

Post-Merger Dynamics: A Comprehensive Study of Performance of Indian Public Sector Banks

Manash Pratim Goswami¹, Santosh Kumar Mahapatra²

¹Research Scholar, Department of Commerce, Gauhati University, Assam, India

²Professor, Department of Commerce, Gauhati University, Assam, India

Abstract

This study examines the impact of mergers on bank performance, focusing on the mergers that took place in the year 2020 among 10 Public Sector Banks (PSBs) in India. The findings unveil positive shifts in the post-merger period by analysing key financial indicators, including profitability, liquidity, solvency, employee efficiency, and asset quality. Notable enhancements in Return on Assets (ROA) and Return on Equity (ROE) indicate improved profitability and shareholder returns. Changes in Asset quality and solvency ratio reflect greater stability, while employee efficiency indicators demonstrate increased productivity. This study adds to the merger literature in emerging markets and provides thorough evaluations of India's 2020 mega bank consolidation.

Keywords: Merger, Public Sector Bank, Profitability, Asset Quality, Efficiency

1. Introduction

A strong banking system is an utmost necessity for any economy for its financial stability and growth. Consolidation of banks through mergers and acquisitions (M&A) has been on the rise in recent years. Merger was embraced as a strategic initiative for expansion in developed countries as early as the late 1800s. However, mergers have become one of the favourite growth strategies for Indian corporates post-1991 reforms (Basant, 2000; Chauhan, 2011; Pawaskar, 2001; Sinha & Gupta, 2011). Mergers in India are often pushed by the government's policy and strategy, rather than market forces, as in the case of developed countries (Jayaraman et al., 2014; Ravichandran et al., 2010). The Narasimhan Committee on Banking Reforms in 1998 suggested a few large banks rather than many small banks in India. Historically, merger & acquisition activity in India began in 1920, when three presidency banks merged to form the Imperial Bank of India (Ravichandran et al., 2010). After independence, many loss-making Regional Rural Banks have been reduced over the years by way of mergers (Das, 2021). Several weak banks like New Bank of India, Bank of Karad Ltd., United Western Bank, Bharat Overseas Bank, etc. were merged with strong banks to restructure (Kaur & Kaur, 2010). SBI and its associates, along with Bharatiya Mahila Bank, became a single entity in 2017. Dena Bank & Vijaya Bank merged with Bank of Baroda in 2019. The Indian government, recognising the need for a robust and competitive banking industry, further merged 10 Indian Public Sector Banks (PSBs) into 4 entities in the year 2020 to foster synergies, streamline operations, and improve the financial health of PSBs.

With these mergers, banks are now 'too-big-to-fail'. These mergers have structurally changed the sector in terms of resources, management, competitiveness, human resource management, etc. Thus, it is vital to analyse the impact of such large-scale consolidation on the performance of these banks. This study delves

into the intricate interplay between bank mergers and their subsequent effects on various parameters of bank performance. This study aims to provide a thorough assessment of the effects of the 2020 PSBs mergers by analysing key performance indicators such as profitability, asset quality, operational efficiency, liquidity, and solvency.

2. Review of Literature

A large number of studies on banking mergers have been conducted, both globally and in India. A systematic review of the performance of M&A by Mehrotra & Sahay (2018) found a lack of studies on mergers in emerging economies, as most of the studies were confined to developed economies. Pawaskar (2001) found no improvement in post-merger profit after studying 36 mergers between 1992 and 1995, using pre and post-merger data of four and three years, respectively. Kumar & Bansal (2008) examined, in the Indian context, whether mergers generate synergy or not, using ratio analysis and correlation with 3 years of pre and post-merger data. The findings show that the acquirers were able to generate synergy in the long haul, in the form of increased cash flow, diversification, and cost reductions, among other things. Mantravadi & Reddy (2008) discovered that the operating financial performance had decreased after mergers, as evidenced by a reduction in profitability ratios as well as returns on invested capital and net worth. Sinha et al. (2010) identified M&A-based consolidation as one of the options for Indian financial sector organisations to deal with fierce competition. They discovered a considerable improvement in the EPS, D/E ratio, and PBT, but no significant improvement was detected in the firms' liquidity position.

