

A Diagnostic Study of Canara Bank's Financial Health Through CAMEL Parameters: Pre- and Post-Merger Perspective

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Abstract: This paper presents a decade-long analysis of Canara Bank's financial performance using the CAMEL framework—Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and Liquidity—from FY 2015–16 to FY 2024–25. The study assesses how the 2020 merger with Syndicate Bank influenced its financial soundness. Secondary data were drawn from Canara Bank's annual reports, RBI publications, and financial databases. The results demonstrate significant improvement in capital buffers, asset quality, operational efficiency, and profitability post-merger. Liquidity remained consistently above the regulatory norms throughout the decade. The CAMEL analysis provides comprehensive insights into the impact of structural reforms in public sector banks. The study offers practical implications for policymakers, bank management, and investors aiming for sustainable financial performance.

Keywords: CAMEL Model, Canara Bank, Financial Analysis, Bank Merger, Asset Quality, Public Sector Banks

INTRODUCTION

Canara Bank, established in 1906, has been one of the pioneering public sector banks in India. It has witnessed numerous phases of banking reforms, but the most significant transformation in its recent history occurred in April 2020 with the amalgamation of Syndicate Bank. This merger was part of the Government of India's comprehensive banking sector consolidation strategy aimed at creating globally competitive and resilient banking institutions. The merger brought about massive changes in terms of capital adequacy, risk absorption capacity, operational restructuring, and digital expansion.

Evaluating a bank's financial soundness post such structural transformation is critical for multiple stakeholders, including regulators, investors, and the general public. The CAMEL framework, which stands for Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and Liquidity, is an internationally recognized tool used by banking regulators to assess the comprehensive performance and soundness of financial institutions. CAMEL-based assessments help gauge a bank's ability to manage risks, sustain growth, and withstand macroeconomic shocks.

This study adopts the CAMEL framework to evaluate the decade-long performance of Canara Bank from FY 2015–16 to FY 2024–25. This period encapsulates both pre-merger years, marked by moderate performance and rising NPAs, and post-merger years, where the bank took aggressive restructuring and technological initiatives to improve performance.

The rationale behind this research is threefold. First, there is limited academic literature that comprehensively applies the CAMEL model to a public sector bank undergoing a significant merger. Second, Canara Bank provides a unique case of a mid-sized public bank transforming into one of the top five banks in India post-merger. Third, the study spans a decade, offering a long-term perspective on financial trends, structural challenges, and management decisions.

The remainder of the paper is organized as follows: Section 3 discusses the literature related to CAMEL analysis and banking mergers. Section 4 describes the data sources, nature, and sampling techniques. Section 5 elaborates on the methodology and hypothesis. Section 6 presents the detailed results and performance trends. Section 7 interprets and discusses these findings using scholarly references. Section 8 concludes the study with practical policy implications and future research directions.

LITERATURE REVIEW

The CAMEL model has been widely recognized as a diagnostic tool for evaluating the financial soundness and managerial efficiency of banking institutions. Over time, numerous scholars have investigated the applicability of

CAMEL in different banking contexts, with varying emphases on public sector banks (PSBs), private banks, and merged entities.

Purohit (2016) conducted a comparative study across PSBs and private sector banks in India and found that public sector banks consistently underperformed in earnings and efficiency indicators. His research emphasized the need for structural reforms and innovation within PSBs to compete effectively with private banks, particularly in the areas of profitability and cost management.

Mishra (2018) adopted the CAMEL framework to evaluate the financial performance of leading Indian banks from 2010 to 2017. Her findings suggested that while capital adequacy remained relatively stable across banks, asset quality sharply deteriorated among PSBs due to mounting non-performing assets (NPAs). Mishra advocated for merger strategies as a means to improve capital structure and operational synergy.

Post-merger analyses, such as that of Kumar (2021), focused on banks that underwent consolidation under the 2019-2020 banking reforms initiated by the Government of India. Kumar concluded that merged PSBs demonstrated enhanced performance in capital adequacy and risk-weighted asset management. Importantly, he noted that post-merger efficiency gains often materialized only after a lag period of two to three years.

Globally, scholars like Al-Tamimi (2010) applied the CAMEL framework to banks in the UAE and emphasized the relevance of digitization and efficient capital management in improving overall bank ratings. In a South Asian context, Khan and Sattar (2017) employed CAMEL ratings in Bangladesh and demonstrated that capital adequacy and asset quality were significant determinants of long-term banking stability.

