

Financial Performance Analysis Using Camel Model: A Study Of Selected Private Banks In India

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Abstract- Economic development is heavily reliant on the allocation and optimal use of resources, as well as the operational effectiveness of the many sectors, of which the banking industry is a key player. The banking industry facilitates monetary policy and aids in the promotion of capital formation, innovation, and monetization. Carefully assessing and analyzing bank performance is essential to maintaining a sound financial system and a productive economy. Using a five-year timeframe from 2017-18 to 2021-22, the current study aims to assess the financial performance of a few private sector banks in India using the CAMEL model.

Keywords: Financial Performance, Private sector Bank and CAMEL Model.

I. INTRODUCTION

In an economy, the banking industry is crucial to the efficient and seamless operation of the various societal activities. Every kind of action depends on finance.

The banking system is essential to modern civilization and holds a significant position in a country's economy. It is widely acknowledged that finance plays a crucial role in a nation's economic growth and serves as the foundation of the money market. Kashappa Laxmappa and CS Basavaraj (2017) compared the performance of ICICI Bank and HDFC Bank from 2011 to 2015 using financial ratios. The study found that both banks had similar profitability, but HDFC Bank slightly outperformed ICICI Bank in return on assets (ROA) and return on equity (ROE).

ICICI Bank had a higher net interest margin (NIM), indicating better earnings on interest-bearing assets. Bakhale, SR (2017) evaluated the performance of Scheduled Commercial Banks (SCBs) in India from 2010-11 to 2015-16, comparing nationalized, private sector, foreign, and regional rural banks. The study found private sector banks outperformed others in profitability and efficiency, while nationalized banks excelled in asset quality and capital adequacy. Balaji, C and Kumar, G.P. (2017) compared the financial performance of 10 public and 10 private sector banks in India from 2011-12 to 2015-16. The study found that private sector banks outperformed public sector banks in profitability, liquidity, solvency, and efficiency, with higher ROA, ROE, better asset quality, and higher capital adequacy ratios.

Study	Banks Compared	Period of Study	Key Financial Parameters	Findings
Kashappa Laxmappa & CS Basavaraj (2017)	ICICI Bank vs. HDFC Bank	2011-2015	Profitability (ROA, ROE), Net Interest Margin (NIM), Asset Quality (NPA), Cost-to-Income Ratio (CIR)	HDFC Bank outperformed ICICI Bank in ROA and ROE, while ICICI Bank had a higher NIM. HDFC Bank had lower NPAs and a more efficient cost structure (lower CIR).
S.R. Bakhale (2017)	Nationalized Banks, Private Sector Banks, Foreign Banks, Regional Rural Banks	2010-11 to 2015-16	Profitability, Asset Quality, Efficiency, Liquidity, Capital Adequacy	Private sector banks outperformed others in profitability and efficiency. Nationalized banks had better asset quality and capital adequacy.
Balaji, C and Kumar, G.P. (2017)	10 Public Sector Banks vs. 10 Private Sector Banks	2011-12 to 2015-16	Profitability, Liquidity, Solvency, Efficiency	Private sector banks performed better in profitability, liquidity, solvency, and efficiency, with higher ROA, ROE, asset quality, and capital adequacy. Public sector banks had a larger market share.
B. Lavanya and T. Srinivas (2018)	HDFC Bank, ICICI Bank, Axis Bank	2013-14 to 2017-18	CAMEL Model (Capital Adequacy, Asset Quality, Management, Earnings, Liquidity)	HDFC Bank excelled in asset quality, management quality, and earnings. ICICI Bank had better liquidity. CAMEL model proved useful in evaluating bank performance.
NS Nataraja, Chilale Rao Nagaraja, and L Ganesh (2018)	16 Private Commercial Banks in India	2008-09 to 2016-17	Profitability, Liquidity, Asset Quality, Efficiency	Private commercial banks performed well in profitability (ROA 1.22%, ROE 14.27%) and liquidity (current ratio 0.96, quick ratio 0.83). Some banks had high NPAs, which could affect liquidity.

II. REVIEW OF LITERATURE

Study	Banks Compared	Period of Study	Key Financial Parameters	Findings
Jha (2018)	Punjab National Bank (PNB) vs. ICICI Bank	2012-2017	ROA, ROE, NIM, NPAs, CAR	ICICI Bank outperformed PNB in ROA, ROE, NIM, and CAR. PNB had higher NPAs. ICICI's better performance attributed to efficient management, innovative products, and strong customer base.

