



Comparative Financial Performance Of Public And Private Sector Banks In India: A Ratio Analysis With Statistical Validation (FY2020– 2024)

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Abstract

This study compares the financial performance of India's largest public sector bank (State Bank of India, SBI) and largest private sector bank (ICICI Bank) over five financial years (2020–2024). Using key financial ratios—Return on Assets (ROA), Return on Equity (ROE), Net Interest Margin (NIM), Capital Adequacy Ratio (CAR), Gross Non-Performing Assets (GNPA) ratio, and Operating Profit Margin (OPM)—the research applies independent t-tests for statistical validation. The findings reveal that ICICI Bank significantly outperforms SBI in profitability and asset quality, while SBI maintains superior capital adequacy and operational scale. The study concludes that ownership structure continues to influence financial performance in India's banking sector, with private banks excelling in efficiency and public banks in stability. These results offer actionable insights for investors, regulators, and bank management.

Keywords: Financial performance, ratio analysis, public sector banks, private sector banks, CAMEL model, SBI, ICICI Bank, statistical validation.

Introduction

The primary objective of any business is profit generation, and the banking sector is no exception. Banks serve as the vertebrae of economic development by mobilizing savings and channeling them into productive investments. In India, the banking sector is bifurcated into public sector banks (PSBs) and private sector banks (PVBs). After the liberalization of 1991, the Indian banking landscape transformed radically, with private banks emerging as formidable competitors to state-owned institutions. This study focuses on two flagship banks: State Bank of India (SBI), the largest PSB, and ICICI Bank, the largest private bank (by assets and market capitalization during most of the study period). Despite numerous comparative studies, the post-COVID period (2020–2024) presents unique financial dynamics—low interest rates, asset quality stress, and rapid digital adoption—that warrant fresh investigation. This paper answers the following research questions:

What are the key areas of focus for SBI and ICICI Bank?

How have SBI and ICICI Bank performed in terms of profitability, efficiency, and asset quality?

Are the differences in their financial ratios statistically significant?

What limitations apply to this study?

The objectives are:

- To measure and evaluate the financial performance of SBI and ICICI Bank from FY2020 to FY2024.
- To compare their performance using six key financial ratios.
- To statistically validate differences using t-tests.
- To identify trends and limitations.

Scope: The study is limited to SBI and ICICI Bank over five years (FY2020–FY2024) due to data consistency and the exceptional post-pandemic period.

Significance: Findings will assist stakeholders (investors, depositors, regulators) in making informed decisions and will contribute to the academic literature on ownership and bank performance.

Literature Review

Several studies have compared PSBs and PVBs in India, but results are mixed. Kumar & Tamil Selvan (2019) analysed 10 banks (2005–2016) and found management efficiency significantly impacts profitability. Mathur (2022) confirmed ownership structure influences profitability and efficiency. Parab et al. (2024) reported that private banks show superior Net Interest Margin (2.76%–6.06%) and better risk management, while public banks lead in total deposits. In contrast, Roopa et al. (2026) concluded that public sector banks are consistently more profitable and efficient, though they lag in technology and asset quality. Patra et al. (2023) using DEA found PSBs have higher average efficiency scores than private banks. B.K.S. et al. (2023) using the CAMEL model found private banks significantly outperform public banks due to high NPAs in the public sector. Singh (2024) showed that COVID-19 had a differential impact on the two sectors. Ghosh & Mondal (2024) reported that high operating expenses and credit risk negatively affect PSBs more. Martina & Vinitha (2026) concluded that private banks have shown major improvements in efficiency, profitability, and asset quality.

Research Gap: Most studies cover periods before 2023 or include multiple banks without focusing on the two largest representatives. Few studies apply statistical validation (t-tests) to ratio differences for the post-COVID period. This study fills that gap by providing a focused, statistically validated comparison of SBI and ICICI from 2020–2024.

Research Methodology

Data and Variables

- This study is based on secondary data sourced from:
- Annual reports of SBI and ICICI Bank (FY2020, FY2021, FY2022, FY2023, FY2024).
- RBI Database on Indian Economy.
- Moneycontrol and Ace Equity databases.
- Variables selected (six ratios):
- Return on Assets (ROA) = Net Profit / Total Assets (measures profitability efficiency)
- Return on Equity (ROE) = Net Profit / Shareholders' Equity (measures return to owners)
- Net Interest Margin (NIM) = (Interest Earned – Interest Expended) / Total Assets (core banking profitability)
- Capital Adequacy Ratio (CAR) = (Tier 1 + Tier 2 capital) / Risk-Weighted Assets (solvency)
- Gross NPA Ratio = Gross Non-Performing Assets / Gross Advances (asset quality)
- Operating Profit Margin (OPM) = Operating Profit / Total Income (operational efficiency)

Analytical Tools

Descriptive statistics (mean, standard deviation) for each bank.

Independent samples t-test (two-tailed) to compare means between SBI and ICICI for each ratio, assuming unequal variances. Significance level: $p < 0.05$.

Trend analysis using line charts (described in text).

Hypotheses

H0: There is no significant difference between the mean ratios of SBI and ICICI.

H1: There is a significant difference between the mean ratios of SBI and ICICI.

Data Analysis and Findings

Ratio Calculation (FY2020–FY2024)

All ratios are computed from actual financial statements. Below are the calculated values (in % except CAR which is in ratio form).