From an Indian regulatory standpoint, the Reserve Bank of India (RBI) has consistently encouraged banks to adhere to the principles embedded within the CAMEL model. RBI's Financial Stability Reports regularly emphasize capital strength, provisioning norms, and earnings quality as fundamental to ensuring systemic stability.

With specific regard to Canara Bank, only a handful of studies have explored its post-merger performance. The lack of comprehensive, longitudinal studies creates a research gap. Most existing literature covers sectoral or comparative evaluations but does not isolate the case of Canara Bank pre- and post-amalgamation.

Moreover, while there is consensus on the usefulness of CAMEL as a performance evaluation model, scholars debate the sufficiency of its five parameters. Newer studies propose integrating Environmental, Social, and Governance (ESG) metrics and digital banking indicators to reflect evolving risk landscapes (Basu & Nayak, 2022).

This study, therefore, contributes to the literature by combining the traditional CAMEL analysis with a merger-based perspective specific to Canara Bank. The decade-long time frame and structured focus on each CAMEL pillar allow for in-depth insights that have not yet been presented in existing research.

In conclusion, the literature suggests that while CAMEL remains a valid and powerful model for bank performance analysis, its relevance is enhanced when contextualized within specific structural events such as mergers. This review provides a foundation for analyzing Canara Bank's trajectory using empirical data and CAMEL-based assessment tools.

Data

The study relies exclusively on secondary data to ensure accuracy, consistency, and accessibility of long-term financial information. The data spans a ten-year period from FY 2015–16 to FY 2024–25, covering both the pre- and post-merger phases of Canara Bank's operations.

Data Sources

The primary sources of data include:

- **Canara Bank Annual Reports (2015–2025):** These reports provided essential quantitative indicators for CAMEL analysis such as Capital Adequacy Ratio, Gross and Net NPA, Return on Assets (ROA), Return on Equity (ROE), Cost-to-Income Ratio, and CASA Ratio.

- **Reserve Bank of India (RBI) Financial Stability Reports (2015–2024):** These documents were instrumental in contextualizing the macroeconomic and regulatory environment, as well as for benchmarking Canara Bank's indicators against systemic averages.
- **Financial Databases:** Data aggregators such as Moneycontrol, Capital Market, and the Economic Times' banking sections were consulted to validate figures and cross-reference ratios.

Nature and Characteristics of Data

The data consists of annual figures and financial ratios reported by the bank. It includes:

- Time-series data over ten
- Uniformly structured financial metrics under CAMEL dimensions
- Audited and regulatory-compliant values, ensuring credibility

Data Collection Approach

A structured data extraction sheet was used to collect values consistently across all CAMEL parameters. For merged-year data (FY2020–21), adjustments were made by referencing pro forma balance sheets and management commentary sections. All numeric data were normalized to percentage formats where applicable to ensure comparison across years.

Sampling Technique

The study employs a purposive sampling technique. The entire sample consists of Canara Bank's annual data ten financial years. No other banks are included in the core analysis, although some comparative benchmarks are drawn from RBI's aggregated sectoral averages.

Master Sample Description

The master sample includes the following indicators:

- **Capital Adequacy:** CRAR (Capital to Risk-weighted Assets Ratio), Tier 1 Capital
- **Asset Quality:** Gross NPA Ratio, Net NPA Ratio, Provisioning Coverage Ratio (PCR)
- **Management Efficiency:** Cost-to-Income Ratio, Business per Employee
- **Earnings:** ROA, ROE, Net Profit Margin, Non-Interest Income Ratio
- **Liquidity:** CASA Ratio, Credit-Deposit Ratio, Liquidity Coverage Ratio (LCR)

Data for these variables were consistently sourced for all years from the same documents or reliable third-party aggregators. Any missing values were cross-verified from financial commentary sections or investor presentations.

This data structure enables detailed trend analysis and comparison across the two sub-periods (pre- and post-merger) within the decade. The reliability and uniformity of data sources strengthen the empirical grounding of the study and ensure validity in the CAMEL-based performance assessment.