Koley (2019)	State Bank of India (SBI) vs. HDFC Bank	2013-14 to 2017-18	Net Profit Margin, ROA, ROE, Solvency Ratio	HDFC Bank had higher net profit margin, ROA, and ROE than SBI. SBI had better solvency ratio. Private banks performed slightly better, but both sectors showed similar performance overall.
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Banu & Santhiyavalli (2019)	13 Scheduled Commercial Banks in India	2013-2017	ROA, ROE, NIM, GNPA, NNPA, CAR, CIR	HDFC Bank, ICICI Bank, and Kotak Mahindra Bank were top performers. Bank of Maharashtra, Allahabad Bank, and Punjab & Sind Bank performed the worst. Rankings remained consistent in sensitivity analysis.
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Agrawal Puja (2019)	Public Sector Banks (PSBs) vs. Private Sector Banks (PVBs)	2013-2017	ROA, ROE, NIM, OETA	Private sector banks (PVBs) were more profitable than public sector banks (PSBs). PVBs had better asset quality and lower NPAs. Factors contributing to PVBs' better performance include better efficiency and lower operating costs.
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Objectives of the study

- To analyze financial performance of selected private sector banks by the CAMEL Model.
- To rank them according to the parameter under the CAMEL model.

III. METHODOLOGY

This topic was the secondary focus of the data source. Bank websites, annual reports, and research papers on financial performance were used to gather information about the banks' performance. This study gathered together the top three private sector banks. It was completed between 2017-18 to 2021-22. This study focused on the top three private sector banks in India such as ICICI Bank, HDFC Bank and Axis Bank with analysing their operations using CAMEL model parameters. Using the CAMEL model parameters, the banks' financial performance was examined. The CAMEL Model has been utilized to analyze the overall and comparative performance of the chosen banks. Statistical metrics and extensive rank tests have then been employed. Through a micro-analysis of the balance sheet and income statement items, CAMEL ratios have the necessary vigor to highlight the health and financial status of banks.

C stands for capital adequacy; A for asset quality; M for management; E for earnings and profitability; and L for liquidity (also known as asset liability management).

Capital adequacy ratio =	$\frac{\text{Tier I capital} + \text{Tier II capital}}{\text{Risk weighted assets}} \times 100$
Debt / Equity ratio =	$\frac{\text{Total liabilities}}{\text{Shareholder's equity}} \times 100$
Net NPA to Total Assets=	$\frac{\text{Net NPA}}{\text{Total Assets}} \times 100$
Net NPA to Total Advances=	$\frac{\text{Net NPA}}{\text{Total Advances}} \times 100$
Credit Deposit Ratio=	$\frac{\text{Total Credit}}{\text{Total Deposits}} \times 100$
Return on Net Worth=	$\frac{\text{Net Income}}{\text{Net Worth}} \times 100$
Interest Income to Total Assets=	$\frac{\text{Net Interest Income}}{\text{Total Assets}} \times 100$
Return on Assets=	$\frac{\text{Net Income}}{\text{Total Assets}} \times 100$
Liquidity Assets to Total Assets=	$\frac{\text{Liquid Assets}}{\text{Total Assets}} \times 100$
Liquidity Assets to Total Deposits=	$\frac{\text{Liquid Assets}}{\text{Total Deposits}} \times 100$

IV. DATA ANALYSIS

Table 1: Capital Adequacy Ratio

YEAR/ BANK	ICICI		HDFC		AXIS	
	DE R	CAR	DE R	CAR	DE R	CAR
2017-18	1.8	12.6	1.7	14.5	2	11.78
2018-19	2	12.76	1.1	14.32	1.9	12.81
2019-20	1.5	13.13	1.1	14.14	1.7	12.56
2020-21	1.7	13.74	0.6	9.73	1.7	14.52
2021-22	1.6	13.85	0.7	9.2	1.4	16.04
AVG	1.7 2	13.21 6	1.0 4	12.37 8	1.7 4	13.542
RANK	2	2	1	3	3	1

Source: Annual Reports of banks

The debt-to-equity ratio displays the proportion of a company's funding that originates from investors and creditors. More creditor financing (bank loans) than investor financing (shareholders) is indicated by a larger debt-to-equity ratio. A debt-to-equity ratio indicates that creditors and investors own an equal portion of the company's assets. Table 1 shows that, out of the three banks, HDFC has the lowest average debt-to-equity ratio. Thus, HDFC's financial stability is superior. Since the 2017–18 fiscal year, AXIS Bank's debt-to-equity ratio has been steadily declining. HDFC Bank's financial stability is improving. Additionally, other banks' debt-to-equity ratios fluctuate.

