Analysis of Financial Performance and Operational Efficiency of State Bank of India Using the CAMEL Framework

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ABSTRACT

The CAMEL framework, which evaluates banks across five important dimensions—capital adequacy, asset quality, management efficiency, earnings, and liquidity—is used in this research paper, "CAMEL Model Analysis of SBI," to assess the financial soundness and operational efficiency of SBI over the 2021–2025 period. SBI maintained strong capital ratios, improved asset quality with declining non-performing assets and high provision coverage, and showed increasing profitability and management efficiency with rising ROA and ROE, according to the study, which is based solely on secondary data from official reports and financial statements. Healthy profit margins and increasing cost effectiveness helped the bank maintain a steady level of earnings quality, while a steadily rising credit-deposit ratio indicated that its liquidity was well-managed. These results validate SBI's critical role in promoting financial inclusion, credit expansion, and economic development by highlighting its resilience, excellent governance, and conformity to regulatory norms. In India's changing banking environment, the CAMEL model is a reliable instrument for performance evaluation that provides insightful information for corporate strategy, regulatory supervision, and stakeholder decision-making.This quantitative study evaluates SBI's performance using financial indicators from the CAMEL model—capital adequacy, asset quality, management efficiency, earnings, and liquidity. It relies solely on secondary data from reliable sources like SBI's annual reports, financial statements, and relevant literature.Based on secondary data, the findings reveal SBI's consistent strength across key operational areas. The bank maintained strong capital adequacy and regulatory compliance, reflecting overall financial stability. It effectively absorbed economic shocks and managed risks through robust internal controls. Operational efficiency improved through strategic cost management and effective resource use. Profitability showed steady growth, driven by sound financial discipline and leadership. Asset quality also improved, marked by reduced NPAs and higher provision coverage, supported by proactive risk management reforms.

Keywords: Bank Profitability, Camel Framework, Financial Performance, Operational Efficiency, Public Sector Banks

INTRODUCTION

The robust banking system in India is crucial for economic development as it effectively allocates resources from savers to borrowers. It is structured into scheduled banks, non-scheduled banks, and development banks, along with cooperative and local area banks serving diverse needs.

State Bank of India (SBI), the country's largest public sector bank, significantly influences the financial ecosystem through its wide range of services and vast operational scale. Given its systemic importance, regularly assessing SBI's financial health is essential for understanding its efficiency, resilience, and role in supporting financial inclusion, credit growth, and economic stability.

Using the CAMEL model—covering capital adequacy, asset quality, management efficiency, earnings, and liquidity—offers a structured approach to evaluating SBI's performance. This model not only supports strategic decision-making within the bank but also aids regulators, policymakers, and investors in assessing risk and promoting financial sustainability in a rapidly evolving digital and regulatory environment.Assessing performance plays a vital strategic role in strengthening the banking sector. It helps banks recognize their strengths and weaknesses through financial ratios and key indicators that measure profitability, liquidity, and solvency. For instance, a high return on assets (ROA) reflects efficient management, while a high debt-to-equity ratio may indicate potential solvency issues. By analyzing these metrics, banks can implement focused improvements to enhance overall performance.

Performance evaluations also contribute to improving operational efficiency by identifying inefficiencies in processes and resource allocation. Streamlining operations, optimizing resource use, and analyzing customer service metrics help reduce costs, improve service delivery, and enhance customer satisfaction. Additionally, performance assessment is crucial for risk mitigation. By monitoring key risk indicators such as credit risk, market risk, and non-performing loans (NPLs), banks can take proactive measures to prevent losses and maintain financial stability.

Moreover, a consistent focus on performance strengthens banking stability. Efficient operations and effective risk management practices contribute to a more resilient banking system, fostering trust among depositors and investors while supporting steady credit flow to the economy. Regular performance assessments can help prevent bank failures, reinforcing the stability of the overall financial system.

Finally, performance evaluations drive competition and innovation within the sector. By highlighting top and bottom performers, they encourage banks to innovate and improve products and services to gain a competitive edge. These assessments also support regulatory oversight by helping identify systemic risks early, enabling timely and targeted interventions to safeguard the financial system.