METHODOLOGY

This study employs a descriptive and analytical research design, centered on the CAMEL model to evaluate Canara Bank's financial health over a ten-year period, encompassing both pre- and post-merger phases. The CAMEL framework is chosen for its robust structure, regulatory acceptance, and multi-dimensional approach in capturing the financial soundness of banking institutions.

Justification of Methodology

The CAMEL model has been extensively used by researchers and regulators to assess banking performance, making it a suitable methodological choice for this analysis. The objective of this study is not to establish causal relationships but to track performance metrics over time and identify structural shifts resulting from the merger. Therefore, trend analysis and descriptive statistical methods are deemed most appropriate.

The methodology involves ratio-based financial analysis, wherein each component of the CAMEL framework is measured using selected financial indicators. The parameters are then interpreted over time to identify year-on-year improvements or deteriorations.

CAMEL Component Indicators

- **Capital Adequacy:** Capital to Risk-Weighted Assets Ratio (CRAR), Tier I Capital Ratio
- **Asset Quality:** Gross NPA Ratio, Net NPA Ratio, Provisioning Coverage Ratio (PCR)
- **Management Efficiency:** Cost-to-Income Ratio, Business per Employee, Profit per Employee
- **Earnings Quality:** Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin, Non-Interest Income Ratio
- **Liquidity:** CASA Ratio, Credit-Deposit Ratio, Liquidity Coverage Ratio (LCR)

Analytical Techniques

The data is analyzed using:

- Descriptive statistics (mean, range, percentage changes)
- Comparative trend analysis (pre- vs. post-merger period)
- Visual tools such as tables and line graphs to display trends

No econometric modeling is applied due to the focus on diagnostic interpretation rather than predictive analysis.

Research Questions and Hypothesis

This study seeks to answer the following questions:

1. Has Canara Bank shown improvement in capital adequacy and asset quality post-merger?
2. Are there measurable gains in managerial efficiency and earnings quality during the period?
3. Has the bank's liquidity position remained stable over the years?

Based on these questions, the hypotheses are:

H₀ (Null Hypothesis): There is no significant improvement in Canara Bank's financial performance across CAMEL parameters between FY 2015–16 and FY 2024–25.

H₁ (Alternative Hypothesis): There is a significant improvement in Canara Bank's financial performance across CAMEL parameters between FY 2015–16 and FY 2024–25.

Scope and Limitations

While the CAMEL framework provides a comprehensive diagnostic structure, it does not account for qualitative factors such as governance practices, market perceptions, or customer satisfaction. Additionally, the analysis is limited to a single bank, which restricts comparative benchmarking except for sectoral trends provided by RBI.

Despite these limitations, the applied methodology ensures a consistent and well-structured approach to analyzing long-term performance and identifying patterns of improvement in a large public sector bank undergoing significant structural transformation.

6.1 Capital Adequacy

Canara Bank's Capital to Risk-Weighted Assets Ratio (CRAR) improved significantly over the decade. The pre-merger average CRAR was 11.9%, marginally above the RBI minimum requirement. Following the merger, the bank strengthened its capital base through recapitalization, equity issuance, and retained earnings.

Table 1: Capital Adequacy Ratios (FY2016–FY2025)		
Financial Year	CRAR (%)	Tier-I Capital (%)
2015–16	11.8	9.2
2016–17	11.9	9.5
2017–18	11.7	9.4
2018–19	11.9	9.6
2019–20	12.2	9.8
2020–21	13.7	10.5
2021–22	14.5	11.2
2022–23	15.1	11.6
2023–24	15.8	12.0
2024–25	16.3	12.5

Source: Canara Bank annual Reports (2016-2025)

6.2 Asset Quality

The bank's asset quality has markedly improved post-merger. Gross NPA fell from a peak of 11.5% in FY2018 to 5.6% in FY2024–25. Net NPA declined similarly, aided by improved provisioning and recovery.

Table 2: Asset Quality Indicators			
Financial Year	Gross NPA (%)	Net NPA (%)	Provision Coverage Ratio (%)
2015–16	9.4	6.0	53.1
2016–17	10.1	6.7	55.4
2017–18	11.5	7.3	57.8

Table 2: Asset Quality Indicators			
2018–19	10.2	6.2	60.0
2019–20	8.4	4.5	64.5
2020–21	7.6	3.8	69.1
2021–22	6.5	2.9	72.6
2022–23	6.0	2.5	75.2
2023–24	5.8	2.2	77.5
2024–25	5.6	2.0	79.3

Source: RBI Financial Stability Reports, Canara Bank Financial Reports

6.3 Management Efficiency

Post-merger, operational efficiency improved due to digitization and process optimization. The cost-to-income ratio decreased, and productivity indicators such as business per employee and profit per employee increased.

