

A Comparative Study On Financial Performance Of Sbi And Hdfc Bank Through Camel Approach

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Abstract- This study undertakes a comparative analysis of the financial performance of the State Bank of India (SBI) and HDFC Bank, representing the public and private banking sectors in India, respectively. Using the CAMEL framework—Capital Adequacy, Asset Quality, Management Efficiency, Earnings, and Liquidity—supported by ratio analysis, ANOVA, and arithmetic mean, the research evaluates the performance of both banks over the period 2021–2025. The findings reveal that HDFC Bank demonstrates superior profitability, asset quality, and operational efficiency, while SBI reflects greater financial inclusion, capital strength, and market outreach, albeit constrained by higher non-performing assets and cost inefficiencies. Based on the interpretations, targeted suggestions and recommendations are proposed for SBI to enhance efficiency, strengthen risk management, improve digital adoption, and diversify income streams. The study contributes to the academic literature on banking performance by offering insights into the comparative dynamics of public and private sector banks, while also serving as a valuable reference for investors, policymakers, and financial institutions in formulating performance-improvement strategies.

Keywords- CAMEL Model, Financial Performance, SBI, HDFC Bank, Asset Quality, Profitability, Risk Management

I. INTRODUCTION

The banking sector is the lifeblood of India's economy, serving as a catalyst for financial intermediation, economic growth, and monetary stability. In a nation characterized by diverse socio-economic needs, India's banking industry is a vibrant ecosystem comprising public sector banks, private sector banks, cooperative banks, and emerging fintech entities. Among these, the State Bank of India (SBI) and HDFC Bank stand as towering pillars, representing the contrasting yet complementary paradigms of public and private sector banking. SBI, a public sector giant, embodies the ethos of financial inclusion and nation-building, while HDFC Bank, a private sector leader, epitomizes innovation, efficiency, and customercentricity. This study undertakes a comparative analysis of the financial performance of SBI and HDFC Bank, examining their profitability, asset quality, operational efficiency, and market

positioning. This introduction provides an exhaustive overview of both banks, delving into their historical evolution, organizational frameworks, service offerings, market significance, and challenges, setting a robust stage for a detailed financial comparison.

II. PROBLEM STATEMENT

The banking sector is the backbone of India's economy, driving savings, credit, and stability. In this competitive space, financial performance ensures sustainability and investor trust. SBI, the largest public bank, benefits from size, government support, and rural reach but faces high NPAs, weaker returns, and lower efficiency. HDFC Bank, the largest private bank, excels with strong asset quality, profitability, and efficiency but relies heavily on urban markets. This contrast reveals a research gap. Using the CAMEL framework—Capital Adequacy, Asset Quality, Management Efficiency, Earnings, and Liquidity—offers an objective comparison, providing insights into public versus private banking performance in India.

III. OBJECTIVES OF THE STUDY

1. To study on comparative analysis of the financial performance of SBI & HDFC bank
2. To provide the suitable suggestions
3. and recommendations for enhancing the financial performance and sustainability of SBI Bank

IV. SCOPE OF THE STUDY

- To help banking institutions benchmark their operations and improve performance strategies.
- To support investors and stakeholders in making informed decisions based on comparative insights.
- To provide policy makers and regulators with inputs on banking trends, aiding in the formulation of effective policies.

V. LIMITATIONS OF THE STUDY

- The study is based only on secondary data collected from annual reports and financial websites; therefore, the accuracy depends on the reliability of these sources.
- The analysis covers only a limited period (2021–2025), which may not fully capture long-term performance trends.
- The study focuses on two banks (SBI and HDFC), so findings may not be generalized to the entire banking sector.
- The statistical tool used (ANOVA) identifies differences but does not explain the underlying causes of performance variations.
- The study does not account for the impact of recent mergers, acquisitions, or major digital banking initiatives beyond the financial ratios analyzed.

VI. RESEARCH DESIGN

The following are the research design used by the researcher

Methodology and Data Collections

The present study is based on secondary data that has been collected from annual reports of the respective banks, Indian Banks Association publications, magazines, journals, documents and other published information.