Sinha & Gupta (2011) examined 80 cases of M&A in the financial sector of India from 1993 to 2010 using 3 years of pre and post-merger data. The study reported a positive impact on profitability and a negative effect on liquidity after the merger. Mixed results are shown for cost efficiency and interest coverage. Leepsa & Mishra (2012) investigated mergers in the manufacturing industry and discovered that the current ratio, quick ratio, and interest coverage ratio all improved following the merger. Kalra et al. (2013) used paired sample t-tests on accounting ratios to investigate how the merger affected the financial performance of 10 Indian banks. There was no discernible effect on the banks' financial performance as a result of the merger. Abbas et al. (2014) found no improvement in evaluating the effect of mergers of Pakistani banks by comparing pre & post-merger accounting ratios related to liquidity, leverage, profitability & efficiency. The merged entities failed to improve cost synergies. Rani et al. (2015) studied 305 mergers in India during 2003-08, taking 5 years of pre and post-data, using ratio analysis covering profitability, efficiency, expenses, liquidity, and leverage. The study revealed that the problem of excess liquidity has been resolved, while the impact on asset turnover and leverage cannot be significantly inferred. Patel (2018) found that mergers have a detrimental effect on ROE, ROA, net profit margin, yield on advances, and yield on investment.

A recent study by Chaudhary & Kaur (2021) found that the profitability performance of regional rural banks in India has increased marginally after the M&As exercise. Adhikari et al. (2023) assessed how the financial performance of two commercial banks in Nepal was affected by the merger and found a mixed impact on financial performance ratios.

3. Research Objectives

Studies on banking mergers in developing countries are limited. Additionally, existing literature on bank mergers presents inconclusive results. This makes it challenging to establish a clear link between mergers

and bank performance. Thus, this study conducts a contemporary evaluation of the 2020 Indian PSB mergers on bank performance.

The following objectives are proposed for the study:

- a. To evaluate the profitability of the consolidated banks before and after the mergers;
- b. To assess the liquidity position of the consolidated banks before and after the mergers;
- c. To evaluate the solvency of the consolidated banks before and after the mergers;
- d. To assess the employee efficiency of the consolidated banks before and after the mergers; and
- e. To investigate the asset quality of the consolidated banks before and after the mergers.

4. Research Methodology

The study is descriptive in nature and uses ratio analysis as the key analytical tool. The four bank mergers under investigation are listed in Table 1.

Table 1: Banks Involved in Mergers in 2020

SI No.	Surviving Bank	Merged Bank
1	Punjab National Bank (PNB)	Oriental Bank of Commerce, United Bank of India
2	Canara Bank (CNRB)	Syndicate Bank
3	Union Bank India (UBI)	Andhra Bank, Corporation Bank
4	Indian Bank (INDB)	Allahabad Bank

Source: Compiled by the authors

The study uses secondary data sources, primarily the Database of Indian Economy (DBIE) maintained by RBI. The researcher collects data for four years, two years before and two years after the merger. The year 2017-18 (T-2) and 2018-19 (T-1) are considered as the pre-merger period, while 2020-21 (T+1) and 2021-22 (T+2) are considered for the post-merger period. The year 2020 (T-0) is excluded as the mergers were affected that year. The analysis of the collected data involves two main steps: presenting the pre-merger and post-merger differences of various ratios using tables and testing the significance of these changes using paired samples t-tests. Table 2 lists the various bank-specific ratios used in this study.

Table 2: Bank-Specific Ratios Analysed in the Study

Sl. No.	Parameter	Ratio	Acronym
1	Profitability Ratios	Return on Assets	ROA
		Return on Equity	ROE
		Net Interest Margin	NIM
2	Liquidity Ratio	Cash Deposit Ratio	CaDR
		Credit Deposit Ratio	CDR
3	Solvency Ratio	Capital Adequacy Ratio	CAR
4	Employee Efficiency Ratio	Business Per Employee	BPE
		Profit Per Employee	PPE
5	Asset Quality Ratio	Ratio of Net Non-Performing Assets to Net Advances	NNPANA

Source: Compiled by the authors

5. Analysis of Data

The data analysis section presents tables providing a comparative analysis of various ratios before and after the 2020 PSB mergers, followed by a consolidated summary of paired t-test results.

