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ASSESSING RESILIENCE AND SUSTAINABILITY OF AU SMALL FINANCE BANK: A QUANTITATIVE APPROACH

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ABSTRACT
This study evaluates the financial performance and operational efficiency of AU Small Finance Bank from 2020 to 2024 using the CAMEL rating framework and the Altman Z-Score model. The CAMEL model assesses the bank's strength across five critical dimensions: Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and Liquidity. The Z-Score model is employed to predict financial distress and measure long-term viability. The findings indicate strong capitalization and profitability, with some fluctuations in liquidity and asset quality. This dual-model approach provides a comprehensive assessment and offers strategic insights for improving the bank's financial sustainability and regulatory compliance.
KEY-WORDS: *Capital Adequacy, Asset Quality, CAMEL Model, Z-Score Analysis.*

INTRODUCTION

In the rapidly evolving banking sector, evaluating the financial and operational health of institutions is critical for ensuring stability, competitiveness, and long-term sustainability. Small finance banks, like AU Small Finance Bank, play a vital role in promoting financial inclusion and catering to underserved segments. As these banks grow, assessing their financial strength, efficiency, and risk profile becomes essential. Tools such as financial ratio analysis, performance rating models, and distress prediction techniques provide valuable insights into their functioning. This study focuses on analyzing the performance of AU Small Finance Bank over a five-year period using key financial indicators. It aims to assess the bank's capital strength, asset quality, profitability, liquidity, and management efficiency. The findings of this analysis can help identify trends, strengths, and potential risks, thereby offering strategic insights for stakeholders, regulators, and investors interested in the sustainable development of small finance institutions in India.

LITERATURE REVIEW

1. **Siva and Natarajan (2011)** conducted a study using the CAMEL model to evaluate the performance of Indian private sector banks. The study concluded that parameters like capital adequacy and asset quality significantly influence overall bank stability and performance, making CAMEL a reliable supervisory tool.
2. **Prasuna (2003)** applied the CAMEL approach to compare the financial performance of top Indian banks. The findings emphasized that management efficiency and earnings quality were the most crucial factors determining bank competitiveness and long-term viability.
3. **Altman (1968)** introduced the Z-Score model as a statistical method to predict corporate bankruptcy, initially for manufacturing firms. Later adaptations have proven effective in identifying financial distress in banks, especially when tailored to include industry-specific ratios such as capital leverage and profitability.
4. **Pooja and Balwinder (2009)** employed the CAMEL model to evaluate the performance of public and private sector banks in India. The study found that private sector banks outperformed public banks in terms of capital adequacy and earnings quality.
5. **Bodla and Verma (2006)** assessed the applicability of the CAMEL framework to Indian banking supervision. Their research confirmed that CAMEL serves not only as a performance metric but also as a risk-control and regulatory tool that supports proactive intervention.
6. **Mishra and Aspal (2013)** analyzed the financial soundness of State Bank of India and its associates using the CAMEL model. Their results demonstrated that while capital adequacy and earnings were robust, concerns remained around asset quality and liquidity, highlighting the importance of balanced financial management.
7. **Gupta and Kaur (2014)** used a modified Altman Z-Score to assess the bankruptcy risk of Indian commercial banks. The study supported the model's predictive accuracy when applied with relevant financial ratios tailored to banking sector data.
8. **Biswas and Bhattacharya (2020)** focused on new-generation private sector banks in India, evaluating their financial performance using profitability, liquidity, and credit risk indicators. Their research concluded that banks like HDFC and ICICI showed superior earnings and management efficiency, reinforcing the role of sound internal controls and diversified revenue strategies. The study advocated for regular financial performance evaluations as a means to maintain trust and competitiveness in the modern banking sector.
9. **Koshti and Rathod (2023)** examined the relationship between key financial indicators and overall bank efficiency across selected Indian banks. Using a data-driven approach,

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they discovered that capital adequacy, asset quality, and earnings were significant predictors of operational success. The study recommended the continued use of multi-parameter evaluation frameworks for early detection of financial risks and performance gaps.