Period of the Study

The present study is analytical in nature and it uses the latest available secondary data published by RBI for the 5 years starting from 2021 to 2025

Tools of Analysis

The ANOVA, Ratio Analysis, Arithmetic mean and Average are used to analyze financial performance of private c sector banks in India

TOTAL CAPITAL ADEQUACY RATIO:

To assess the bank's overall capital health and compliance with regulatory capital requirements

$$\text{Total Capital Adequacy Ratio} = \frac{[(\text{Tier 1 Capital} + \text{Tier 2 Capital}) \div \text{Risk-Weighted Assets}] \times 100$$

TABLESHOWING YEAR WISE CAPITAL ADEQUACY RATIO OF SBI AND HDFC BANK

Year	Total Capital Adequacy of SBI	Total Capital Adequacy OF HDFC
Mar '21	13.74	18.79
Mar '22	13.85	18.90
Mar '23	14.68	19.26
Mar '24	14.26	18.80
Mar '25	14.25	19.55

SUMMARY :

Groups	Count	Sum	Average	Variance
HDFC	5	95.3	19.06	0.11155
SBI	5	70.8	14.16	0.14135

ANNOVA :

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	60.025	1	60.025	474.693548	2.07698E-08	5.317655072
Within Groups	1.016	8	0.12645			

HYPOTHESIS:

H₀ : All the private banks under study have on a same average of capital adequacy ratio

H₁ : All the private banks under study have on a difference average of capital adequacy ratio

INTERPRETATION :

The one-way ANOVA test was conducted to examine the difference in Capital Adequacy Ratio (CAR) between HDFC Bank and SBI over the five-year period from 2021 to 2025. The results show that HDFC's CAR increased slightly from 18.79% in 2021 to 19.55% in 2025, while SBI's CAR moved from 13.74% in 2021 to 14.25% in 2025. The five-year average CAR for HDFC was 19.06%, whereas SBI averaged 14.16%. The calculated F-value (474.69) is far greater than the critical F-value (5.32), and the p-value (2.07 × 10⁻⁸) is well below the 0.05 significance level. This confirms that the difference in mean CAR between HDFC and SBI is

statistically significant and cannot be attributed to random variation.

INFERENCE:

Since the p-value is less than 0.05, the null hypothesis that there is no significant difference in CAR between HDFC and SBI is rejected, and the alternative hypothesis is accepted. It is therefore inferred that HDFC maintains a significantly higher Capital Adequacy Ratio compared to SBI over the five-year period, indicating stronger capitalization and a better capacity to absorb potential risks.

Net NON PERFORMING ASSESTS :

To evaluate the actual bad loan burden after provisions, showing the net credit risk faced by the bank.

FORMULA :

$$\text{Net NPA \%} = (\text{Net NPAs} \div \text{Net Advances}) \times 100$$

TABLESHOWING YEAR WISE CAPITAL ADEQUACY RATIO OF SBI AND HDFC BANK

Year	Net NPA (%) (SBI)	Net NPA (%) (HDFC)
Mar '21	1.50	0.40
Mar '22	1.02	0.32
Mar '23	0.67	0.27
Mar '24	0.57	0.33
Mar '25	0.47	0.43

SUMMARY:

Groups	Count	Sum	Average	Variance
HDFC	5	1.75	0.35	0.00415
SBI	5	4.23	0.846	0.17663

ANNOVA:

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	0.61504	1	0.61504	6.804293	0.031203	5.317655
Within Groups	0.72312	8	0.09039			
Total	1.33816	9				

HYPOTHESIS:

H0 : The banks under study have on a same average of net non- performing assets ratio.

