders.

Bank	Mean	SD	CV	Mean Growth Rate	Mean Difference	SD Error	DF	t-value
Pre Merger	6.945	5.242	75.48	81.857	-5.6851	1.7344	8	-3.278*
Post Merger	12.630	4.849	38.39					

Source: Compiled from Annual Reports of the Banks

The above ratio indicates that the mean ratio of X_5 during pre merger period ranges between 2.182 to 12.478 with an overall mean of 6.945 and CV of 75.48% among the nine banks. Five banks namely, SBI, OBC, PNB, AXIS and IDBI have higher mean ratio whereas the other four banks have lower mean ratio compared to the overall mean ratio. The mean ratio of post merger period ranges between 2.306 to 17.6 with an overall mean of 12.630 and CV of 38.39%. Five banks namely, HDFC, ICICI, PNB, AXIS and IDBI have higher mean ratio whereas the other four banks have lower mean ratio compared to the overall mean ratio. It is observed from the ratio that the percentage of change in the mean ratio X_5 between the pre and post merger period in case of all banks except OBC is positive and it is ranging from 5.682% to 246.26% and in case of OBC is negative range -6.123%.

The above t-test shows that there is significant difference in the mean ratio- X_5 between pre and post period of merger.

6. NON-PERFORMING ASSET TO NET ADVANCE (X_6)

This ratio indicates the proportion of advance which is not effective in the production income to the banks. Lesser the ratio means that the bank is in a position to minimize the outstanding balance.

Bank	Mean	SD	CV	Mean Growth Rate	Mean Difference	SD Error	DF	t-value
Pre Merger	5.483	5.226	95.33	-36.111	1.9793	2.0428	8	0.969
Post Merger	3.503	2.493	71.18					

Source: Compiled from Annual Reports of the Banks

The above ratio indicates that the mean ratio of X_6 during pre merger period ranges between 2.008 to 17.876 with an overall mean of 5.483 and CV of 95.483% among the nine banks. Three banks namely, UBI, PNB and AXIS have higher mean ratio whereas the other six banks have lower mean ratio compared to the overall mean ratio. The mean ratio of post merger period ranges between 0.514 to 6.942 with an overall mean of 3.503 and CV of 71.18%. Four banks namely, SBI, OBC, BOB and UBI have higher mean ratio whereas the other five banks have lower mean ratio compared to the overall mean ratio. It is observed from the ratio that the percentage of change in the mean ratio X_6 between the pre and post merger period in case of SBI, OBC and BOB is positive and it is ranging from 18.523% to 217.53% and in case of UBI, ICICI, PNB, AXIS and IDBI is negative ranging from -93.19% to -6.894%.

The above t-test shows that there is no significant difference in the mean ratio- X_6 between pre and post period of merger.

7. BUSINESS PER EMPLOYEE (X_7)

This ratio assesses the productivity of the employee in terms of the business per employee. It is one of the most often used ratios for productivity measurement of banks. So higher the ratio represents better performance of employees.

Bank	Mean	SD	CV	Mean Growth Rate	Mean Difference	SD Error	DF	t-value
Pre Merger	2.327	3.146	135.2	117.877	-2.7431	.9721	8	-2.822*
Post Merger	5.070	3.970	78.30					

Source: Compiled from Annual Reports of the Banks

The above ratio indicates that the mean ratio of X_7 during pre merger period ranges between 0.416 to 8.172 with an overall mean of 2.327 and CV of 135.2% among the nine banks. Two banks namely AXIS and IDBI have higher mean ratio whereas the other seven banks have lower mean ratio compared to the overall mean ratio. The mean ratio of post merger period ranges between 0.71 to 10.228 with an overall mean of 5.070 and CV of 78.30%. Four banks namely HDFC, ICICI, AXIS and IDBI have higher mean ratio whereas the other five banks have lower mean ratio compared to the overall mean ratio. It is observed from the ratio that the percentage of change in the mean ratio X_7 between the pre and post merger period in case of all banks is positive and it is ranging from 25.159% to 591.97%.

The above t-test shows that there is significant difference in the mean ratio- X_7 between pre and post period of merger.

8. PROFIT PER EMPLOYEE (X_8)

This ratio assess the productivity of the employees in terms of the profit earned per employee which shows the extent of the employees effort converted into profit for the service sector.

Bank	Mean	SD	CV	Mean Growth Rate	Mean Difference	SD Error	DF	t-value
Pre Merger	0.202	0.021	106.4	-56.930	-0.0669	0.0277	8	-2.418*
Post Merger	0.087	0.095	110.1					

Source: Compiled from Annual Reports of the Banks

The above ratio indicates that the mean ratio of X_8 during pre merger period ranges between 0.006 to 0.062 with an overall mean of 0.202 and CV of 106.4% among the nine banks. The entire mean ratio is lower compared to the overall mean ratio. The mean ratio of post merger period ranges between 0.02 to 0.322 with an overall mean of 0.087 and CV of 110.1%. Only one bank namely HDFC higher mean ratio where as the other eight banks have lower mean ratio compared to the overall mean ratio. It is observed from the ratio that the percentage of change in the mean ratio X_8 between the pre and post merger period in case of all banks is positive and it is ranging from 42.857% to 700%.

