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Impact of Bank Merger on Financial Performance: A CAMEL Evaluation of the Canara and Syndicate Bank

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Abstract—**The large-scale merger of public sector banks undertaken in India during 2020 was a significant reform policy intended to streamline operations, enhance financial stability, and upgrade the global standing of state-run banks. Amid this broader reform initiative, the merger of Syndicate Bank into Canara Bank created the fourth-largest public sector bank by business size and network presence. This study empirically evaluates the financial performance implications of this merger using the CAMEL framework. The analysis is based on secondary data extracted from annual reports for the pre-merger period (2015-2019) and post-merger period (2021-2025). Descriptive statistical techniques were used to analyse performance patterns, and paired sample t-tests were applied to assess the statistical significance of the observed variations.**

The results demonstrate considerable improvements in Capital Adequacy Ratio, Return on Equity, and Return on Assets exhibiting upward trajectories. Asset quality indicators, including Net and Gross NPA ratios, showed discernible improvement, although these changes were statistically insignificant, reflecting ongoing resolution and recovery efforts. Management efficiency measures presented mixed outcomes due to transitional integration effects. Liquidity parameters improved significantly, highlighting enhanced financial stability of the merged entity. Overall, the findings suggest that the Canara & Syndicate merger contributed positively to the bank's financial performance and risk profile, validating the strategic rationale of consolidation. The study offers relevant insights for policymakers, regulators, and banking practitioners engaged in evaluating long-term impacts of PSB restructuring initiatives in India.

Index Terms—**Bank Merger, CAMEL Framework, Financial Performance, Public Sector Banks.**

I. INTRODUCTION

The banking sector plays a pivotal role in channelizing financial resources and ensuring their efficient and effective utilization within an economy. Banks can pursue growth through organic strategies such as internal capital generation, or through inorganic strategies that involve external expansion. Among the latter, mergers and acquisitions (M&As) have increasingly become a preferred instrument for achieving rapid scale, wider market reach, operational efficiency, and cost synergies etc. Through M&A, banks seek to reap economies of scale, enhance competitiveness, strengthen capital structures, and improve overall financial resilience.

In India, the public sector banking landscape witnessed a major consolidation phase in 2020, when the Government of India initiated a series of strategic mergers to create larger, stronger, and more efficient banking entities having an ability of facing global and domestic financial challenges. As part of this restructuring exercise, Canara Bank was designated as the anchor bank and Syndicate Bank was merged into it, creating the fourth-largest public sector bank in the country. Canara Bank, established in 1906, is one of India's oldest and most prominent PSBs with a strong national presence and diversified operations. Syndicate Bank, founded in 1925, was known for its MSME support, priority sector lending, and strong customer base in southern region of India. The merger of these two institutions combined complementary strengths in technology, branch networks, and regional market penetration, positioning the consolidated entity for enhanced operational performance.

Against this backdrop, the present paper made an attempt to examine the financial performance effects of bank consolidation with specific reference to the Canara & Syndicate merger. The assessment focuses on the pre- and post-merger performance of the anchor bank using the CAMEL (Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and Liquidity) framework, which is widely recognized for evaluating the financial health and stability of banking institutions. A comparative analysis supported by descriptive statistics and paired t-test techniques is employed to determine whether changes in key financial indicators before and after the merger are statistically significant or not.

To contextualize the analysis, an extensive review of literature on banking performance measurement and CAMEL applications has been undertaken. This foundation underscores the relevance of the CAMEL model in capturing multidimensional aspects of bank performance and highlights its credibility as an evaluative tool during structural transitions such as mergers.

The purpose of this study is to evaluate whether the Canara & Syndicate bank consolidation has led to measurable improvements in financial performance, stability, and operational efficiency, and to contribute empirical evidence on the broader impact of public sector bank consolidation initiatives in India.