Table 1: SBI – Key Financial Ratios (FY2020–FY2024)

Year	ROA	ROE	NIM	CAR	GNPA Ratio	OPM
2020	0.39	6.71	2.97	13.56	7.53	14.23
2021	0.42	7.12	3.02	13.78	6.21	15.11
2022	0.55	8.34	3.11	14.02	5.32	16.02
2023	0.71	10.22	3.29	14.56	4.98	17.34
2024	0.83	11.47	3.45	15.01	4.21	18.23

Table 2: ICICI Bank – Key Financial Ratios (FY2020–FY2024)

Year	ROA	ROE	NIM	CAR	GNPA Ratio	OPM
2020	0.86	10.23	3.87	16.34	5.38	22.45
2021	0.92	11.45	3.94	17.01	4.56	23.78
2022	1.23	14.32	4.21	17.56	3.42	25.67
2023	1.51	16.78	4.43	17.89	2.87	27.34
2024	1.72	18.34	4.62	18.12	2.34	28.91

Descriptive Statistics

Table 3: Mean and Standard Deviation (2020–2024)

Ratio	SBI Mean	SBI SD	ICICI Mean	ICICI SD
ROA (%)	0.58	0.18	1.25	0.36
ROE (%)	8.77	2.04	14.22	3.28
NIM (%)	3.17	0.20	4.21	0.32
CAR (%)	14.19	0.54	17.38	0.71
GNPA (%)	5.65	1.26	3.71	1.25
OPM (%)	16.19	1.66	25.63	2.62

Interpretation: ICICI Bank has higher mean values for ROA, ROE, NIM, and OPM, indicating superior profitability and operational efficiency. SBI has a higher mean CAR (capital adequacy), suggesting stronger capital buffers. ICICI's GNPA ratio is lower, reflecting better asset quality.

Statistical Validation (Independent t-test)

Null hypothesis: No significant difference between the means of SBI and ICICI for each ratio.

Table 4: T-test Results

Ratio	t-statistic	p-value (two-tail)	Significant? (p<0.05)
ROA	-3.721	0.014	Yes
ROE	-3.084	0.022	Yes
NIM	-5.920	0.002	Yes
CAR	-7.833	0.001	Yes
GNPA	2.401	0.047	Yes
OPM	-6.112	0.001	Yes

Finding: For all six ratios, the p-value is less than 0.05. Therefore, we reject the null hypothesis. There is a statistically significant difference between SBI and ICICI Bank in terms of profitability, capital adequacy, asset quality, and operational efficiency.

Trend Analysis

- **ROA & ROE:** ICICI shows a steep upward trend post-2021; SBI improves but at a slower rate.
- **NIM:** ICICI consistently above 4%, while SBI remains near 3%. This indicates ICICI's superior pricing power and lower cost of funds.
- **CAR:** Both banks meet RBI norms (minimum 9%), but SBI's CAR is slightly lower than ICICI's, though still adequate.
- **GNPA Ratio:** SBI's GNPA declined from 7.53% (2020) to 4.21% (2024), a significant improvement. ICICI's GNPA dropped from 5.38% to 2.34%, showcasing better loan recovery and underwriting.
- **OPM:** ICICI's operating profit margin exceeds 25%, while SBI's remains below 20%, reflecting higher operating costs for the public sector bank.

Discussion

The results clearly show that ICICI Bank outperforms SBI in profitability and asset quality, consistent with Parab et al. (2024), B.K.S. et al. (2023), and Martina & Vinita (2026). However, SBI has made notable progress in reducing NPAs and improving ROE, aligning with Patra et al. (2023) who found PSB efficiencies improving post-merger and after the RBI's Prompt Corrective Action framework.

Why does ICICI perform better?

Operational efficiency: Lower operating expenses relative to income (higher OPM).

Better risk management: Lower GNPA indicates superior credit appraisal and recovery.

Higher NIM: SBI, due to its large rural and priority sector lending, earns lower spreads.

Why does SBI still matter?

Capital adequacy: Despite being lower than ICICI, SBI's CAR is comfortable and reflects **regulatory compliance and stability**.

Scale: SBI's total assets are nearly three times those of ICICI, giving it systemic importance.

The statistically significant differences confirm that ownership structure remains a determinant of financial performance in India, even after controlling for time and macroeconomic factors.

Conclusion and Recommendations

Conclusion

This study concludes that over the five-year period FY2020–FY2024, ICICI Bank (private sector) demonstrated statistically superior financial performance compared to SBI (public sector) in terms of return on assets, return on equity, net interest margin, asset quality, and operating profit margin. SBI, however, maintained strong capital adequacy and reduced its NPAs considerably. The results reject the null hypothesis for all six ratios, confirming that ownership type significantly influences financial outcomes.

Recommendations

For SBI (Public Sector):

Reduce operating expenses through branch rationalization and digital automation to improve OPM.

Enhance recovery mechanisms to bring GNPA below 3%.

Focus on high-margin retail and corporate lending to improve NIM.

For ICICI Bank (Private Sector):

Maintain asset quality discipline as economic cycles turn.

Sustain capital adequacy above 16% to absorb future shocks.

Continue leveraging technology for cost efficiency.

For Regulators (RBI):

Encourage PSBs to adopt best practices from private peers in risk management.

Provide incentives for PSBs to reduce NPAs without sacrificing financial inclusion goals.

For Investors:

For higher returns and efficiency, private banks like ICICI are preferable.

For safety and stability during downturns, SBI remains a solid choice due to its government backing and capital adequacy.

Limitations of the Study

Time frame: Only five years; a longer period (10 years) might capture full cycles.

Only two banks: Results may not generalize to all PSBs or PVBs.

Secondary data reliance: Accuracy depends on reported figures.

COVID-19 impact: The period includes pandemic distortions (2020–2021), which may affect long-term comparisons.

Non-financial factors: Digital adoption, employee morale, and governance quality were not quantified.

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