Table 3: Comparison of Return on Assets (In Percentage)

Period	PNB	CNRB	INDB	UBI
Pre-merger	-1.43	-0.35	0.33	-0.83
Post-merger	0.21	0.36	0.57	0.37
Change	1.63	0.70	0.24	1.20
Average	0.94			

Source: Authors' calculation

Table 3 indicates that, on average, the banks experienced a positive effect on ROA from the merger, with an average change of 0.94%. PNB and UBI exhibited the most significant improvements, with changes of 1.63% and 1.20%, respectively. CNRB and INDB also showed improvements, albeit to a lesser extent, with changes of 0.70% and 0.24%, respectively. These results suggest that the merger had a generally positive impact on the banks' performance in terms of ROA.

Table 4: Comparison of Return on Equity (In Percentage)

Period	PNB	CNRB	INDB	UBI
Pre-merger	-26.39	-5.61	4.39	-16.41
Post-merger	3.00	6.85	8.91	6.21
Change	29.38	12.46	4.52	22.62
Average	17.25			

Source: Authors' calculation

Table 4 shows that the ROE of four banks showed an average change of 17.25%. PNB experienced a significant improvement, with a change of 29.38%, while CNRB and UBI also showed notable improvements with changes of 12.46% and 22.62%, respectively. INDB exhibited a relatively modest increase with a change of 4.52%. These results suggest that the merger had a positive impact on the banks' ROE, with PNB, CNRB, and UBI experiencing substantial improvements.

Table 5: Comparison of Net Interest Margin (In Percentage)

Period	PNB	CNRB	INDB	UBI
Pre-merger	2.12	2.12	2.65	2.03
Post-merger	2.33	2.20	2.61	2.41
Change	0.21	0.08	-0.04	0.38
Average	0.16			

Source: Authors' calculation

Table 5 shows the changes in NIM before and after the mergers. PNB and CNRB experienced increases of 0.21 and 0.08, respectively. INDB showed a slight decrease of -0.04, while UBI had a significant

increase of 0.38. The average change in NIM across all banks was 0.16, suggesting an overall improvement in interest spread post-merger.

Table 6: Comparison of Cash Deposit Ratio (In Percentage)

Period	PNB	CNRB	INDB	UBI
Pre-merger	4.62	4.60	4.94	5.07
Post-merger	4.46	4.51	4.59	4.28
Change	-0.16	-0.10	-0.35	-0.79
Average	-0.35			

Source: Authors' calculation

Table 6 depicts the changes in the Cash Deposit Ratio before and after the mergers. All banks experienced decreases after the mergers, with UBI having the highest decrease of -0.79. The average change in the Cash Deposit Ratio across all banks was -0.35.

Table 7: Comparison of Credit Deposit Ratio (In Percentage)

Period	PNB	CNRB	INDB	UBI
Pre-merger	67.66	72.07	75.02	71.04
Post-merger	62.24	63.99	66.48	64.00
Change	-5.42	-8.08	-8.54	-7.04
Average	-7.27			

Source: Authors' calculation

Table 7 showcases that, in terms of Credit Deposit Ratio, all banks experienced decreases, with INDB having the highest decrease of 8.54. The average change in the Credit Deposit Ratio across all banks was -7.27, signifying a decrease in the proportion of credit to total deposits after the mergers.

Table 8: Comparison of Capital Adequacy Ratio (In Percentage)

Period	PNB	CNRB	INDB	UBI
Pre-merger	9.47	12.56	12.88	11.62
Post-merger	14.41	14.04	16.12	13.54
Change	4.95	1.48	3.24	1.92
Average	2.90			

Source: Authors' calculation

Table 8 presents the Capital Adequacy Ratio before and after the mergers. All banks experienced increases, with INDB having the highest increase of 3.24. The average change in the Capital Adequacy Ratio across all banks was 2.90, indicating an overall improvement in the capital adequacy post-merger.

Table 9: Comparison of Business Per Employee (In Rupees Lakh)

Period	PNB	CNRB	INDB	UBI
Pre-merger	1577.00	1593.68	2015.00	1831.00

Post-merger	1913.00	1902.50	2368.50	1985.50
Change	336.00	308.83	353.50	154.50
Average	288.21			

Source: Authors' calculation

Table 9 shows the Business per Employee (in rupees lakh) before and after the mergers. All banks experienced increases, with INDB having the highest increase of 353.50. The average change in the business per employee across all banks was 288.21, indicating an overall improvement in business efficiency post-merger.

