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IMPACT OF BANK MERGERS ON FINANCIAL SOUNDNESS: A STUDY OF APRIL 2020 PSB'S CONSOLIDATION

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The consolidation of Public Sector Banks (PSBs) in April 2020 marked a significant reform in India's banking sector, aimed at improving financial stability, operational efficiency, and overall resilience. This study examines the impact of these mergers on the financial soundness of selected Indian PSBs- Punjab National Bank, Canara Bank, Union Bank of India, and Indian Bank that were merged during this phase of consolidation.

The study adopts a pre- and post-merger comparative framework using secondary data sourced from bank annual reports and database of the RBI. Financial performance is evaluated using key indicators related to asset quality, profitability, capital adequacy and operational efficiency. These include GNPA, NNPA, ROA, ROE, CRAR, NIM, and Business per Employee. The analysis covers the pre-merger period from 2017 to 2019 and the post-merger period from 2021 to 2023, with the transition year 2020 excluded to avoid distortion from merger-related adjustments. To evaluate the statistical significance of performance changes, the Independent t-test is applied. The results indicate improvements in several indicators; however, these changes are not yet statistically conclusive due to the limited post-merger period. The findings suggest that the full benefits of consolidation are likely to materialise over the medium to long term.

KEYWORDS : ***Public Sector Banks; Bank Mergers; Financial Soundness; Asset Quality; Profitability; Capital Adequacy; GNPA; ROA; CRAR***

1. INTRODUCTION

In India, Public Sector Banks (PSBs) form the backbone of the banking system due to their wide branch network, large customer base, and significant contribution to credit delivery. However, over the last decade, PSBs have faced several challenges, including rising non-performing assets (NPAs), declining asset quality, pressure on profitability, and increasing capital requirements. These problems weakened the financial position of many banks and led to repeated capital support from the government. To address these structural weaknesses and strengthen the banking system, the Government of India initiated a major consolidation of PSBs. A key phase of this reform took place in April 2020, when ten public sector banks were merged into four, reducing the total number of PSBs from eighteen to twelve. The objective of this consolidation was to create larger and financially stronger banks capable of improving efficiency, profitability, and overall stability. The four mergers that came into effect in April 2020 are:

1. Punjab National Bank acquiring Oriental Bank of Commerce and United Bank of India
2. Canara Bank acquiring Syndicate Bank
3. Union Bank of India acquiring Andhra Bank and Corporation Bank
4. Indian Bank acquiring Allahabad Bank

1.1 Problem Statement

Despite the government's expectation that consolidation would strengthen banking performance, the actual financial outcomes remain uncertain. Questions persist over whether mergers have genuinely improved asset quality, profitability, capital adequacy, operational efficiency, and employee productivity. Although some indicators show post-merger improvement, their consistency and extent are unclear. Further, the April 2020 consolidation coincided with the COVID-19 pandemic, complicating outcome assessment. This overlap makes it essential to isolate merger effects through robust methodology. The mixed performance across indicators highlights the need for a systematic, data-driven evaluation of financial soundness.

1.2 Objectives of the Study

1. To evaluate the impact of the April 2020 PSB consolidation on the financial soundness of merged banks.

2. To compare the financial performance of selected banks in the pre merger & post merger periods using key financial indicators.
3. To assess whether the changes in financial performance after the merger are statistically significant using appropriate statistical techniques.
4. To provide insights and implications for policymakers, regulators, and the banking industry.

1.3 Significance

1. It supports policymakers and regulators in evaluating whether consolidation enhances financial resilience.
2. It assists investors and stakeholders by providing clarity on post-merger stability and growth potential.
3. It enriches academic literature in the areas of banking sector.

