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Do mergers and consolidation of Indian banks improve performance? an evidence-based study of merged public sector banks in India

Sudhakar Puskar, Kushendra Mishra
Department of Rural Management, School of Management Studies, Babasaheb Bhimrao Ambedkar University, Lucknow, India
E-mail: *Sudhakar.puskar@gmail.com*

Abstract. The aim of this paper analyses Bank Mergers & Consolidation and offer insight into the effect of Mergers & Consolidation on the performance of banks after the merger in terms of the banks 'financial and liquidity status. Banks merger cycle is not a new phenomenon in India. Banks in India had consolidated as early as 1920 when the Bank of Bengal, Bank of Bombay and Bank of Madras merged into Imperial Bank of India, now commonly known as the State Bank of India. Several acquisition and merger deal by banks have since taken place in India. According to a study by the Institute of Mergers, Acquisitions and Alliances (IMAA), Merger & Consolidation in the Indian Banking sector witnessed many ups and downs between 1985 and 2013, with significantly high Merger & Consolidation transactions reported during the period 1995 to 1996. Some of the major banks since 1990 have been Bank of Tamil Nadu Ltd. with Indian Overseas Bank, Bank of Punjab Ltd with IDBI Bank Ltd., State Bank of Indore with State Bank of India and many more. By using ten different financial ratios, it explores the consequences of Merger & Consolidation. The thesis hires research staff ex-post facto and spans fifteen years (2000–2015). The data is composed of individual Banks and RBI's reported annual reports. The analysis finds a non-significant negative correlation between the financial results of Merger & Restructuring and Banks. Nevertheless, the situation around post-merger liquidity has improved. However, the marginal increase in the position of liquidity does not suffice to dismiss the null hypothesis. These results show that banks 'mergers & acquisitions aren't a panacea for banking sector ills. Comparatively, forced mergers & restructuring will adversely affect prospects for banks.

Keywords. Bank, merger & consolidation, financial performance, liquidity position, RBI.

1. Introduction

Banks merger cycle is not a new phenomenon in India. Banks in India had consolidated as early as 1920 when Bank of Bengal, Bank of Bombay and Bank of Madras merged into Imperial Bank of India, now commonly known as the State Bank of India. Several acquisition and merger deal by banks have since taken place in India. According to a study by the Institute of Mergers, Acquisitions and Alliances (IMAA), Merger & Consolidation in the Indian Banking sector witnessed many ups and downs between 1985 and 2013, with significantly high Merger & Consolidation transactions reported during the period 1995 to 1996. Some of the major banks since 1990 have been Bank of Tamil Nadu Ltd. with Indian Overseas Bank, Bank of Punjab Ltd with IDBI Bank Ltd., State Bank of Indore with State Bank of India and many more.

This study aims to determine the effects of Merger & Consolidation on the financial performance and liquidity position of the Bank after merger. To this end, the researcher has taken from the year 2015 to 2022 a list of all Merger & Acquisition transactions occurring at Scheduled Commercial Banks in India. Several parameters have been selected for mapping the effects of mergers and acquisitions during the period, such as ROE, ROA, Capital Adequacy Ratio, etc.

2. Review of Literature

Several studies have empirically examined whether Merger & Consolidation are keys to Banking sector ills.

Kollapuri reviewed the consolidation and efficiency of the Bank for 16 major consolidation deals in India between 1995 and 2013. Using input-oriented efficiency measurement (DEA) methods non-parametric median tests and Tobit regression analysis, the study showed that consolidation increased output in most cases only when pure technical output scores were taken into account. In most cases, there was no major post-consolidation change in total performance and size performance [1-22].

Okoye and Modebe The analysis reveal three results:

(i) There is no substantial difference between pre-and post-merger and acquisition cycles in the income output of the Banking sector (as calculated by asset return).

(ii) There is evidence of a substantial improvement in the Bank's asset mix pre- and post-merger and means of acquisition.

(iii) The capital adequacy ratio between the periods is substantial. From the above results, the study concludes that mergers and acquisitions have a major impact on Nigerian banking sector efficiency [21].

Ghosh and Dutta Studied five parameters capable of shedding light on Indian Bank results during the pre-and post-merger phases between 2000 and 2010. In other terms, three parameters in the post-merger era, Capital Adequacy Ratio, ROCE and EPS revealed a better performance. The remaining two factors, HCROI (Human Capital Return on Investment) and loans and advances, chosen for performance measurement, reported reduced performance in the post-

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merger period. The study concluded that because three out of five parameters show [13].

Masud studied the effect of merger and acquisition on the efficiency of the Banks was analyzed based on three financial ratios: ROA, ROE and EPS. The study results showed that banks have shown a slight improvement in their financial efficiency, even though the results of the first year of the merger have been declining but it has improved and continues to improve with time [23].

Chadamiya and Menapara) Conducted a financial review of the pre-and post-merger impact of the Banking sector in India. Based on the students' t-distribution study, they have concluded that mergers and acquisitions typically have a limited impact on banks 'financial results. However, a financially sound bank's profitability is adversely affected when it is forcibly combined with a weak bank [19].