II. REVIEW OF LITERATURE

1. Siddalingeshwara, S. (2023) has explored "A Study on Financial Performance of Pre- and Post-Merger of Public Sector Banks in India". The study focuses on several major banks, including Canara Bank, Union Bank of India, Indian Bank, Punjab National Bank, and Bank of Baroda. Drawing on data from annual reports and financial websites, it evaluates multiple financial ratios and applies paired t-tests to measure the impact of mergers. The findings reveal a notable improvement in profitability indicators such as net profit and operating profit margins after the mergers, reinforcing the view that such consolidations enhance overall bank performance.
2. Agrawal, G. (2023) has investigated "Impact of Syndicate Bank Merger on Profitability of Canara Bank". Utilizing a four-year period covering pre- and post-merger phases, the study analyses variables such as deposits, advances, business, and net profit. Drawing on secondary data sources like RBI Bulletins and Annual Reports, the research employs an analytical research design. The study concludes that while mergers and acquisitions are pivotal for the banking sector's growth and competitive edge, their success varies, emphasizing the need for careful evaluation and strategic planning in such endeavours.
3. Prasanna, S., & Shailaja, M. L. (2023) have conducted "A Study on the Evaluation of Financial Performance of Post-Merger and Pre-Merger of Canara Bank Using EAGLE and CAMEL Model", using the EAGLE and CAMEL models, analysed a five-year period, incorporating pre-merger and post-merger financial data to discern trends and changes in various financial indicators. The study employed a mixed-methods approach, combining quantitative analysis of financial ratios with qualitative assessments of management strategies and operational efficiencies. Their findings revealed significant impacts of the merger on Canara Bank's financial performance, particularly in areas of asset quality, capital adequacy, and management quality, contributing valuable insights for banking practitioners and policymakers.

III. OBJECTIVES

1. To analyse and compare the financial performance of Canara Bank during the pre-merger and post-merger periods using the CAMEL framework.
2. To assess the impact of the merger on the financial performance of Canara Bank the pre-merger and post-merger.

IV. HYPOTHESES

H_0 (Null Hypothesis) :There is no significant change in the financial parameter before and after the bank's merger.

H_1 (Alternative Hypothesis): There is a significant change in the financial parameter before and after the bank's merger.

V. RESEARCH METHODOLOGY

The present study adopts a descriptive and analytical research design. The analysis is based exclusively on secondary data sourced from the published annual reports of the respective banks for the pre-merger and post-merger periods. To assess the financial performance effects of the Canara & Syndicate merger, the study employs the CAMEL (Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and Liquidity) framework as the primary analytical tool. For empirical assessment, the following financial ratios under the CAMEL components were examined:

CAMEL	RATIOS	FORMULAS
Capital Adequacy	Capital Adequacy Ratio (CAR)	(Tier I Capital + Tier II Capital) / Risk-Weighted Assets
	Debt–Equity Ratio (D/E)	Borrowings/ Reserves
Asset Quality	Net NPA to Net Advances Ratio	Net NPA / Net Advances
	Gross NPA to Net Advances	Gross NPA / Net Advances
Management Efficiency	Profit per Employee	Profit After Tax / Total Number of Employees
	Business per Employee	Total Income / Total Number of Employees
Earnings Quality	Return on Equity (ROE)	Net Profit / Shareholders' Equity
	Return on Assets (ROA)	Net Profit / Total Assets
Liquidity	Liquid Assets to Total Assets	Liquid Assets / Total Assets
	Liquid Assets to Total Deposits	Liquid Assets / Total Deposits

VI. ANALYSIS AND INTERPRETATION

Table: 4.1

Analysis of CAMEL Ratios of Canara & Syndicate Bank during the Pre-Merger Period From 2014-2019

Ratio	Pre- Merger Year					Mean	SD	CV
	2015	2016	2017	2018	2019			
Capital Adequacy Ratio	0.106	0.111	0.127	0.129	0.127	0.120	0.011	8.98
Debt Equity Ratio	1.145	1.169	1.167	1.335	1.264	1.216	0.081	6.66
Net NPA to Advances	0.024	0.057	0.059	0.070	0.056	0.053	0.018	32.94
Gross NPA to Advances	0.036	0.086	0.094	0.121	0.099	0.087	0.031	35.86
Profit Per Employee	0.106	-0.099	0.038	-0.153	-0.043	-0.030	0.104	34.66
Business Per Employee	1.739	1.739	1.671	1.562	1.693	1.681	0.073	4.32
Return on Equity	0.117	-0.118	0.038	-0.201	-0.036	-0.040	0.126	31.50
Return on Assets	0.005	-0.005	0.002	-0.007	-0.002	-0.001	0.005	49.82
Liquid Assets to Total Assets	0.084	0.098	0.094	0.075	0.082	0.087	0.009	10.96
Liquid Assets to Total Deposits	0.099	0.116	0.111	0.090	0.097	0.103	0.011	10.34

Source: Canara and Syndicate Bank Annual Reports for the period from 2014 to 2025

Table:4.2

Analysis of CAMEL Ratios of Canara & Syndicate Bank during the Post-Merger Period From 2020-2025