About CAMEL Approach:

The CAMELS Rating System is a widely recognized framework used by banking regulators to evaluate the overall health and performance of banks and financial institutions. Originally developed in 1979 by the Federal Financial Institutions Examination Council (FFIEC) in the United States, it was introduced as the Uniform Financial Institutions Rating System (UFIRS). The system employs a rating scale from 1 (strongest) to5 (weakest) to assess key aspects of a bank's operations, including financial stability, operational efficiency, and risk management practices. Although the CAMELS methodology is extensively used by regulatory bodies, the specific ratings are not disclosed publicly, serving instead as an internal supervisory tool. This framework helps regulators identify emerging risks and take corrective actions to maintain the soundness of the financial system.

C (Capital Adequacy): Capital adequacy measures a bank's ability to absorb possible losses while continuing to operate under financial difficulty. It guarantees that the bank has a solid capital base to protect its customers and enable future growth. A well-capitalized bank is able to endure unexpected losses and economic downturns, ensuring financial stability

- **Capital Adequacy Ratio (CAR):**

This Ratio is a calculation of a bank's available capital as a percentage of its risk-weighted assets. It is an important indicator of a bank's financial soundness and capacity to absorb unexpected losses. Banks have a variety of hazards, including credit risk (borrowers failing to repay loans), market risk (changes in interest rates and currency rates), and operational risk. Banks must maintain a minimum amount of capital to protect depositors and preserve systemic stability.

Tier 1 Capital Ratio:

Tier 1 capital represents a bank's fundamental capital. It consists of equity capital, paid-up capital, statutory reserves, and retained earnings. This is perpetual capital that does not need to be repaid. It allows banks to continue operating while absorbing losses.

Tier 2 Capital Ratio:

Tier 2 capital is referred to as additional capital. It covers subordinated debt and hybrid capital products, General provisions, and Revaluation of reserves. This capital is less durable and riskier than Tier 1. It enables banks to cover losses once Tier 1 capital has been exhausted.

A(Asset Quality): Asset quality refers to the stability of a bank's loan and investment portfolios. The quality of the bank's assets, particularly loans, has a direct impact on its profitability and risk exposure. If the bank's assets are of poor quality, such as loans with significant default risk, it raises the likelihood of financial losses. Strong asset quality is critical for long-term viability

- **Non-Performing Assets (NPA):**

The ratioof a non-performing asset is a loan or advance when the interest or instalment is more than 90 days overdue (for term loans). Cash credit and overdraft accounts do not get interest payments. The NPA Ratio indicates what percentage of a bank's loans have gone bad or are not generating money.

- **Provision Coverage Ratio:**

The percentage of bad loans (NPAs) for which the bank has made a provision or reserve is referred to as the PCR. It indicates how much the bank has protected itself against future losses.

M (Managementefficiency): Management capability is concerned with the efficiency and effectiveness of a bank's leadership and internal governance. It demonstrates the management team's ability to detect, control, and respond to diverse risks, make strategic decisions, and ensure regulatory compliance. Good management is essential for guaranteeing smooth operations, growth, and crisis resolution.

- **Return on Assets (ROA):**

ROA is a profitability measure that indicates how well a bank uses its total assets to create profits. It indicates how much net income is made per rupee of assets.

- **Return on Equity (ROE):**

The profitability in relation to shareholders' equity is measured by ROE. It demonstrates how well the bank uses owners' money to create a profit.

E (Earning quality):

Earnings help to assess a company's long-term viability. To expand its activities and retain its competitiveness, a bank needs a reasonable return. The examiner focuses on earnings stability, return on assets (ROA), net interest margin (NIM), and future earning possibilities in the face of tough economic times. The most essential factor in determining earnings is core earnings. Core earnings are an institution's long-term and consistent earnings that are influenced by one-time expenses.

- **Net Interest Margin (NIM):**

NIM is a crucial profitability ratio. As a proportion of earning assets, it calculates the difference between interest paid on deposits and interest earned on loans or investments.

- **Cost to Income Ratio**

This ratio evaluates a bank's operational effectiveness. It contrasts the bank's operating income (interest income, fees, etc.) with its operating expenses (rent, salaries, administrative costs).

