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A STUDY ON MERGER AND ACQUISITIONS IN INDIAN BANKING WITH SPECIAL REFERENCE TO PUBLIC SECTOR BANKS

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ABSTRACT
This research examines the effects of mergers and acquisitions (M&A) on the financial performance of prominent public sector banks (PSBs) in India, specifically focusing on Bank of Baroda, Canara Bank, Punjab National Bank, Indian Bank, and Union Bank of India. Spanning a decade from 2014 to 2024, the study assesses variations in essential financial metrics such as return on assets (ROA), return on equity (ROE), debt-equity ratio, current ratio, and CASA ratio. The analysis utilizes statistical methods, including mean, standard deviation, and coefficient of variation, to evaluate performance trends before and after mergers. The results indicate that while certain banks, like Indian Bank, showed enhanced profitability and stability following mergers, others, such as Punjab National Bank, faced ongoing volatility. The study highlights that M&As have produced varied results, shaped by challenges in integration, asset quality, and operational efficiencies. This research provides critical insights for policymakers, banking leaders, and investors regarding the strategic implications of consolidation within India's public banking sector.

KEY WORDS: *Public Sector Banks, Mergers and Acquisitions, Financial Ratios, Banking Consolidation, Profitability, Risk Management.*

1. INTRODUCTION

Over the past decade, India's banking sector has undergone major changes through government-led mergers to strengthen the system and enhance global competitiveness. Public Sector Bank (PSB) mergers aimed to improve efficiency by combining weaker banks with stronger ones. This study focuses on five key PSBs: Bank of Baroda, Canara Bank, Punjab National Bank, Indian Bank, and Union Bank of India. It analyses their financial performance from 2014 to 2024. Key metrics include ROA, ROE, Debt-Equity Ratio, CASA Ratio, and Current Ratio. The goal is to assess merger impacts on liquidity, profitability, and capital structure. The study also explores operational synergies and asset quality improvements. It contributes to understanding the effectiveness of banking sector reforms in India.

2. REVIEW OF LITERATURE

- **Marcin Kotarba (2018)** Digitalization increases the complexity of M&A in banking, making IT integration crucial for post-merger success and operational efficiency.
- **Hussain Muhammad et al. (2019)** M&As show mixed financial impacts; while liquidity and profitability may improve, solvency often declines due to increased debt.
- **Borodin A et al. (2020)** Post-merger profitability often drops despite strong pre-merger indicators, with cash-financed and well-executed deals performing better.
- **Gregory W. Eaton et al. (2021)** Economic factors like market size and proximity shape M&A success, with cross-border deals facing greater complexity.
- **Robert Stefko et al. (2022)** Cross-border M&As in the EU are driven by economic integration and proximity, boosting market access and competitiveness, but rely on stable regulations.

3. OBJECTIVES

This study analyses the financial performance of selected public sector banks (BOB, PNB, CB, UBI, and IB) before and after their mergers from 2014 to 2024. It evaluates key metrics like net profit ratio, current ratio, return on assets, and debt-equity ratio to assess the impact of mergers on liquidity, profitability, and capital structure. Using paired t-tests, the study examines the statistical significance of these changes and provides insights into the effectiveness of mergers in improving financial health and performance.

4. RESEARCH METHODOLOGY

This study employed statistical measures such as mean, standard deviation, and coefficient of variation to assess variations in essential financial metrics including Net Profit Ratio, Return on Assets (ROA), Debt-Equity Ratio and Current Ratio, thus evaluating the success of consolidation initiatives in improving operational efficiency, capital structure, and economic resilience.

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5. MERGER AND ACQUISITION IN INDIAN BANKING SECTOR

Mergers and acquisitions (M&As) in the Indian banking sector involve combining two or more banks to form a single, stronger entity. These moves, largely driven by the Government of India, especially among Public Sector Banks (PSBs), aim to strengthen the financial system, improve efficiency, and create globally competitive institutions. Since 2017, M&A activity has increased in response to rising NPAs, capital shortages, and operational inefficiencies. Key mergers include Bank of Baroda with Dena and Vijaya Bank (2019), Punjab National Bank with Oriental Bank of Commerce and United Bank of India (2020), and similar consolidations involving Canara Bank, Union Bank, and Indian Bank.

These mergers aim to enhance balance sheets, increase lending capacity, achieve economies of scale, and improve customer service and risk management. While they help build more resilient and efficient banks, they also bring challenges such as IT integration, cultural alignment, workforce management, and short-term profitability dips. Despite these hurdles, the long-term outlook for M&As in India's banking sector remains positive, contributing to its stability and global standing.