H1 : The banks under study have on a difference

INTERPRETATIONS :

The one-way ANOVA test was conducted to examine whether there is a significant difference in net non-performing assets (Net NPA) between SBI and HDFC during 2021 to 2025. The results show that SBI’s Net NPA improved significantly, declining from 1.50% in 2021 to 0.47% in 2025, representing a reduction of 68.7%, with a five-year average of 0.846%. In contrast, HDFC’s Net NPA remained low and relatively stable, moving from 0.40% in 2021 to 0.43% in 2025, reflecting a slight increase of 7.5%, with a five-year average of 0.35%. The ANOVA results indicate that the calculated F-value (6.80) is greater than the critical F-value (5.32), and the p-value (0.0312) is below the 0.05 significance level, confirming that the difference in Net NPA between SBI and HDFC is statistically significant

INFERENCE:

Since the p-value is less than 0.05, the null hypothesis that there is no significant difference between the mean Net NPA of SBI and HDFC is rejected, and the alternative hypothesis is accepted. It can therefore be inferred that there is a statistically significant difference in asset quality, with HDFC maintaining a lower and more stable Net NPA, while SBI has shown remarkable improvement over the five-year period.

COST TO INCOME:

To assess the bank’s operational efficiency by comparing its operating costs with its income.

FORMULA:

$$\text{Cost to Income Ratio} = (\text{Operating Expenses} \div \text{Operating Income}) \times 100$$

TABLESHOWING YEAR WISE CAPITAL ADEQUACY RATIO OF SBI AND HDFC BANK

Year	Cost-to-Income Ratio (SBI)	Cost-to-Income Ratio (HDFC)

Mar '21	53.59	36.32
Mar '22	57.91	36.88
Mar '23	53.36	40.36
Mar '24	59.01	40.17
Mar '25	51.63	40.50

SUMMARY :

Groups	Count	Sum	Average	Variance
SBI	5	280.4	56.08	11.4972
HDFC	5	194.23	38.846	4.25668

ANNOVA:

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	742.52689	1	742.52689	94.26590656	1.05769E-05	5.317655072
Within Groups	63.01552	8	7.87694			
total	805.5424	9				

HYPOTHESIS:

H0 : The banks under study have on a same average of cost to income

H1 : The banks under study have on a difference of cost to income

INTERPRETATIONS :

The one-way ANOVA test was conducted to evaluate whether there is a significant difference in the cost to income (C/I) ratio between SBI and HDFC during the period 2021 to 2025. The results show that SBI’s C/I ratio declined from 58.59% in 2021 to 51.63% in 2025, reflecting an improvement of 11.9%, with a five-year average of 56.08%. In contrast, HDFC’s C/I ratio increased slightly from 36.32% in 2021 to 40.50% in 2025, representing a growth of 11.5%, with a lower five-year average of 38.85%. The ANOVA results indicate that the calculated F-value (94.27) is much higher than the critical F-value (5.32), and the p-value (1.06×10^{-5}) is far below the 0.05 significance level. This confirms that the

difference in cost to income ratios between SBI and HDFC is statistically significant, highlighting distinct cost efficiency structures between the two banks.

INFERENCE :

Since the p-value is less than 0.05, the null hypothesis that there is no significant difference between the mean cost to income ratios of SBI and HDFC is rejected, and the alternative hypothesis is accepted. It can therefore be inferred that there exists a statistically significant difference in cost efficiency, with HDFC maintaining lower cost to income ratios, indicating better operational efficiency, while SBI has shown improvement over the period but remains relatively higher.

RETURN ON ASSETS:

To measure the efficiency in using total assets to generate net profit.

FORMULA :

$$\text{Return on Assets} = (\text{Net Profit} \div \text{Average Total Assets}) \times 100$$

TABLESHOWING YEAR WISE CAPITAL ADEQUACY RATIO OF SBI AND HDFC BANK

Year	Return on Assets % (SBI)	Return on Assets % (HDFC)
Mar '21	0.45	1.78
Mar '22	0.63	1.78
Mar '23	0.91	1.78
Mar '24	0.98	1.68
Mar '25	1.06	1.72

SUMMARY:

Groups	Count	Sum	Average	Variance
SBI	5	4.03	0.806	0.06583
HDFC	5	8.94	1.788	0.00732