L(Liquidity):

The ability of a bank to fulfil short-term financial obligations, like withdrawals or payments, without experiencing operational difficulties is referred to as liquidity. A bank run is less likely when there is adequate liquidity, which also guarantees consumer trust. For both long-term solvency and daily operations, liquidity management is essential.

- **Credit to Deposit Ratio (CD Ratio)**

This ratio displays the percentage of total deposits that have been disbursed as loans by the bank. It makes the bank's lending strategy and liquidity easier to understand.

The CAMEL approach is a generally accepted and worldwide utilised supervisory assessment system that assesses the financial health, performance, and stability of banks and other financial institutions. It was first introduced by banking authorities in the United States and thereafter adopted by central banks and regulatory agencies all around the world, including the Reserve Bank of India.

Review of literature: To evaluate the performance of Indian banks, the CAMEL model has been used in numerous research. Nevertheless, this analysis attempts to close the gap by utilising the most recent financial data to assess SBI's performance efficiency from 2021 to 2025 utilising the CAMEL framework.

1. **Prasad, K. V. N., & Reddy, D. M. (2011):** In this research, they compared Andhra Pragathi Grameena Bank (APGB) and Sapthagiri Grameena Bank, two regional rural banks, using CAMEL factors. SGB was superior in asset quality and profit per employee, whereas APGB was superior in capital sufficiency, earnings quality, and the ratio of total assets to total deposits. Both banks' levels of liquidity were similar

2. **Meena, G. L. (2016)**: Using metrics including profit per employee, debt-to-equity ratio, asset-to-deposit ratio, and net non-performing asset (NPA)-advance ratio, it assessed public and private sector banks using the CAMEL model. The independent variable was the return on assets. According to the statement, improving bank performance and fostering economic growth depend heavily on the efficient financial management of these problems.

3. **Chaudhuri, B. (2018):** This study employed the CAMEL model to compare the financial performance of SBI (public sector) and ICICI Bank (private sector) during a five-year period. The investigation revealed that, while both banks met financial standards, ICICI Bank surpassed SBI in terms of management efficiency and profitability

4. **Srinivas, T., & Lavanya, B. (2018):** It used CAMEL indices to assess banks in the private sector. According to the results, ICICI Bank was ranked first, followed by Kotak Mahindra and HDFC. The CAMEL characteristics of each bank, however, displayed a variety of strengths and weaknesses with no discernible growth pattern.

5. **Biswas, S., & Bhattacharya, M. (2020):**The study used the CAMEL model to compare the performance of ten private sector banks, including ICICI, Axis, HDFC, YES, Kotak Mahindra, Indusland, IDBI, Bandhan, and IDFC. The banks were ranked based on overall performance. Bandhan Bank was the top performer, followed by HDFC Bank, which showed strong financial indicators under CAMEL standards.

6. **Konnur, N. P., et al. (2022):**It compared public and private banks' performance using CAMEL features and ANOVA. Kotak Mahindra Bank, a private sector bank, received the top rating, notably in terms of profitability, earnings capacity, and managerial excellence.

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7. **Kumar, G. A. (2022):** It clarifies the purpose of this. We looked at the financial results of five banks in the public and private sectors, including the Central Bank of India, from 2017 to 2022 using the CAMEL technique. According to the report, private sector banks performed better than public sector banks across the majority of financial parameters.

8. **Kanchan, & Chaudhary, R. (2023):**This study used the CAMEL model to assess Small Finance Banks (SFBs) from 2017-18 to 2021-22. Suryoday Small Finance Bank had great capital adequacy, but AU Small Finance Bank outperformed in management quality, leverage, and profitability, demonstrating the superiority of SFBs in specialised financial sectors.

9. **Patani, K., & Thakur, S. S. (2023)**: The usefulness of the CAMEL model in management and investor decision-making was evaluated in this study with that of HDFC Bank and Bank of Baroda. According to the examination, HDFC Bank's balance sheet showed superior operational scale and financial soundness, being 40.85% larger than Bank of Baroda's.

10. **Carter, R. J. (2024):**This study used the CAMELS model to analyse the financial performance of SBI and Indian Bank from 2017–18 to 2021–22. Both banks did well, it was found, while Indian Bank did a little better in some places. The importance of bolstering public-sector banks to support overall economic development was underlined in the report.