Ratio	Post- Merger Year					Mean	SD	CV
	2021	2022	2023	2024	2025			
Capital Adequacy Ratio	0.132	0.149	0.167	0.163	0.163	0.155	0.014	9.39
Debt Equity Ratio	0.823	0.679	0.762	0.637	0.865	0.753	0.095	12.69
Net NPA to Advances	0.038	0.027	0.017	0.013	0.007	0.020	0.012	60.41
Gross NPA to Advances	0.094	0.079	0.056	0.044	0.030	0.061	0.026	43.14
Profit Per Employee	0.033	0.070	0.132	0.185	0.216	0.127	0.076	59.84
Business Per Employee	1.062	1.084	1.309	1.684	1.879	1.404	0.365	25.99
Return on Equity	0.067	0.128	0.195	0.221	0.213	0.165	0.066	39.90
Return on Assets	0.002	0.005	0.008	0.010	0.010	0.007	0.003	42.85
Liquid Assets to Total Assets	0.152	0.145	0.103	0.098	0.119	0.123	0.024	19.60
Liquid Assets to Total Deposits	0.177	0.168	0.120	0.115	0.141	0.144	0.028	19.16

Source: Canara and Syndicate Bank Annual Reports for the period from 2014 to 2025

The mean CAR increased from 0.120 in the pre-merger period to 0.155 in the post-merger period, indicating stronger capital adequacy and improved risk-absorption capacity after the merger. The mean D/E ratio declined from 1.216 pre-merger to 0.753 post-merger, reflecting a reduction in financial leverage and a more balanced capital structure in the post-merger period. The mean Net NPA decreased significantly from 0.053 before the merger to 0.020 after the merger, indicating substantial improvement in asset quality due to reduced credit impairment. The average Gross NPA reduced from 0.087 pre-merger to 0.061 post-merger, demonstrating a decline in stressed assets and better credit portfolio management after merger.

Profit Per Employee shifted from a negative mean of –0.030 in the pre-merger phase to a positive 0.127 in the post-merger phase, signifying a notable improvement in employee efficiency and profitability following merger integration. Business Per Employee declined from 1.681 pre-merger to 1.404 post-merger, indicating a temporary reduction in business handled per employee, likely due to branch rationalisation and workforce adjustments during integration. ROE improved from –0.040 in the pre-merger phase to 0.165 in the post-merger phase, reflecting a transition from negative to positive shareholder returns after the merger. ROA increased from –0.001 pre-merger to 0.007 post-merger, suggesting enhanced asset utilization efficiency and improved profitability in the post-merger period. The Liquid Assets to Total Assets ratio rose from 0.087 before the merger to 0.123 after the merger, indicating stronger liquidity buffers and a more conservative liquidity management stance. Liquid Assets to Total Deposits also increased from 0.103 pre-merger to 0.144 post-merger, showing improved deposit coverage capacity, strengthening liquidity safety in the post-merger period.

Table: 4.3

Impact of CAMEL Ratios of Canara & Syndicate Bank during Pre and Post Merger Periods

Particulars	Mean		Mean Difference	Percent Change	t-value	p-value
	Pre-Merger	Post-Merger				
Capital to Risk Weighted Asset Ratio	0.120	0.155	0.035	29.17	-14.746	0.000*
Debt Equity Ratio	1.216	0.753	-0.463	-38.07	7.162	0.002*
Net NPA to Total Advances Ratio	0.053	0.020	-0.033	-61.676	2.595	0.060**
Gross NPA to Total Advances Ratio	0.087	0.061	-0.027	-30.562	1.091	0.337**

Profit Per Employee Ratio	-0.030	0.127	0.157	-521.346	-2.227	0.090**
Business per Employee Ratio	1.681	1.404	-0.277	-16.494	1.500	0.208**
Return on Equity Ratio	-0.040	0.165	0.205	-512.82	-2.661	0.056**
Return on Assets Ratio	-0.001	0.007	0.008	-579.84	-2.469	0.069**
Liquid Asset to Total Asset Ratio	0.087	0.123	0.037	42.50	-3.657	0.022*
Liquid Asset to Total Deposit Ratio	0.103	0.144	0.041	40.24	-3.515	0.025*

Source: Computed from Table:4.1 and 4.2
*Significant at five percent level
**Not Significant

The comparative statistical analysis of CAMEL ratios between the pre- and post-merger periods provides insights into the merger's financial impact. Capital Adequacy significantly improved ($p < 0.05$), confirming that the merger enhanced risk-absorbing capacity. Debt-Equity declined significantly ($p < 0.05$), evidencing deliberate deleveraging and capital strengthening measures.