Table 10: Comparison of Profit Per Employee (In Rupees Lakh)

Period	PNB	CNRB	INDB	UBI
Pre-merger	-16.00	-3.00	4.00	-11.00
Post-merger	3.00	5.00	8.57	5.50
Change	19.00	8.00	4.57	16.50
Average	12.02			

Source: Authors' calculation

Table 10 presents the Profit per Employee (in rupees lakh) before and after the mergers. All banks experienced increases, with PNB having the highest increase of 19. The average change in the profit per employee across all banks was 12.02, indicating an overall improvement in profitability per employee post-merger.

Table 11: Comparison of Ratio of Net NPA to Net Advances (In Percentage)

Period	PNB	CNRB	INDB	UBI
Pre-merger	8.90	6.43	3.78	7.64
Post-merger	5.27	3.24	2.82	4.15
Change	-3.64	-3.19	-0.96	-3.49
Average	-2.82			

Source: Authors' calculation

Table 11 shows the Ratio of Net Non-Performing Assets (NPA) to Net Advances before and after the mergers. All banks experienced decreases, with PNB having the highest decrease of 3.64. The average change in the Ratio of Net NPA to Net Advances across all banks was -2.82, signifying an overall improvement in asset quality post-merger.

Table 12: Results of Paired Sample t-test

Ratio	Mean Change	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
ROA	-0.943	0.603	0.302	-1.902	0.017	-3.125	3	0.05*
ROE	-17.248	10.969	5.484	-34.702	0.205	-3.145	3	0.05*
NIM	-0.159	0.179	0.089	-0.443	0.126	-1.775	3	0.17

CaDR	0.349	0.313	0.156	-0.148	0.847	2.234	3	0.11
CDR	7.271	1.382	0.691	5.073	9.470	10.524	3	0.00*
CAR	-2.896	1.557	0.779	-5.374	-0.418	-3.720	3	0.03*
BPE	-288.206	91.013	45.506	-433.028	-143.385	-6.333	3	0.01*
PPE	-12.016	6.844	3.422	-22.907	-1.126	-3.511	3	0.04*
NNPANA	2.818	1.252	0.626	0.825	4.810	4.501	3	0.02*

(* Indicates statistical significance at 5% level of significance)

Source: Authors' calculation

Table 12 summarises the results of paired samples t-tests. Notably, there was a significant positive change in ROA and ROE, as indicated by mean changes of -0.943 and -17.248, respectively, with p-values of 0.05. Conversely, the NIM and CaDR showed no significant changes. The CDR exhibited a highly significant negative change, while CAR demonstrated a significant positive change. Additionally, Business Per Employee and Profit Per Employee both showed significant positive changes. NNPANA also displayed a significant improvement.

6. Findings

The examination of various financial parameters reveals notable trends and outcomes in the post-merger period. Both ROA and ROE showed significant enhancement in overall profitability and operational efficiency. This favourable impact on shareholder returns is likely because of increased net income and improved capital utilisation. Though statistically insignificant, the post-merger increase in NIM suggests an improvement in interest spread, probably due to effective asset-liability management. The significant negative change in the CDR indicates a shift in lending policies or heightened caution in the lending process due to the pandemic situation. The positive change in CAR reveals a significant improvement in financial stability and capital strength, which could be a result of better capital management or improved asset quality. Both employee efficiency ratios indicate higher productivity and profitability per employee. These improvements may be driven by synergies or increased cross-selling opportunities. The asset quality displayed a significant improvement and lower credit risk, likely attributed to enhanced credit assessment, rigorous monitoring, or the resolution of non-performing loans.

To summarise, the post-merger scenario witnessed improvements across diverse financial parameters, including profitability, operational efficiency, solvency, and asset quality. The findings reflect post-merger synergies, economies of scale, improved risk management, and enhanced revenue streams.

7. Conclusion

The study reveals a positive impact of the 2020 PSBs mergers in India on bank performance. Significant post-merger improvements were observed in profitability, operational efficiency, solvency, and asset quality. ROA and ROE showed a significant increase in profitability and shareholder returns. Employee efficiency and asset quality displayed a significant improvement. The study suggests that the mergers achieved synergies, economies of scale, and improved risk management for the banks.

This study does have its limits. Since it only considered PSBs and a specific wave of mergers, these findings may not be true for other types of banks or different time periods. Future research could delve into the long-term sustainability of these positive outcomes and explore the potential challenges in the

evolving landscape of post-merger banking. This could provide valuable insights for shaping future consolidation strategies and policy decisions in the banking sector.

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