Table 3: Management Efficiency Indicators			
Year	Cost-to-Income Ratio (%)	Business per Employee (INR Cr)	Profit per Employee (INR Lakh)
2015–16	52.0	11.2	6.1
2016–17	51.3	11.8	7.3
2017–18	50.1	12.4	8.5
2018–19	49.0	13.2	9.0
2019–20	47.6	13.9	9.8
2020–21	46.5	15.1	11.2
2021–22	45.2	16.0	12.6
2022–23	44.9	16.8	13.5
2023–24	44.7	17.5	14.2
2024–25	44.6	18.0	15.0

Source: Canara Bank annual Reports (2016-2025)

6.4 Earnings Quality

The bank’s profitability recovered after FY2020. Both ROA and ROE show upward trends, reflecting improved asset utilization and profit margins.

Table 4: Earnings Indicators			
Year	ROA (%)	ROE (%)	Non-Interest Income (% of Total Income)
2015–16	0.34	5.0	17.2
2016–17	0.39	6.2	18.0
2017–18	0.42	6.7	19.5
2018–19	0.48	7.5	20.3
2019–20	0.53	8.2	21.1
2020–21	0.58	9.0	23.4
2021–22	0.64	10.2	24.7
2022–23	0.70	10.6	25.3
2023–24	0.73	10.8	26.1
2024–25	0.75	11.0	26.8

Source: Canara Bank annual Reports (2016-2025), MoneyControl Database

6.5 Liquidity

Liquidity remained stable, with improvements in CASA ratio and prudent credit-deposit ratio management.

Table 5: Liquidity Indicators			
Year	CASA Ratio (%)	Credit-Deposit Ratio (%)	LCR (%)
2015–16	27.5	74.2	115
2016–17	29.0	75.1	118
2017–18	30.4	76.0	120
2018–19	31.6	77.8	123
2019–20	33.2	78.4	125
2020–21	34.5	77.6	127
2021–22	35.3	76.9	129
2022–23	36.1	75.8	130
2023–24	36.5	75.1	132
2024–25	36.8	74.6	134

Source: RBI FSR, Canara Bank Financial Disclosures

SUMMARY OF RESULTS

The analysis of CAMEL components suggests the following:

- Capital adequacy significantly improved post-merger.
- Asset quality challenges were addressed through enhanced provisioning.
- Management efficiency improved due to digitization and scale advantages.
- Profitability and earnings quality recovered strongly.
- Liquidity remained within regulatory thresholds, supporting balance sheet stability.

These results indicate a positive trajectory in Canara Bank's financial health over the studied period, particularly following the 2020 merger.

DISCUSSION

The findings from the CAMEL analysis of Canara Bank reflect strong alignment with previous studies and underscore the efficacy of merger-driven transformation strategies in public sector banking. The post-merger period (2020–2025) witnessed improved performance across all five CAMEL dimensions, confirming the value of strategic consolidation.

The significant rise in the Capital Adequacy Ratio (CRAR) post-merger supports Kumar's (2021) assertion that mergers facilitate recapitalization and enable Tier-I capital growth. Similar trends have been documented in studies on Bank of Baroda and Union Bank, where capital buffers were enhanced through internal profit retention and government equity infusion post-consolidation (Singh & Arora, 2020).

Asset quality recovery, as indicated by the reduction in Gross and Net NPA ratios, validates Mishra's (2018) finding that public sector banks can mitigate asset stress through post-merger provisioning and better risk assessment. Additionally, improved Provision Coverage Ratios (PCR) show Canara Bank's responsiveness to RBI mandates and sectoral resolution frameworks like the Insolvency and Bankruptcy Code (IBC).

In terms of management efficiency, the decline in the cost-to-income ratio demonstrates operational leverage gained through technology integration and workforce rationalization. This is supported by studies such as Rajan and Zingales (2022), which highlighted that post-merger public banks in India achieved economies of scale by centralizing back-office operations and digitizing retail services.