The above t-test shows that there is significant difference in the mean ratio- X_8 between pre and post period of merger.

9. RETURN ON ASSET (X_9)

The banks use various resources like human resources, equipment, money and other assets. The proper and optimum utilization of these resources can maximize the profit of the bank. The ratio returns on asset (X_9) refers the extent to which the asset contributed to the profit earned by the banks. It assesses the efficiency of the banks in managing the assets. So, higher the ratio, the more efficient the management is using the funds invested by the banks.

Bank	Mean	SD	CV	Mean Growth Rate	Mean Difference	SD Error	DF	t-value
Pre Merger	0.569	0.331	58.16	1.544	-0.3158	0.1381	8	-2.286*
Post Merger	0.879	0.393	44.77					

Source: Compiled from Annual Reports of the Banks

The above ratio indicates that the mean ratio of X_9 during pre merger period ranges between 0.218 to 1.522 with an overall mean of 0.569 and CV of 58.16% among the nine banks. Seven banks namely SBI, BOB, UBI, ICICI, PNB AXIS and IDBI have higher mean ratio whereas the other two banks have lower mean ratio compared to the overall mean ratio. The mean ratio of post merger period ranges between 0.128 to 1.12 with an overall mean of 0.879 and CV of 44.77%. Three banks namely OBC, ICICI, and AXIS have higher mean ratio whereas the other six banks have lower mean ratio compared to the overall mean ratio. It is observed from the ratio that the percentage of change in the mean ratio X_9 between the pre and post merger period in case of SBI, OBC and HDFC is positive and its ranging from 37.615% to 106.53% and in case of BOB, UBI, ICICI, PNB, AXIS and IDBI is negative ranging from -88.04% to -17.98%.

The above t-test shows that there is no significant difference in the mean ratio- X_9 between pre and post period of merger.

10. RETURN ON EQUITY (X_{10})

This ratio is a measure of the return to the ordinary share holders. The higher ratio of return on equity indicates better utilization of owner's funds.

Bank	Mean	SD	CV	Mean Growth Rate	Mean Difference	SD Error	DF	t-value
Pre Merger	14.394	4.298	29.87	20.432	-2.9417	2.3302	8	-1.262*
Post Merger	17.335	4.238	24.45					

Source: Compiled from Annual Reports of the Banks

The above ratio indicates that the mean ratio of X_{10} during pre merger period ranges between 8.2 to 20.056 with an overall mean of 14.394 and CV of 29.87% among the nine banks. Four banks namely, OBC, ICICI, PNB and IDBI have higher mean ratio whereas the other banks have lower mean ratio compared to the overall mean ratio. The mean ratio of post merger period ranges between 8.982 to 22.038 with an overall mean of 17.335 and CV of 24.45%. Four banks namely OBC, HDFC, PNB and AXIS have higher mean ratio whereas the other five banks have lower mean ratio compared to the overall mean ratio. It is observed from the ratio that the percentage of change in the mean ratio X_{10} between the pre and post merger period in case of SBI, OBC, BOB, UBI, HDFC, PNB and AXIS is positive and it is ranging from 11.482% to 108.54% and in case of ICICI and IDBI is negative range -55.22% and -28.89%.

The above t-test shows that there is no significant difference in the mean ratio- X_{10} between pre and post period of merger.

11. CAPITAL ADEQUACY RATIO (X_{11})

This ratio refers to the strength of the banks in meeting the additional risk that the bank may have to face during the course of their operations. The higher the ratio indicates the security available to the stake holders.

Bank	Mean	SD	CV	Mean Growth Rate	Mean Difference	SD Error	DF	t-value
Pre Merger	7.065	3.477	49.22	82.179	-5.8060	1.0160	8	-5.714*
Post Merger	12.871	1.675	13.02					

Source: Compiled from Annual Reports of the Banks

The above ratio indicates that the mean ratio of X_{11} during pre merger period ranges between 3.024 to 10.61 with an overall mean of 7.065 and CV of 49.22% among the nine banks. Six banks namely, SBI, OBC, BOB, ICICI, AXIS and IDBI have higher mean ratio whereas the other three banks have lower mean ratio compared to the overall mean ratio. The mean ratio of post merger period ranges between 11.25 to 16.18 with an overall mean of 12.871 and CV of 13.02%. Three banks namely, SBI, OBC and IDBI have higher mean ratio whereas the other six banks have lower mean ratio compared to the overall mean ratio. It is observed from the ratio that the percentage of change in the mean ratio X_{11} between the pre and post merger period in case of all banks is positive and it is ranging from 17.309% to 275.99%.

The above t-test shows that there is highly significant difference in the mean ratio- X_{11} between pre and post period of merger.

CONCLUSION

The pre and post merger of banks in this research in the specified periodclearly reveals that there is no significant difference in Price Earning, Book value per share, Market Capital, Non Performing Assets, Return On Assets, and Return On Earning. At the same time it has a strong relationship that was reported in the following ratio, viz., Earning Per Share (EPS), Earning Before Interest and Tax (EBIT), Business per Employee, Profit per Employee and Capital adequacy. We may conclude that the pre and post merger banks are running efficiently on the basis of statistical information available on indicators of operational efficiency.

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