OBJECTIVES OF THE STUDY

1. To assess the financial strength and long-term viability of AU Small Finance Bank.
2. To evaluate the bank's operational performance using key financial indicators.
3. To recommend strategies for better fund utilization, optimal capital management, and sustaining growth in a competitive banking sector.

RESEARCH METHODOLOGY

The assessment of a bank's financial performance and stability requires a structured and multidimensional approach. For this study, two widely recognized models—the Altman Z-Score model and the CAMEL framework, have been adopted to evaluate the financial health and operational efficiency of AU Small Finance Bank over the period 2020–2024. These models provide complementary insights: while the Z-Score predicts the likelihood of financial distress, the CAMEL model evaluates internal strength and performance across critical functional areas of a bank.

Z-Score model Analysis (1995)

The Z-Score model, originally developed by Edward Altman in 1968, was designed to predict bankruptcy among manufacturing firms using a blend of financial ratios. Over time, the model has been adapted for various sectors, including banking and financial institutions, due to their distinct balance sheet structures and operational dynamics. The model has become a useful tool for identifying early signs of financial instability and serves as a preventive mechanism for stakeholders, regulators, and management.

In the context of the banking industry, where financial soundness is fundamental to public confidence and macroeconomic stability, the Z-Score model has been modified to better suit the industry's operational structure. The banking-adapted version of the model uses financial ratios that reflect short-term solvency**,** retained profitability**,** operating efficiency and leverage**.**

Formula Z- Score = 6,56X1 + 3,26X2 + 6,72X3 + 1,05X4

- **X1**: Working Capital to Total Assets
  (Measures short term solvency)
- **X2**: Retained Earnings / Total Assets
  (Shows long-term profitability)
- **X3**: EBIT / Total Assets
  (Indicator of operational profitability)
- **X4**: Market Value of Equity / Book Value of Total Debt
  (Represents leverage and solvency)

The **Z-score model** classifies a bank's financial health into three zones:

- **Z > 2.6 — Safe Zone**: Indicates strong financial stability, with adequate capital, consistent profitability, and solid operational efficiency.
- **1.1 ≤ Z ≤ 2.6 — Gray Zone**: Suggests moderate risk of financial distress; the institution may face challenges under adverse conditions and requires closer monitoring.
- **Z < 1.1 — Distress Zone**: Reflects a high risk of financial distress or insolvency, often due to issues related to capital adequacy, profitability, or liquidity.

In this study, Z-Scores for AU Small Finance Bank are computed annually for five consecutive financial years using the above formula. The results offer insights into the bank's solvency trends and distress risk profile over time.

Table 1: CAMEL Component Rating Scale

Parameter	Excellent (1)	Good (2)	Fair (3)	Weak (4)	Poor (5)
Capital Adequacy	> 20%	18–20%	15–18%	12–15%	< 12%
Assets Quality	< 1.5	1.5–2.0	2.0–3.5	3.5–5.0	> 5.0
Liquidity	> 12%	10–12%	8–10%	5–8%	< 5%
Mgmt Efficiency (₹ in lakh)	> ₹10	₹8–₹10	₹5–₹8	₹2–₹5	< ₹2
Earning Quality	≥ 0.20	0.15–0.20	0.10–0.15	0.05–0.10	< 0.05

In 1995, the Reserve Bank of India (RBI) set up a working group led by Shri S. Padmanabhan to strengthen and modernize the country's banking supervision system. The group's key recommendation was to adopt a more structured and internationally comparable framework for evaluating banks. Acting on this, the RBI introduced a refined supervisory mechanism from the inspection cycle starting in July 1998. This mechanism was aligned with the internationally recognized CAMELS framework, widely used by banking regulators across the globe. The CAMELS model evaluates banks across six dimensions, Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, Liquidity, and Sensitivity to Market Risk, though in India, the first five indicators are primarily emphasized.

Under this system, banks are assessed and rated on a five-point scale, where 1 denotes the strongest performance and 5 reflects critical deficiencies**.** This scale helps in gauging the financial health, risk management capabilities, internal controls, and overall operational stability of both domestic and foreign banks operating in India.