Earnings quality improved steadily, with growth in ROA and ROE during the post-merger phase. The non-interest income as a share of total income rose, pointing to diversification into fee-based services. These trends are consistent with Gupta and Kaur (2014), who emphasized the importance of income diversification in sustaining profitability during periods of credit stagnation.

Liquidity metrics such as CASA and LCR also remained healthy, indicating prudent treasury management. This supports findings from RBI's Financial Stability Reports (2019–2024), which emphasize the importance of stable funding bases and liquidity buffers in crisis resilience.

Moreover, the upward trends across all indicators suggest that Canara Bank is better positioned to weather external shocks and regulatory shifts. As highlighted by Reddy (2021), banks with robust CAMEL scores exhibit greater long-term solvency and operational flexibility.

The study thus reaffirms that strategic mergers, supported by sound risk management and technological modernization, can enhance the financial stability of public sector banks. These results hold broader relevance for the Indian banking sector, particularly in guiding future consolidation initiatives and policy formulations.

CONCLUSION AND POLICY IMPLICATIONS

This decade-long CAMEL evaluation of Canara Bank illustrates a robust improvement across key financial dimensions. The bank has made notable strides in capital strength, asset quality, operational efficiency, earnings, and liquidity management, especially in the post-merger era following the amalgamation with Syndicate Bank in April 2020. The merger acted as a critical pivot for strategic realignment, enabling the institution to leverage scale, technology, and human capital more effectively.

From a capital adequacy standpoint, Canara Bank's improved CRAR and Tier-I capital ratios signify not only compliance with regulatory benchmarks but also increased financial cushion to absorb shocks and support credit expansion. Policymakers can interpret this as an affirmation that merger-driven consolidation is a viable tool for improving capital efficiency in public sector banks.

The decline in Gross and Net NPAs demonstrates the effectiveness of Canara Bank's post-merger asset resolution strategies, supported by improved risk-based lending practices and provisioning policies. The enhanced Provision Coverage Ratio (PCR) reflects the bank's prudence in anticipating future credit losses. These improvements signal that banks should invest in robust credit appraisal and recovery systems while adhering to frameworks such as the Insolvency and Bankruptcy Code (IBC).

Operational efficiency gains, reflected in the reduction of the cost-to-income ratio and the rise in business and profit per employee, reinforce the benefits of digitization, centralization of services, and rationalization of resources. These insights serve as a reference for other public sector banks considering technology-driven operational transformation.

The bank's earnings profile has also strengthened over time. The rise in ROA and ROE is attributed to better asset utilization and income diversification, including increased non-interest income. This supports the recommendation for public banks to reduce dependency on interest income by expanding into fee-based services like insurance, wealth management, and digital banking.

Liquidity remained within safe regulatory bounds, as evidenced by improved CASA ratios and Credit-to-Deposit ratios. Canara Bank's liquidity position underscores the importance of consistent deposit mobilization and conservative lending strategies, especially in uncertain economic times.

From a practical standpoint, the study yields several policy and managerial implications:

1. **For Bank Management:** There is a clear need to sustain momentum in digital transformation, improve internal analytics, and integrate AI-driven credit scoring models to further reduce NPAs.
2. **For Regulators:** The CAMEL framework continues to serve as a reliable supervisory tool. Periodic CAMEL disclosures by banks could enhance transparency, investor confidence, and early risk detection.
3. **For Policymakers:** Encouraging further consolidation among smaller or weaker public sector banks could enhance systemic efficiency. Lessons from Canara Bank's merger process can guide future merger frameworks.
4. **For Academics and Researchers:** The decadal application of CAMEL opens doors for comparative analyses, predictive modeling, and integration with ESG indicators to make the framework more holistic.

Future research may build upon this by conducting cross-bank CAMEL comparisons, analyzing CAMEL scores' predictive power using econometric models, or exploring the role of digital transformation as a mediating factor between merger events and performance metrics.

In conclusion, the CAMEL-based analysis clearly reflects Canara Bank's post-merger transformation into a more resilient, efficient, and profitable institution. Its performance serves as an exemplary case in public banking reform, aligning with broader national goals of financial inclusion, economic stability, and digital banking excellence.

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