Objectives of the study:

- To know about the camel approach.
- To analyze performance indicators using the camel approach.

RESEARCH METHODOLOGY

The present study employs a descriptive research approach to evaluate the performance efficiency of the State Bank of India (SBI) using the CAMEL model.This study draws on secondary data from reliable and published sources, including SBI's annual reports, financial statements, and balance sheets, as well as journals, research papers, research articles, and dissertations on the CAMEL model and banking performance.

Data analysis and interpretation

This table shows the bank's capital strength and regulatory compliance from 2021 to 2025, including the Capital Adequacy Ratio, which includes Tier 1 and Tier 2 Capital Ratios.

Table -1 Capital Adequacy Ratio

Ratio	**2021**	**2022**	**2023**	**2024**	**2025**
Capital Adequacy Ratio	13.74	13.85	14.68	14.28	14.25
Tier 1 Capital Ratio	11.44	11.16	12.06	11.93	12.11
Tier 2 Capital Ratio	2.30	2.69	2.62	2.35	2.14

Interpretation:

- The Capital Adequacy Ratio rose from 13.74 in 2021 to 14.68 in 2023, then slightly declined to 14.25 in 2025, indicating stable but marginally reduced capital buffers in recent years.

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- This protects depositors and investors and demonstrates the bank's financial stability. A rising Tier 1 ratio implies that the bank is improving its basic financial position through retained earnings or equity. This increases the bank's ability to take on new business while minimising risk.

- A robust Tier 1 basis boosts investor trust and ensures long-term sustainability. The drop suggests that the bank is relying more on steady Tier 1 capital, which is safer and more enduring. This shift demonstrates a conservative and robust approach to capital management.

This table illustrates the Gross NPA, Net NPA, and Provision Coverage Ratio, which indicate the bank's asset quality and risk provisioning trends over the last five years.

Table -2 Asset Quality Ratio

Ratio	**2021**	**2022**	**2023**	**2024**	**2025**
Non-Performing Assets Ratio (Gross)	5.00	3.97	2.78	2.24	1.82
Non-Performing Assets Ratio (Net)	1.50	1.02	0.67	0.57	0.47
Provision Coverage Ratio	87.75	90.20	91.91	91.89	92.08

Interpretation:

- A decrease in Gross NPA indicates improved loan recovery, credit evaluation, and monitoring systems. This reduces income loss due to defaults and reduces the need for capital for provisions, leading to increased profitability.

- The net NPA shows the real loss after provisions are made. The lower the value, the cleaner the loan book. A 2025 ratio of 0.47% is extremely low, indicating excellent risk control and minimal bad asset exposure.

- A PCR above 90% indicates that the bank has set aside provisions to cover 90%+ of its NPAs. This demonstrates the bank's caution and conservatism, which is a positive indicator for investors. High PCRs limit future risks and smooth gains by preventing huge, unexpected losses.

The table shows the Return on Assets (ROA) and Return on Equity (ROE), which indicate how well the bank's management uses its resources to generate profits.

Table -3 Management Efficiency Ratio

Ratio	**2021**	**2022**	**2023**	**2024**	**2025**
Return on Assets	0.45	0.63	0.91	0.98	1.06
Return on Equity	8.86	12.33	16.75	17.46	17.13

Interpretation:

- A greater ROA indicates a bank's efficient use of assets for profit generation. Rising ROE indicates improved internal operations, cost control, and resource allocation.

- It also indicates great profitability, capital efficiency, and investor returns. Maintaining this level indicates strategic strength and balanced growth.

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This table shows the Net Interest Margin, Net Profit Margin, and Cost to Income Ratio, which represent the quality and sustainability of the bank's earnings.

Table - 4 Earning Quality Ratio

Ratio	**2021**	**2022**	**2023**	**2024**	**2025**
Net Interest Margin	2.44	2.42	2.62	2.58	2.50
Net Profit Margin	7.69	11.49	15.12	14.71	15.33
Cost to Income Ratio	53.59	57.91	53.86	59.01	51.63

Interpretation:

- A stable NIM indicates that the bank has maintained solid lending margins despite interest rate fluctuations. This demonstrates consistent profit from core operations.
- A greater NPM indicates that the bank retains more net profit from total income. It indicates improved cost control, reduced provisioning requirements, and increased revenue growth. High margins indicate that the bank is well managed and profitable.
- The Cost-to-Income Ratio fluctuated over the period, peaking at 59.01 in 2024 before falling to 51.63 in 2025, indicating improved operational efficiency in the latest year.