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The components of the CAMEL model are explained as follows: **Capital Adequacy** refers to a bank's capacity to absorb potential financial losses and maintain solvency. Measured through risk-weighted capital ratios, it reflects the institution's resilience. A top rating (1) indicates strong capitalization, while a bottom rating (5) suggests dangerously low capital reserves, demanding immediate remedial action.

Asset Quality primarily hinges on the level of Non-Performing Assets (NPAs) in relation to total loans advanced. It serves as a barometer of credit risk and the effectiveness of lending practices. A lower NPA ratio signifies prudent credit management, while a higher ratio indicates potential threats to financial sustainability.

Management Efficiency is gauged by productivity indicators such as Net Profit per Employee. Though partly subjective, this metric provides insight into operational control, employee performance, and decision-making effectiveness. Higher ratings reflect streamlined management; lower ratings imply inefficiencies.

Earnings Quality, assessed via Return on Assets (ROA), measures the bank's profitability relative to its total assets. This indicates how well the institution utilizes its assets to generate income. A higher ROA reflects financial strength and sustainability.

Liquidity is analyzed through the Cash-to-Deposit ratio, which assesses the bank's short-term financial flexibility. Strong liquidity ensures timely withdrawals and promotes depositor confidence, while weak liquidity may indicate potential distress.

Together, these five CAMEL indicators provide a consistent and comprehensive framework to evaluate, compare, and improve the financial and operational soundness of banks.

DATA ANALYSIS AND INTERPRETATION

Table 2: Evaluation of CAMEL Indicators

	Capital Adequacy	Assets Quality	Liquidity Position	Management Efficiency	Earning Quality
2020	21.99	1.7	12.94	4 lakh	0.160
2021	23.37	4.3	5.43	5 lakh	0.227
2022	20.99	2	10.50	4 lakh	0.164
2023	23.59	1.7	13.88	5 lakh	0.158
2024	20.05	1.7	11.79	5 lakh	0.140

(Source: Annual Report of AU Small Finance Bank)

1. Capital Adequacy

AU Small Finance Bank maintained a strong capital adequacy position throughout the period 2020 to 2024. The ratio consistently remained above 20%, indicating excellent financial resilience and the capacity to absorb potential losses. Although there was a slight dip in 2024 to 20.05%, it still falls within the 'Excellent' category, reflecting the bank's solid capital base and effective risk-weighted capital management.

2. Asset Quality

The bank's asset quality showed noticeable variation across the years. In 2021, the asset quality weakened, with NPAs rising to 4.3%, placing it in the 'Weak' category. However, the bank made significant improvements in the following years, with the NPA ratio stabilizing at 1.7% from 2022 to 2024. This decline moved the bank into the 'Good' rating bracket, reflecting better credit monitoring and recovery practices.

3. Liquidity Position

The liquidity position of the bank experienced fluctuations over the five-year period. In 2021, the ratio dropped to 5.43%, indicating a 'Weak' liquidity level. However, it improved substantially in subsequent years, reaching a high of 13.88% in 2023, categorizing it as 'Excellent'. In 2024, liquidity remained strong at 11.79%, suggesting the bank effectively managed its short-term obligations and depositor needs.

4. Management Efficiency

Management efficiency remained stable throughout the review period. The ratio was at 4 lakh in 2020 and 2022, qualifying as 'Good', while in other years it stood at 5 lakh rated as 'Excellent'. This consistency indicates that the bank maintained a reliable level of operational productivity and cost efficiency in managing its human resources and overall operations.

5. Earning Quality

The bank's earning quality, measured by Return on Assets (ROA), peaked in 2021 at 0.227, classifying it as 'Excellent'. However, a gradual decline followed, with the ratio falling to 0.140 in 2024, placing it in the 'Fair' category. This trend suggests that while the bank remained profitable, its efficiency in converting assets into earnings declined slightly in the later years.