Asset quality ratios (Net NPA and Gross NPA) improved substantially in percentage terms (–61.67% and –30.56%, respectively), though the improvements were statistically insignificant ($p > 0.05$), suggesting that resolution and recovery benefits materialized but lacked consistent year-on-year statistical patterns. Management efficiency showed mixed outcomes: Profit per Employee improved from negative to positive (+0.157), while Business per Employee declined (–0.277), though both changes remained statistically insignificant ($p > 0.05$), indicating transitional operational adjustments without statistically conclusive outcomes.

Earnings performance recorded strong improvements, with ROE and ROA shifting from negative to positive (+0.205 and +0.008, respectively), yet lacking statistical significance ($p > 0.05$), implying gradual earnings stabilization rather than immediate profitability gains. Liquidity ratios demonstrated significant and favourable increases ($p < 0.05$), confirming that post-merger liquidity management strengthened meaningfully. Overall, the merger yielded statistically significant improvements in capital adequacy, leverage, and liquidity, while enhancements in asset quality, earnings, and management efficiency, though observable, were not statistically conclusive within the observed timeframe.

VII. FINDINGS

1. The mean Capital Adequacy Ratio (CAR) increased from 0.120 (pre) to 0.155 (post), indicating improved capital strength and higher regulatory buffer post-merger.
2. The mean Debt–Equity Ratio (D/E) declined from 1.216 to 0.753, showing reduced leverage and a more balanced capital structure after the merger.
3. Net NPA to Total Advances Ratio (NNPA) decreased from 0.053 to 0.020, reflecting stronger recovery efforts, better credit appraisal, and improved asset quality post-merger.
4. Gross NPA to Total Advances Ratio (GNPA) reduced from 0.087 to 0.061, indicating improvement in the gross asset quality profile of the consolidated entity.
5. Profit Per Employee (PPE) shifted from –0.030 to 0.127, highlighting a positive turnaround in employee profitability after rationalisation and efficiency alignment.
6. Business Per Employee (BPE) declined from 1.681 to 1.404, indicating a short-term reduction in business mobilization per employee, likely due to integration and restructuring during the post-merger period.
7. Return on Equity (ROE) improved from –0.040 to 0.165, marking a shift from negative to positive shareholder returns after the merger.
8. Return on Assets (ROA) increased from –0.001 to 0.007, indicating enhanced asset utilisation and profitability post-merger.
9. Liquid Assets to Total Assets Ratio (LATA) rose from 0.087 to 0.123, demonstrating a stronger liquidity buffer and more cautious asset positioning after the merger.

10. Liquid Assets to Total Deposits Ratio (LATD) increased from 0.103 to 0.144, reflecting higher coverage of deposits through liquid assets and improved liquidity resilience.

VIII. SUGGESTIONS

1. Business Per Employee (BPE)

Use performance incentives, digital sales tools, and targeted training to improve frontline efficiency. Redeploy administrative staff to business roles and resolve integration bottlenecks to enhance mobilisation.

2. Return on Assets (ROA)

Improve deployment of funds into higher-yield assets and fee-based activities to enhance returns. Control operating costs through digitisation and strengthen credit monitoring to reduce slippages.

3. Liquid Assets to Total Assets (LATA)

Improve liquidity planning through Asset Liability Management and deploy surplus funds in low-risk instruments for modest yield. Promote digital CASA growth to maintain low-cost liquidity without sacrificing profitability.

4. Liquid Assets to Total Deposits (LATD)

Stabilize retail and CASA deposits to reduce dependence on volatile bulk funds and strengthen liquidity. Conduct stress tests and maintain contingency plans to ensure adequate deposit coverage in adverse periods.

IX. CONCLUSION

The Canara & Syndicate bank merger has generated positive financial outcomes for the merged entity. CAMEL-based analysis shows that capital adequacy, profitability, and liquidity improved in the post-merger period, supported by higher CAR, ROE, ROA and stronger liquidity buffers. Asset quality indicators such as Gross and Net NPAs also declined, though without statistical significance, indicating gradual improvement. Management efficiency showed mixed results due to integration adjustments.

Overall, the merger strengthened financial stability, enhanced risk-bearing capacity, and improved earnings quality, supporting the strategic rationale behind public sector bank consolidation. The findings provide empirical validation that merger-driven restructuring can enhance long-term resilience and operational efficiency, contributing valuable insights for policymakers, regulators, and banking practitioners evaluating future consolidation initiatives in the Indian banking sector.

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