This table displays the Credit-Deposit Ratio, which demonstrates how much of the bank's deposits are used for credit and how liquid it is.

Table – 5 LiquidityRatios

Ratio	**2021**	**2022**	**2023**	**2024**	**2025**
Credit Deposit Ratio	68.97	67.03	70.01	73.91	76.39

Interpretation:

- This indicates that the bank is lending out a larger percentage of its deposits, increasing revenue.
- A rise indicates the expansion of credit, but if it is excessive, it may impact liquidity. Although it needs to be watched to prevent liquidity stress, the current level shows balanced lending expansion.

Findings:

Capital Adequacy Ratio:

- The bank is well-capitalized, as seen by its Capital Adequacy Ratio, which has been over 13% for the previous five years. In 2023, the bank's top CAR of 14.68% reflected its strongest capital position to date.
- The percentage fell slightly in 2024 and 2025, although it remained significantly higher than the legal level.
- Tier 2 Capital fluctuated slightly, peaking in 2022 and then steadily declining until 2025; the Tier 1 Capital ratio increased from 11.44% in 2021 to 12.11% in 2025.

Asset Quality Ratio:

- The Gross NPA ratio reduced from 5.00% to 1.82% over five years.
- The net NPA decreased from 1.50% to 0.47%, a significant reduction.
- The provision coverage ratio (PCR) increased from 87.75% to 92.08%.

Management Efficiency Ratio:

- ROA increased by more than double and reached 1% by 2025.
- ROE nearly doubled to 17.46% by 2024.

Earning Quality Ratio:

- NIM remained constant, fluctuating between 2.44% and 2.62%. • Net profit margin climbed from 7.69% in 2021 to 15.33% in 2025.
- In 2025, the ratio improved to 51.63%, the highest level in five years, following occasional fluctuations.

Liquidity Ratio:

From 2021 to 2025, the Credit Deposit Ratio increased from 68.97% to 76.39%.

CONCLUSION

The CAMEL model analysis of SBI from 2021 to 2025 highlights the bank's strong performance and financial resilience.Based on secondary data, the findings show consistent strength across all key operational areas.SBI remained well-capitalized and compliant with regulatory norms, reflecting financial stability. The bank demonstrated its ability to absorb economic shocks and manage risks effectively. Operational efficiency improved through strategic cost control and strong resource utilization. Profitability rose steadily, supported by disciplined financial practices and leadership.SBI enhanced its asset quality, with lower NPAs and stronger provision coverage. Risk management systems were strengthened through proactive internal reforms. The bank showed balanced growth by maintaining liquidity while expanding credit. Its sound governance and cautious lending reinforced institutional strength.SBI not only met regulatory requirements but also delivered stakeholder value. It successfully integrated efficiency, profitability, and risk control practices. The study confirms SBI's strategic maturity as a public sector leader. It remains a vital contributor to India's financial system and economy. Overall, SBI stands out as a stable, reliable, and forward-looking institution.

Suggestions:

Enhance Digital Experience: Invest in digital infrastructure, improve mobile app features, and upgrade support systems to boost accessibility and customer satisfaction.

promote Financial Inclusion: Launch digital literacy campaigns to raise awareness about advanced services like online investments, insurance, and digital credit, especially in rural areas.

Optimize Costs and Operations: Strengthen competitiveness by reducing overheads through automation, process improvement, and branch rationalization to maintain profitability.

Strengthen Risk Management: Sustain asset quality by leveraging data analytics for early risk detection, closely monitoring high-risk sectors, and practicing prudent lending.

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□**Balance Growth and Stability:** Strategically manage liquidity and capital to support rising credit demand while ensuring compliance and financial safety.

□**Foster Innovation and Trust:** Collaborate with fintechs, embrace AI-driven solutions, and ensure transparency, data security, and responsive service to build lasting customer trust.

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