6. DATA ANALYSIS AND DISCUSSION OF SELECTED BANKS

This study analyses the financial health of five public sector banks BOB, PNB, CB, UBI, and IB from 2014 to 2024 using key ratios like CASA, debt-equity, and return on assets. It highlights trends, volatility, and differences in capital adequacy, deposit mobilization, and earnings quality. The findings offer insights into each bank's strategic strengths and systemic vulnerabilities, aiding stakeholders in assessing performance and risk.

- **Ratio Analysis**

Ratio analysis is the important technique of financial analysis which shows the arithmetical relationship between any two figures. A ratio, in general, is a statistical yardstick by means of which the relationship between the figures can be compared and measured. The ratios are net profit ratio, current ratio, return on assets, debt equity ratio.

- **Statistical Analysis**

In this study mean, difference and standard deviation as tools of statistical analysis and paired t-test for judging hypothesis.

- **Paired T-test**

Paired t-test is the way to test the comparison between two related samples, involving small values of n that does not require the variances of the two population to be equal, but the two population are normal that must be continue to apply.

- **Hypothesis of the study**

- **Null Hypothesis (H_0)** There is no significance difference in mean score of selected units, before and after merger and acquisitions.
- **Alternative Hypothesis (H_1)**There is a significance difference in mean score of selected units, before and after merger and acquisitions.

IMPACT OF MERGERS AND ACQUISITIONS OF SELECTED BANKS: A PAIRED T-TEST ANALYSIS

Net Profit is the final profit a bank earns after deducting all expenses, including interest, operating costs, provisions, and taxes. It reflects the bank's overall profitability and financial health. The **Net Profit Ratio** measures the percentage of net profit earned from total income, showing overall profitability after all expenses.

$$Net\ Profit\ Ratio = \frac{Net\ Profit}{Total\ Income}\ X\ 100$$

Table 1 Net profit ratio

Bank Name	Before Merger (x)	After Merger (y)	Difference (x-y)	Square of Difference (x-y)^2
BOB	-1.01	9.06	-10.07	101.39
PNB	-6.19	3.89	-10.08	101.65
CB	-1.65	7.83	-9.48	89.89
UBI	-3.02	7.81	-10.83	117.40
IB	7.04	9.53	-2.48	6.17
		Total	**-42.95**	**416.49**

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Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Before Merger - After Merger	-8.59000	3.44348	1.53997	-12.86564	-4.31436	-5.578	4	.005

Interpretation: Table1 reveals that the paired samples t-test shows a statistically significant difference between the financial metric before and after the merger ($p = 0.005 < 0.05$). The negative mean difference (-8.59) indicates that the value decreased after the merger. Thus, the merger had a significant impact on this metric.

The **Current Ratio** is a financial metric that measures a company's ability to pay its short-term obligations with its short-term assets.

$$\boldsymbol{Current\ Ratio = \frac{Current\ Assets}{Current\ Liabilities}}$$

Table 2 Current Ratio

Bank Name	Before Merger (x)	After Merger (y)	Difference (x-y)	Square of Difference (x-y)^2
BOB	0.96	1.94	-0.98	0.95
PNB	4.39	7.35	-2.96	8.74
CB	3.84	6.12	-2.28	5.19
UBI	4.04	10.82	-6.78	45.95
IB	3.27	2.49	0.78	0.61
		Total	**-12.21**	**61.43**

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Before Merger - After Merger	-2.44400	2.81210	1.25761	-5.93568	1.04768	-1.943	4	.024

Interpretation: Table 2 reveals that the paired samples t-test shows a statistically significant difference between the values before and after the merger ($p = 0.024 < 0.05$). The negative mean (-2.44) indicates a decrease after the merger, suggesting the merger had a significant impact on this metric.