2. LITERATURE REVIEW

2.1 Global Studies on Bank Mergers

Bank mergers have been widely used in developed economies to enhance financial performance, reduce costs, and strengthen competitiveness. Pilloff and Santomero (1998) argue that mergers are driven by efficiency gains, risk diversification, and economies of scale. However, empirical findings remain mixed. Berger, Demsetz, and Strahan (1999) observe that consolidation often increases market power without necessarily improving cost efficiency, while Houston, James, and Ryngaert (2001) note that value creation depends on the successful realization of operational synergies. Post-crisis studies, such as Kouki and Al-Nasser (2014), report improvements in capital strength and asset quality. Overall, global evidence suggests that merger outcomes depend on management effectiveness, regulation, and integration success.

2.2 Indian Studies on Bank Mergers

India's banking sector has undergone several consolidation phases since the 1991 reforms. Ramakrishnan (2010) notes that mergers strengthen banks mainly when the acquiring bank is financially stronger. Kumar and Sujit (2018) report mixed post-merger outcomes, with improvements in some ratios but deterioration in asset quality and ROA in others. After the 2017–2019 PSB mergers, Gupta (2020) observed gains in capital adequacy and NIM, though NPAs declined only marginally. Studies on the 2020 consolidation remain inconclusive due to pandemic-related volatility (Bansal & Singh, 2022).

2.3 Studies on Financial Indicators Used in Merger Analysis

Indicator	Purpose
GNPA & NNPA	Measure asset quality and credit risk
ROA & ROE	Reflect profitability and shareholder returns
CRAR	Indicates capital strength and solvency
NIM	Measures interest income efficiency
Business per Employee	productivity and manpower efficiency

Sastry (2019) highlights that asset quality takes longer to stabilize post-merger. In contrast, Kaur and Chawla (2021) suggest that operational indicators such as NIM and Business per Employee respond more rapidly to consolidation due to integration of technology and branch rationalization.Collectively, these findings reinforce that mergers do not affect all indicators uniformly; comprehensive assessment is required for meaningful conclusions.

2.4 Research Gap

1. Most studies examined only short-term post-merger impact, whereas recent data for 2021–2023 remains under-researched.
2. Many studies relied on descriptive comparison only, without statistical significance testing.
3. The April 2020 consolidation, the largest in India's banking history, has been insufficiently evaluated using a structured set of financial soundness indicators.

Thus, the existing literature indicates that mergers can potentially improve financial performance, efficiency, and capital strength. However, outcomes depend on the characteristics of merging entities, integration success, economic environment, and management decisions.

3. RESEARCH METHODOLOGY

3.1 Research Design

The present study adopts a descriptive and analytical research design to examine the impact of bank mergers on the financial soundness of select PSBs in India. The research is empirical in nature and is based entirely on secondary data collected from published and authenticated sources. The design enables systematic comparison of financial performance before and after the merger and facilitates statistical testing of observed changes.

The study follows a pre–post comparison framework, wherein the financial indicators of selected banks during the pre-merger period are compared with those of the post-merger period. This approach is widely used in merger evaluation studies to assess whether structural changes have resulted in measurable performance improvements.

3.2 Sample Selection -The sample consists of four major PSBs that emerged as anchor banks after the April 2020 consolidation:

1. Punjab National Bank
2. Canara Bank
3. Union Bank of India
4. Indian Bank

3.3 Period of the Study

- Pre-Merger Period: FY 2017–18 to FY 2019–20
- Post-Merger Period: FY 2021–22 to FY 2023–24

The financial year 2020–21 is excluded from the analysis, as it represents a transition year marked by merger implementation, accounting adjustments, and the economic disruption caused by the COVID-19 pandemic.

3.4 Sources of Data

- Annual Reports of the respective banks

- Reserve Bank of India's publications and circulars
- RBI's Database on Indian Economy (DBIE)

3.**5 Variables and Indicators Used** - Financial soundness is assessed using seven key indicators, selected to cover all core dimensions of banking performance:

Category	Indicator
Asset Quality	GNPA, NNPA
Profitability	ROA, ROE
Capital Strength	CRAR
Operational Efficiency	NIM
Productivity	Business per Employee(₹ lakh)

3.6 Method of Data Analysis

- Compilation of Year-wise Data - Financial data for each indicator was compiled for all selected banks for both pre- and post-merger periods.
- Computation of Averages - Three-year average values was calculated separately for both periods for each bank and indicator.
- Measurement of Change - Absolute change and percentage change between pre- and post-merger averages were computed to assess impact.
- Statistical Testing- The Independent *t*-test was applied to determine the statistical significance of mean differences.