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Table 3: Year-wise CAMEL Ratings

Year	Capital Adequacy	Assets Quality	Liquidity Position	Management Efficiency	Earning Quality	Avg Score	Interpretation
2020	1	2	1	5	2	**1.4**	Excellent
2021	1	4	4	3	1	**2.4**	Good
2022	1	3	2	5	2	**1.8**	Very Good
2023	1	2	1	3	2	**1.6**	Very Good
2024	1	2	2	3	3	**2.0**	Good

(Source: Author's Calculation)

The CAMEL rating analysis for AU Small Finance Bank from 2020 to 2024 reflects a generally strong and stable performance with some variations across components. Capital Adequacy remained consistently strong, rated '1' (Excellent) throughout the five years, indicating robust capital strength. Asset Quality saw a temporary dip in 2021, rated '4' due to higher NPAs, but improved to '2' in the later years. Liquidity was weakest in 2021, scoring '4', but rebounded in 2023 with a rating of '1'. Management Efficiency was the most inconsistent parameter, rated '5' in 2020 and 2022, suggesting low productivity in those years, though it improved slightly afterward. Earning Quality peaked in 2021 (rated '1') but declined to '3' in 2024. The average CAMEL score ranged from 1.4 to 2.4, with the best performance in 2020 ("Excellent") and strong performance in 2022 and 2023 ("Very Good"). Overall, the bank demonstrated commendable financial soundness with areas for improvement in efficiency and earnings.

Table 4: Calculation Results with Altman Z-Score Model

Year	X1	X2	X3	X4	Z - Score	Category
2019-20	7.237	1.460	1.076	0.122	9.894	Safe
2020-21	8.187	1.700	1.525	0.145	11.557	Safe
2021-22	9.445	1.596	1.099	0.128	12.268	Safe
2022-23	12.046	1.549	1.064	0.145	14.804	Safe
2023-24	13.397	1.541	0.942	0.136	16.016	Safe

(Source: Author's Calculation)

The Altman Z-Score analysis of AU Small Finance Bank over the five-year period (2019–20 to 2023–24) indicates a consistently strong financial position. Each year's Z-Score far exceeds the threshold of 2.6, placing the bank firmly in the "Safe" category throughout the period. The scores rose steadily from 9.894 in 2019–20 to a peak of 16.016 in 2023–24, reflecting continuous improvement in the bank's financial health. Key contributing factors include rising working capital relative to total assets (X1), stable retained earnings (X2), and consistently positive EBIT performance (X3). Although there was a slight decline in operational profitability in 2023–24, it was offset by gains in other components. The market value to debt ratio (X4) remained relatively stable, supporting strong solvency. Overall, the Z-Score results confirm the bank's low risk of financial distress and demonstrate high levels of financial strength, profitability, and operational stability across all five years.

SUGGESTIONS

Improve Management Efficiency: Enhance productivity through better workforce utilization, digital automation, and operational training.

Boost Earnings Quality: Focus on increasing Return on Assets by diversifying income sources and improving asset utilization.

Maintain Strong Liquidity: Regularly monitor the cash-to-deposit ratio to ensure sufficient short-term financial flexibility and depositor confidence.

Strengthen Asset Quality: Continue improving credit appraisal systems, early NPA detection, and recovery mechanisms to maintain low NPA levels.

Sustain Capital Adequacy: Keep capital levels above regulatory requirements through strategic capital planning and retained earnings.

Use Financial Models for Monitoring: Regular application of CAMEL and Z-Score models can help detect early signs of financial distress.

CONCLUSION

The comprehensive assessment of AU Small Finance Bank's financial performance from 2020 to 2024, utilizing both the CAMEL framework and the Altman Z-Score model, demonstrates a robust overall financial soundness and stability. The bank consistently exhibited excellent capital adequacy throughout the period and remained firmly within the "Safe" zone according to the Z-Score model, signifying strong financial health and a low risk of bankruptcy.

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While asset quality and liquidity experienced some fluctuations, notable improvements were observed in recent years. Management efficiency and earning quality showed moderate consistency, indicating specific areas where further enhancement can be pursued. Despite a competitive banking environment, AU Small Finance Bank has demonstrated commendable resilience. Sustained long-term profitability and optimized operational efficiency will require focused strategic efforts.

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