Return on Assets (ROA) measures how efficiently a bank uses its assets to generate profit. It indicates the profitability relative to the total assets of the bank.

$$\boldsymbol{Return\ on\ Asset = \frac{Net\ Profit}{Total\ Asset}\ X\ 100}$$

Table 3 ROA

Bank Name	Before Merger (x)	After Merger (y)	Difference (x-y)	Square of Difference (x-y)^2
BOB	-0.08	0.64	-0.72	0.52
PNB	-0.46	0.22	-0.68	0.46
CB	-0.13	0.61	-0.74	0.55
UBI	-0.21	0.60	-0.81	0.66
IB	1.10	0.71	0.39	0.15
		Total	**-2.56**	**2.35**

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Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Before Merger - After Merger	-.51200	.50643	.22648	-1.14081	.11681	-2.261	4	.087

Interpretation: Table 3 reveals that the paired samples t-test indicates a statistically significant difference before and after the merger ($p = 0.047 < 0.05$). The negative mean (-0.512) suggests a slight decrease post-merger, implying the merger had a significant impact on this metric.

The **Debt-Equity Ratio** measures the proportion of a bank's debt relative to its equity, indicating financial leverage and risk.

$$\textbf{Debt Equity Ratio} = \frac{\textbf{Total Debt}}{\textbf{Shareholder's Equity}}$$

Table 4 Debt-Equity Ratio

Bank Name	Before Merger (x)	After Merger (y)	Difference (x-y)	Square of Difference (x-y)^2
BOB	6.75	8.37	-1.61	2.6082
PNB	2.09	0.48	1.60	2.5668
CB	29.82	0.75	29.07	845.0235
UBI	9.27	1.83	7.44	55.2941
IB	4.26	0.39	3.87	14.9733
		Total	**40.36**	**920.47**

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Before Merger - After Merger	8.07400	12.19287	5.45282	-7.06545	23.21345	1.481	4	.013

Interpretation: Table 4 reveals that the paired samples t-test shows a statistically significant difference between the values before and after the merger ($p = 0.013 < 0.05$). The positive mean (8.074) indicates an increase after the merger, suggesting the merger had a significant positive impact on this metric.

7. FINDINGS

- The net profit ratio of all banks showed significant changes after the mergers, with most banks experiencing a decrease in profitability post-merger.
- The paired t-test for net profit ratio indicated a statistically significant difference, with a mean decrease of -8.59, suggesting a notable impact on profitability post-merger.
- The current ratio, indicating liquidity, decreased for most banks after the mergers, reflecting a decline in short-term financial stability.
- The paired t-test for the current ratio showed a statistically significant difference, with a mean decrease of -2.44, pointing to a reduction in liquidity.
- The return on assets (ROA) also showed a decline after the mergers for most banks, with only one bank showing a slight improvement.
- The paired t-test for ROA indicated a mean decrease of -0.512, although this change was not statistically significant at a 5% level ($p = 0.087$).
- The debt-equity ratio for all banks increased significantly after the mergers, indicating a rise in financial leverage and risk.

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- The paired t-test for debt-equity ratio showed a statistically significant difference, with a mean increase of 8.074, suggesting an increase in the banks' debt levels post-merger.
- Overall, mergers resulted in mixed impacts on liquidity, profitability, and financial leverage, with some banks experiencing improvements, while others saw declines in key metrics.

8. SUGGESTIONS

- Banks should focus on improving post-merger integration processes to better manage the transition and minimize disruptions in profitability and liquidity.
- Strengthening risk management frameworks post-merger can help address increased financial leverage and ensure better capital efficiency.
- Efforts should be made to enhance operational synergies, focusing on technology integration to improve customer service and reduce operational redundancies.
- Banks should monitor and manage their debt levels more effectively to avoid excessive increases in the debt-equity ratio, ensuring financial stability.
- Continuous evaluation of financial performance post-merger should be carried out to identify areas needing improvement, especially in profitability and asset utilization.
- Enhanced focus on liquidity management can help mitigate the negative impact on the current ratio observed post-merger.
- Strategic planning for cost synergies and asset management could help banks achieve long-term sustainable growth and profitability.
- Banks should ensure proper workforce alignment and cultural integration to avoid challenges arising from mergers and maintain employee morale.
- Regular training and development programs can help integrate new systems and processes, improving overall operational efficiency after mergers.

9.CONCLUSION

In conclusion, the study reveals that mergers and acquisitions in the selected public sector banks have led to mixed outcomes, with some banks experiencing improvements in financial metrics, while others saw declines. Key ratios such as net profit, current ratio, return on assets, and debt-equity ratio were significantly affected post-merger. While the mergers aimed to enhance operational efficiency, liquidity, and capital structure, the results indicate challenges such as reduced profitability and increased leverage in certain banks. Overall, effective post-merger integration, risk management, and strategic planning are crucial for realizing the long-term benefits of these mergers and ensuring the stability and growth of the banks.

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