3.9 Limitations of the Study

- The analysis is restricted to a limited post-merger period of three years.
- External factors such as macroeconomic conditions and regulatory changes may influence results.
- The study relies only on financial indicators and does not capture qualitative aspects such as customer satisfaction or managerial efficiency.

4. DATA ANALYSIS & INTERPRETAION

Table 1 - presents the average values of selected indicators for each bank during the pre- and post-merger periods, along with absolute and percentage changes.

BANK	RATIO INDICATOR	PRE-MERGER AVG (X)	POST-MERGER AVG (Y)	CHANGE (Y – X)	% CHANGE
PNB	GNPA	0.1547	0.1155	-3.92	-25.34%
	NNPA	0.0854	0.0442	-4.12	-48.24%
	ROA	-0.887	0.197	+1.084	+122.2%
	ROE	-16.493	2.857	+19.350	+117.3%
	CRAR	10.197	14.773	+4.576	+44.9%
	NIM	2.133	2.38	+0.247	+11.6%
	Business per Employee (₹ Lakh)	1523.67	1996.67	+473.00	+31.0%
Canara Bank	GNPA	0.101	0.0726	-2.84	-28.12%
	NNPA	0.0639	0.0273	-3.66	-57.27%
	ROA	-0.163	0.507	+0.670	+411.0%
	ROE	-2.593	9.963	+12.556	+484.2%
	CRAR	12.66	14.92	+2.260	+17.8%
	NIM	1.993	2.283	+0.290	+14.6%
	Business per Employee (₹ Lakh)	1543.38	2040	+496.62	+32.2%
Union Bank	GNPA	0.1397	0.1079	-3.18	-22.76%
	NNPA	0.0728	0.0333	-3.95	-54.26%
	ROA	-0.51	0.477	+0.987	+193.5%
	ROE	-10.817	7.92	+18.737	+173.2%
	CRAR	11.677	14.373	+2.696	+23.1%
	NIM	2.047	2.49	+0.443	+21.7%
	Business per Employee (₹ Lakh)	1768.33	2095	+326.67	+18.5%
Indian Bank	GNPA	0.0724	0.0813	+0.89	+12.29%
	NNPA	0.0357	0.0212	-1.45	-40.62%
	ROA	0.44	0.633	+0.193	+43.9%
	ROE	5.727	9.78	+4.053	+70.8%
	CRAR	13.133	16.243	+3.110	+23.7%
	NIM	2.577	2.713	+0.136	+5.3%
	Business per Employee (₹ Lakh)	1839.33	2466	+626.67	+34.1%

Source- Author's calculation

Interpretation

1. Punjab National Bank (PNB)

Following its merger, Punjab National Bank has shown significant improvement in all key areas of financial stability. The quality of its assets has greatly improved, with both GNPA and NNPA experiencing a notable decrease, which points to enhanced recovery processes and better credit management post-consolidation. Profitability has seen a marked turnaround, with ROA and ROE shifting from significantly negative figures before the merger to positive ones afterward, indicating a stabilization of earnings despite previous challenges. Capital adequacy has seen a considerable boost, aided by recapitalization and a stronger balance sheet. Operational efficiency has also advanced, as evidenced by an increase in NIM and a significant rise in Business per Employee, suggesting early benefits from workforce and branch optimization. Overall, the merger seems to have been crucial in stabilizing PNB and restoring its financial health.

2. Canara Bank

Canara Bank has shown one of the most significant post-merger improvements among the selected public sector banks. Both GNPA and NNPA have decreased sharply, indicating a substantial enhancement in asset quality and risk management practices. Profitability indicators have recovered remarkably, with ROA and ROE rising significantly from weak or negative levels before the merger to strong performance afterward. Capital adequacy has steadily improved, and the increase in NIM suggests better management of interest income. The growth in Business per Employee reflects gains in operational efficiency and productivity following the consolidation. Together, these improvements indicate that Canara Bank has been relatively successful in converting merger synergies into concrete financial and operational benefits.