ANNOVA:

Source of Variation	SS	Df	MS	F	P-value	F crit

Between Groups	2.41081	1	2.41081	65.91414901	3.92676E-05	5.317655072
Within Groups	0.2926	8	0.036575			
total	2.703	9				

Credit Deposit Ratio (%) = TOTAL ADVANCES / TOTAL DEPOSITS *100

4.1 TABLESHOWING YEAR WISE CAPITAL ADEQUACY RATIO OF SBI AND HDFC BANK

Year	Provision Coverage Ratio (SBI)	Provision Coverage Ratio (HDFC)
Mar '21	68.97	85.66
Mar '22	67.03	86.43
Mar '23	70.01	86.25
Mar '24	73.91	95.83
Mar '25	76.39	100

HYPOTHESIS:

Ho: There is no significant difference in ROA between SBI and HDFC.

H1: There is a significant difference in ROA between SBI and HDFC.

INTERPRETATIONS :

The one-way ANOVA test was conducted to analyze whether there is a significant difference in the return on assets (ROA) of SBI and HDFC from 2021 to 2025. The results show that SBI's ROA improved substantially from 0.45% in 2021 to 1.06% in 2025, marking a growth of 135.6%, with a five-year average of 0.81%. In contrast, HDFC's ROA remained relatively stable, moving from 1.78% in 2021 to 1.92% in 2025, representing a modest growth of 7.9%, with a higher average of 1.79%. The ANOVA results reveal that the calculated F-value (65.91) is significantly higher than the critical F-value (5.32), and the p-value (3.9E-05) is far below the 0.05 significance level. This confirms that the difference in ROA between SBI and HDFC is statistically significant, showing that the two banks follow clearly different performance levels in terms of asset returns

INFERENCE:

Since the p-value is less than 0.05, the null hypothesis that there is no significant difference between the mean ROA of SBI and HDFC is rejected, and the alternative hypothesis is accepted. Therefore, it can be inferred that there is a statistically significant difference in ROA performance between the two banks, with HDFC maintaining consistently higher ROA, while SBI shows strong improvement in growth over the five-year period.

CREDIT DEPOSIT RATIO (CDR):

To assess the efficiency of the bank in deploying its deposits as loans, reflecting lending activity and utilization of funds.

FORMULA:

SUMMARY :

Groups	Count	Sum	Average	Variance
SBI	5	356.36	71.272	14.40442
HDFC	5	454.17	90.834	44.03853

ANNOVA:

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	956.67961	1	956.67961	32.73892266	0.000443119	5.317655072
Within Groups	233.7718	8	29.221475			
Total	1190.45141	9				

HYPOTHESIS:

Ho: There is no significant difference in CDR between SBI and HDFC.

H1: There is a significant difference in CDR between SBI and HDFC.

INTERPRETATIONS:

The one-way ANOVA test was conducted to analyze whether there is a significant difference in credit deposit ratio

(CDR) between SBI and HDFC during the period 2021 to 2025. The results show that SBI's CDR increased from 68.97% in 2021 to 76.39% in 2025, reflecting a growth of 10.8%, with a five-year average of 71.27%. In comparison, HDFC's CDR rose from 85.66% in 2021 to 100.00% in 2025, showing a higher growth of 16.7%, with a five-year average of 90.83%. The ANOVA results indicate that the calculated F-value (32.74) is much higher than the critical F-value (5.32), and the p-value (0.00044) is far below the 0.05 significance level. This confirms that the difference in credit deposit ratios between SBI and HDFC is statistically significant, highlighting distinct lending to deposit management strategies between the two banks.

INFERENCE :

Since the p-value is less than 0.05, the null hypothesis that there is no significant difference between the mean credit deposit ratios of SBI and HDFC is rejected, and the alternative hypothesis is accepted. It can therefore be inferred that there is a statistically significant difference in lending efficiency, with HDFC maintaining higher credit deployment relative to deposits, while SBI shows moderate growth over the five-year period.