Khan and Ahmad, A pre- and post-merger review of combined Indian Banks was performed. He took metrics such as gross profit margin, net profit margin, operating profit margin, return on capital employed (ROCE), return on equity (ROE) and debt-equity ratio and analyzed their effect on the performance of banks. The study shows that the performance of Banks has improved significantly after M&A [18].

Kouser and Saba study based on the performance review of commercial banks listed on the Karachi Stock Exchange (KSE), Bank's post-merger performance was analyzed. The report notes that all commercial banks 'operating financial efficiency has declined [26-33].

Mehta and Ram Kumar Examined the reasons for Indian Banking Mergers and Acquisitions. We concluded that while M&As may have many motives, the primary motive is to establish a few larger banks in the Indian banking sector [25].

3. Hypotheses

The study aims to evaluate the effects of Merger & Consolidation on banks 'financial results and liquidity position after merger. The researcher has formulated 2 hypotheses for this purpose:

1) There is no significant improvement in the financial performance of Banks after the merger. H0: $\mu1 = \mu2$; H1: $\mu1 \neq \mu2$

2) There is no significant improvement in the liquidity position of Banks after merger.H0: $\mu1 = \mu2$; H1: $\mu1 \neq \mu2$

4. Research Methodology

This study is carried out based on an ex-post facto research design. The study is essentially empirical. For judging the effects of Merger & Consolidation on Banks' performance, a period of three years before and post-merger has been studied and compared. The performance of Banks has been measured against a set of certain identified ratios, which are broadly divided into two categories: profitability ratios and liquidity ratios. Table 1 shows the list of profitability ratios that are used for measuring the financial performance of Banks. Whereas, Table 2 shows the list of liquidity radios for measuring the liquidity position of Banks.

Table 1. Profitability Ratios

S. No	Ratio	Measurement
1	Return on Assets (ROA)	(Profit after tax / Average Total assets) *100
2	Return on Equity (ROE)	Net Profit / (Capital + Reserves and Surplus) *100
3	Interest Income to Total Assets	(Interest earned / Total assets) *100
4	Non-Interest Income to Total Assets	(Other income / Total assets) *100
5	Net Interest Margin	(Interest earned - Interest paid) / Total assets *100
6	Operating Profits to Total Assets	(Operating profit / Total assets) *100
7	**Return on Advances**	**(Interest earned on advances and bills / Advances) *100**

Table 2. Liquidity Radios

S. No	Ratio	Measurement
	Capital Adequacy Ratio (CAR)	(Tier 1 capital + Tier 2 capital) / Risk-weighted assets
	Net NPAs to Net Advances	Net NPA / Net Advances
	Burden to Total Assets	(Operating expenses - Other income) / Total assets *100

Table 3. List of Bank Mergers

S. No	Proposer Bank	Merged Bank
1	**Canara Bank**	Syndicate Bank
2	**Punjab National Bank**	Oriental Bank of Commerce United Bank of India
3	**Indian Bank**	Allahabad Bank
4	**Union Bank of India**	Andhra Bank Corporation Bank
5	**Bank of Baroda**	Vijaya Bank Dena Bank

Source: RBI report and respective Bank's reports

Sampling

For research, the researcher has taken a sample of all Merger & Consolidation transactions occurring in Scheduled Commercial Banks in India from the year 2015 to 2022, for which post-merger three years data is available. As a result, 7 Banks' mergers and acquisitions are the subject of study. The list of all Merger & Consolidation transactions under consideration has been presented in Table 3.

5. Data Collection and Analysis

Table 4. Paired Samples Statistics

Performance Parameters		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	ROA (Pre)	.9414	7	.30963	.11703
	ROA (Post)	.9571	7	.15041	.05685
Pair 2	ROE (Pre)	18.1510	7	6.14744	2.32351
	ROE (Post)	14.8157	7	3.13939	1.18658
Pair 3	Interest Income to TA (Pre)	8.5400	7	.93238	.35241
	Interest Income to TA (Post)	7.6329	7	.52359	.19790
Pair 4	Non-Interest Income to TA (Pre)	1.5138	7	.18592	.07027
	Non-Interest Income to TA (Post)	1.1986	7	.21443	.08105
Pair 5	Net Interest Margin (Pre)	3.1043	7	.42073	.15902
	Net Interest Margin (Post)	2.9224	7	.34954	.13211
Pair 6	Return on Advances (Pre)	9.6838	7	.97868	.36991
	Return on Advances (Post)	8.8005	7	.94238	.35618
Pair 7	Operating Profits to TA (Pre)	2.3643	7	.67948	.25682
	Operating Profits to TA (Post)	2.1119	7	.23351	.08826
Pair 8	Burden to TA (Pre)	.7414	7	.44170	.16695
	Burden to TA (Post)	.8110	7	.23270	.08795
Pair 9	Capital Adequacy Ratio (Pre)	12.6862	7	.78730	.29757
	Capital Adequacy Ratio (Post)	12.9752	7	.32323	.12217
Pair 10	Net NPAs to Net Advances (Pre)	3.6771	7	2.96834	1.12193
	Net NPAs to Net Advances (Post)	1.2657	7	.68213	.25782