3. Union Bank of India

Union Bank of India showed consistent post-merger improvement across asset quality, profitability, capital strength, and efficiency indicators. GNPA and NNPA ratios significantly declined, indicating better asset quality and recovery efforts. Profitability indicators, particularly ROA and ROE, displayed a strong turnaround from negative pre-merger performance to positive post-merger outcomes. Capital adequacy improved, supported by regulatory capital infusion and improved balance-sheet management. Additionally, higher NIM and Business per Employee suggest enhanced operational efficiency and productivity. Overall, the merger appears to have contributed to stabilising Union Bank's financial position and strengthening its long-term performance capacity.

4. Indian Bank

Indian Bank presented a relatively stable and resilient performance both before and after the merger, with moderate but consistent post-merger improvements. Asset quality has shown mixed movement, with NNPA declining significantly, although GNPA recorded a marginal increase, possibly reflecting the absorption of stress from the merged entity. Profitability improved steadily, with increases in ROA and ROE indicating better earnings performance. Capital adequacy strengthened notably, while NIM and Business per Employee improved, suggesting enhanced efficiency and scale benefits. Indian Bank's merger impact appears more focused on consolidation, capacity expansion, and incremental performance gains rather than dramatic turnaround.

4.1 Hypotheses of the Study

- **Null Hypothesis (H_0) -** There is no significant difference in the financial soundness indicators of the selected PSBs between the pre-merger and post-merger periods.
- **Alternative Hypothesis (H_1) -** There is a significant difference in the financial soundness indicators of the selected PSBs between the pre-merger and post-merger periods.

These hypotheses are tested individually for each financial indicator and bank.

Statistical Method Applied

To test the stated hypotheses, the Independent Samples t-test is employed. The level of significance is set at 5% ($\alpha = 0.05$).

4.2 Hypothesis Testing Results (Bank-wise):

Table 2: PNB – Independent t-test Results

Indicator	Pre-Mean	Post-Mean	t-value	p-value	Result
GNPA	15.47	11.55	-1.42	>0.05	Not Significant
NNPA	8.54	4.42	-1.58	>0.05	Not Significant
ROA	-0.89	0.2	1.36	>0.05	Not Significant
ROE	-16.49	2.86	1.41	>0.05	Not Significant
CRAR	10.2	14.77	1.63	>0.05	Not Significant
NIM	2.13	2.38	1.12	>0.05	Not Significant
Business per Employee	1523.67	1996.67	1.74	>0.05	Not Significant

Table 3: Canara Bank – Independent t-test Results

Indicator	Pre-Mean	Post-Mean	t-value	p-value	Result
GNPA	10.1	7.26	-1.51	>0.05	Not Significant
NNPA	6.39	2.73	-1.76	>0.05	Not Significant
ROA	-0.16	0.51	1.69	>0.05	Not Significant
ROE	-2.59	9.96	1.88	>0.05	Not Significant
CRAR	12.66	14.92	1.44	>0.05	Not Significant
NIM	1.99	2.28	1.26	>0.05	Not Significant
Business per Employee	1543.38	2040	1.81	>0.05	Not Significant

Table 4: Union Bank of India – Independent t-test Results

Indicator	Pre-Mean	Post-Mean	t-value	p-value	Result
GNPA	13.97	10.79	-1.39	>0.05	Not Significant
NNPA	7.28	3.33	-1.71	>0.05	Not Significant
ROA	-0.51	0.48	1.65	>0.05	Not Significant
ROE	-10.82	7.92	1.79	>0.05	Not Significant
CRAR	11.68	14.37	1.53	>0.05	Not Significant
NIM	2.05	2.49	1.47	>0.05	Not Significant
Business per Employee	1768.33	2095	1.22	>0.05	Not Significant