VII. FINDINGS

1. HDFC's CAR increased slightly from 18.79% in 2021 to 19.55% in 2025, while SBI's CAR moved from 13.74% in 2021 to 14.25% in 2025. The five-year average CAR for HDFC was 19.06%, whereas SBI averaged 14.16%
2. that SBI's Net NPA improved significantly, declining from 1.50% in 2021 to 0.47% in 2025, representing a reduction of 68.7%, with a five-year average of 0.846%. In contrast, HDFC's Net NPA remained low and relatively stable, moving from 0.40% in 2021 to 0.43% in 2025, reflecting a slight increase of 7.5%, with a five-year average of 0.35%.
3. SBI's ROA improved substantially from 0.45% in 2021 to 1.06% in 2025, marking a growth of 135.6%, with a five-year average of 0.81%. In contrast, HDFC's ROA remained relatively stable, moving from 1.78% in 2021 to 1.92% in 2025, representing a modest growth of 7.9%, with a higher average of 1.79%.
4. SBI's C/I ratio declined from 58.59% in 2021 to 51.63% in 2025, reflecting an improvement of 11.9%, with a five-year average of 56.08%. In contrast, HDFC's C/I ratio increased slightly from 36.32% in 2021 to 40.50% in 2025, representing a growth of 11.5%, with a lower five-year average of 38.85%
5. credit deposit ratio (CDR) between SBI and HDFC during the period 2021 to 2025. The results show that SBI's

CDR increased from 68.97% in 2021 to 76.39% in 2025, reflecting a growth of 10.8%, with a five-year average of 71.27%. In comparison, HDFC's CDR rose from 85.66% in 2021 to 100.00% in 2025, showing a higher growth of 16.7%, with a five year average of 90.83%

Recommendations for SBI

Based on the interpretations, SBI should:

- **Credit Deposit Ratio:** Strategically increase loan disbursements in productive sectors while ensuring prudent risk assessment, to improve lending efficiency closer to HDFC's level.
- **Return on Assets:** Focus on optimizing asset utilization by diversifying income sources, strengthening fee-based income, and deploying funds into higher-yielding but safe avenues.
- **Cost-to-Income Ratio:** Reduce operational costs through automation, branch rationalization, and expanding digital banking services, while improving productivity of existing staff.
- **Capital Adequacy Ratio:** Strengthen its capital position by retaining higher earnings, raising fresh capital if required, and efficiently managing risk-weighted assets.
- **Net NPA:** Sustain the positive trend of declining NPAs by tightening credit monitoring, strengthening recovery mechanisms, and improving early warning systems for stressed assets.

Overall, SBI should balance its traditional strengths in size and rural reach with sharper efficiency, stronger capital buffers, and sustained asset quality improvements to enhance competitiveness against private sector peers.

VIII. CONCLUSION

The comparative analysis of HDFC Bank and SBI from 2021 to 2025 reveals distinct strengths and strategic positioning for each institution. HDFC Bank consistently demonstrates stronger capital adequacy, profitability, and asset quality, indicating its long-standing stability and efficient operational structure. Its high CAR, low and stable Net NPA, and superior ROA underscore a conservative yet profitable banking model, despite a gradual rise in cost-to-income ratio and credit-deposit ratio in recent years.

On the other hand, SBI shows significant improvements across multiple areas, particularly in asset quality, profitability, operational efficiency, and credit deployment. The sharp decline in Net NPA, substantial rise in

ROA, and reduction in the cost-to-income ratio reflect effective reforms, better credit recovery, and stronger internal efficiency. Although SBI's capital adequacy and profitability remain below HDFC's levels, the progressive upward trend highlights strengthening fundamentals and improved financial resilience.

Overall, HDFC Bank maintains leadership in financial strength and efficiency, while SBI exhibits strong momentum through continuous improvements. HDFC reflects consistent stability, whereas SBI reflects transformation and recovery. Together, the trends suggest that while HDFC remains the more stable and profitable bank, SBI is rapidly narrowing the performance gap through sustained operational and credit-quality enhancements.

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