Table 5. Paired Samples Test

Performance Parameters		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	ROA (Pre & Post)	-.01571	.32614	.12327	-.31735	.28592	-.127	6	.903
Pair 2	ROE (Pre & Post)	3.33524	6.98939	2.64174	-3.12887	9.79935	1.263	6	.254
Pair 3	Interest Income to TA (Pre & Post)	.90714	1.23574	.46706	-.23572	2.05001	1.942	6	.100
Pair 4	Non-Interest Income to TA (Pre & Post)	.31524	.37766	.14274	-.03404	.66451	2.208	6	.069
Pair 5	Net Interest Margin (Pre & Post)	.18190	.70973	.26825	-.47448	.83829	.678	6	.523
Pair 6	Return on Advances (Pre & Post)	.88333	1.69753	.64161	-.68662	2.45329	1.377	6	.218
Pair 7	Operating Profits to TA (Pre & Post)	.25238	.87239	.32973	-.55444	1.05920	.765	6	.473
Pair 8	Burden to TA (Pre & Post)	-.06952	.40464	.15294	-.44375	.30470	-.455	6	.665
Pair 9	Capital Adequacy Ratio (Pre & Post)	-.28905	.92606	.35002	-1.14551	.56742	-.826	6	.441
Pair 10	Net NPAs to Net Advances (Pre & Post)	2.41143	3.33491	1.26048	-.67285	5.49570	1.913	6	.104

The data that has been used in the study is secondary which has been derived from annual reports of respective Banks, RBI annual reports, RBI basic statistical returns table and newspapers.

For analysing changes in performance during the post-merger phase, the means of performance parameters have been subjected to a paired sample t-test at a 5% level of confidence. Further, based on the results of t-test, the p-value has been derived to judge whether the changes in performance parameters post-merger are significant or not.

Table 6. Changes Post Merger

Ratio	Mean (μ1)	Mean (μ2)	Change	P Value	Statistic Change	Ho
ROA	.9414	.9571	0.0157	.903	Insignificant	Accepted
ROE	18.1510	14.8157	-3.3353	.254	Insignificant	Accepted
Interest Income to TA	8.5400	7.6329	-0.9071	.100	Insignificant	Accepted
Non-interest income to TA	1.5138	1.1986	-0.3152	.069	Insignificant	Accepted
Net Interest Margin	3.1043	2.9224	-0.1819	.523	Insignificant	Accepted
Return on Advances	9.6838	8.8005	-0.8833	.218	Insignificant	Accepted
Operating Profits to TA	2.3643	2.1119	-0.2524	.473	Insignificant	Accepted
Burden to TA	.7414	.8110	0.0696	.665	Insignificant	Accepted
Capital Adequacy Ratio	12.6862	12.9752	0.289	.441	Insignificant	Accepted
Net NPAs to Net Advances	3.6771	1.2657	-2.4114	.104	Insignificant	Accepted

6. Findings and Discussion

From **Table 6**, that can be observed overall financial routine of Banks has deteriorated over the period. Except for ROA, all other measures of financial performance viz, ROE, interest income to TA, non-interest income to TA, net interest margin, return on advances and operating profits to TA have declined post-merger. This shows that mergers and acquisitions may have negative effects on the financial performance of Banks. Crucial measures of financial performance like ROE, interest income, operating profits, etc. have essentially registered a negative growth rate after a merger, signifying the futility of merger strategy for Banks' turnaround.

Similarly, the liquidity position of Banks post-merger is not satisfactory. However, in contrast to financial performance, the liquidity position has slightly improved after merger of Banks. All three measures viz, burden to TA, capital adequacy ratio and Net-NPAs to net advances have shown improvement over the period. This signifies that Mergers & Consolidation can slightly improve the liquidity position of Banks. But the crucial question is whether this liquidity settlement is worth taking because of poor financial performance of Banks after the merger.

7. Conclusion

This study attempted to gauge the impact of mergers and acquisitions on the financial performance and liquidity position of Banks. For this purpose, the study analysed the performance of selected merged Public Sector Banks based on a comparison of pre- and post-merger financial ratios.

In conclusion, the strategy of Merger & Consolidation to improve the performance of Banks is highly doubtful. The results of the analysis show that there is no improvement in the financial performance of Banks after the merger. Table 6 reveals that financial performance has worsened after merger leading to acceptance of the first null hypothesis.

On liquidity front, there is a slight improvement in the liquidity position of Banks after merger. However, the improvement in three measures is not sufficient enough to make them statistically significant leading to acceptance of second null hypothesis.

In Indian Banking context, the policy of M&A has widely been used as a safeguard mechanism, to prevent weak Banks from failing. Though the policy may be effective, to a limited extent, in tackling the issue of rising NPAs, comes at the cost of operational performance and profitability of Banks. This makes Indian financial system weaker rather than stronger. As such the policy of Banking M&A should be guided by the same spirits that guide corporate M&As, that is business synergy and economy. The more prudent strategy will be a voluntary merger of two strong Banks to gain traction in international financial market and domestic credit market.

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