Table 5: Indian Bank – Independent t-test Results

Indicator	Pre-Mean	Post-Mean	t-value	p-value	Result
GNPA	7.24	8.13	0.88	>0.05	Not Significant
NNPA	3.57	2.12	-1.92	>0.05	Not Significant
ROA	0.44	0.63	1.34	>0.05	Not Significant
ROE	5.73	9.78	1.58	>0.05	Not Significant
CRAR	13.13	16.24	1.66	>0.05	Not Significant
NIM	2.58	2.71	1.11	>0.05	Not Significant
Business per Employee	1839.33	2466	1.89	>0.05	Not Significant

4.3 Interpretation of Results

The empirical results indicate that all four anchor banks show directional improvement in key financial soundness indicators in the post-merger period. Asset quality indicators (GNPA and NNPA) decline across most banks, suggesting better provisioning and recovery strategies. Capital adequacy improves consistently, reflecting regulatory support and a stronger balance sheet post consolidation. Operational efficiency, measured through Business per Employee, shows steady growth, suggesting early synergy realization.

However, the Independent Samples t-test results indicate that most improvements are not statistically significant at the 5% level. This outcome can be attributed to:

- The short post-merger observation window
- Small sample size (3 years vs 3 years)
- High volatility in pre-merger PSB performance
- External factors such as COVID-19 and increased provisioning requirements

The findings indicate that while the April 2020 PSB consolidation has stabilized financial performance and improved balance sheet strength, the full statistical impact of mergers is likely to become evident over a longer frame time.

4.4 Decision on Hypotheses

Since p-values for most indicators exceed the 5% significance level, the null hypothesis is not rejected for the majority of cases. This suggests that although financial soundness indicators show improvement, the changes are not yet statistically conclusive within the limited post-merger period.

5. CONCLUSION

This study examined the impact of the April 2020 consolidation of Public Sector Banks on financial soundness by analysing four anchor banks Punjab National Bank, Canara Bank, Union Bank of India, and Indian Bank using key indicators of asset quality, profitability, capital adequacy, and operational efficiency. A comparative assessment of three-year pre-merger and three-year post-merger periods reveals a clear directional improvement in most financial soundness indicators across all selected banks.

The findings shows that asset quality improved significantly, as reflected in the decline in GNPA and NNPA ratios for most banks, suggesting better provisioning, recovery mechanisms, and credit discipline following consolidation. Capital adequacy consistently improved, supported by recapitalisation and regulatory oversight, enhancing the resilience of the merged entities. Although profitability indicators were initially impacted by legacy issues and disruptions from the pandemic, they have shown a clear recovery, especially for banks that were financially weaker before the merger.Operational efficiency, measured through NIM and Business per Employee, also improved, reflecting early synergy realisation from scale expansion, branch rationalisation, and workforce optimisation. Overall, the study concludes that the April 2020 PSB consolidation has contributed positively to financial stability and balance-sheet strengthening, though the full benefits of the mergers are likely to unfold over the medium to long term rather than immediately.

5.1 Policy Implications

- **Merger as a Stabilisation strategy:** Improved asset quality and capital adequacy show consolidation stabilises stressed PSBs with regulatory support.
- **Post-Merger Integration Focus:** Although financial indicators improve, profitability gains remain gradual, underscoring the need for strong integration in technology, risk management, and culture.
- **Long-Term Evaluation Horizon:** Merger outcomes should be assessed over a longer period, as short-term analysis may understate consolidation benefits.

5.2 Scope for Further Research

Despite offering valuable insights, this study has certain limitations that provide avenues for future research. First, the post-merger analysis is limited to three years; extending the study period would allow for a more robust evaluation of long-term merger benefits. Second, future studies may incorporate

additional dimensions such as cost efficiency, risk-adjusted performance, or market-based indicators. Third, comparative analysis between public and private sector bank mergers could offer broader insights into the effectiveness of consolidation as a reform strategy. Finally, qualitative assessment of integration challenges and governance changes could complement quantitative findings and deepen understanding of merger outcomes.

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