As a result, other banks' debt to equity is not increasing steadily. A higher CAR ratio figure indicates improved bank solvency and financial soundness, whereas poorer solvency and financial strength are indicated by a lower value. For two chosen banks, ICICI and AXIS, the CAR ratio is steadily rising each year. Given that its average CAR

of 13.542 is larger than that of any other bank, compared to the other two, AXIS is more resilient to losses. Thus, it may be said that while considering CAR. The performance of ICICI is superior to that of all other chosen banks based on two ratios.

Table 2: Asset Quality Ratios

YEAR/BANK	ICICI		HDFC		AXIS	
	NN TA	NNT AD	NN TA	NNT AD	NNT A	NNTA D
2017-18	5.73	6	11	10.97	4.5	7
2018-19	3.01	3	7	6.55	3.4	5
2019-20	2.23	2	6	5.76	4.9	5
2020-21	1.5	2	6	5.96	2.2	4
2021-22	1.02	1	5	4.79	1.01	1
AVG	2.698	2.8	7	6.806	3.202	4.4
RANK	1	1	3	3	2	2

Source: Annual Reports of banks

The bank's effectiveness in evaluating credit risk and, to a certain degree, debt recovery is shown by the average NET NPA to TOTAL ASSET RATIO. The better the bank's performance, the lower the ratio. Table 2 shows that ICICI's average NET NPA to TOTAL ASSET RATIO is lower than those of other chosen banks. As a result, ICICI is more effective than other banks at evaluating loans. When it comes to credit evaluation, ICICI and AXIS have increased in comparison to the 2017–2018 fiscal year, while the other banks have decreased. By examining the Net NPA levels, we can assess the efficacy of the bank's credit risk management system.

The ratio of net assets that are not performing to net advances is used to evaluate the performance of the banks' assets and advances. A lower Net NPA level indicates better quality assets for the bank. ICICI's average NET NPA to a total ADVANCES ratio is lower than that of the other banks selected. As a result,

ICICI is outperforming other banks. Comparing the chosen banks' NET NPA to TOTAL ADVANCES RATIO to the fiscal year 2017–2018, there is no increase. According to the ratios considered for the banks' ASSET QUALITY, AXIS and ICICI are therefore performing better than the other banks in the report.

Table 3: Management Quality Ratios

YEAR/BANK	ICICI		HDFC		AXIS	
	CDR	RNR	CDR	RNR	CDR	RNR
2017-18	72.47	-2.21	72.52	3.01	73.23	-22.75
2018-19	73.94	1.09	67.52	-31.26	71.2	-11.92
2019-20	74.04	8.69	67.74	-22.51	70.2	-10.16
2020-21	69.75	8.89	67.47	0.74	66.11	4.79
2021-22	67.86	12.53	63.39	3	64.12	7.97
AVG	71.612	5.798	67.728	-9.404	68.972	-6.414
RANK	1	1	3	3	2	2

Source: Annual Reports of banks

Total advances as a percentage of total deposits are shown by the credit deposit ratio. It demonstrates how eager the management is to increase revenue through more loan activities. For banks, a ratio of 60% is regarded as standard. Bank profitability will increase if the CD ratio is higher because a greater proportion of the mobilized deposits will be lent to various industries. Table 3 shows that ICICI's average credit deposit ratio is higher than that of every other bank that was chosen. As a result, when it comes to deposits, ICICI performs better than the other banks. With the exception of AXIS, all of the chosen banks have seen steady increases in their credit deposit ratios.

One profitability statistic that assesses a company's capacity to make money off of the investments made by its shareholders is the RETURN ON NET WORTH ratio. Out of all the banks that were chosen, ICICI Bank has the highest average RETURN ON NET WORTH ratio (5.798). Therefore, compared to other chosen banks, ICICI is managing funds more successfully. With the exception of HDFC, none of the chosen banks have increased their RETURN ON NET WORTH RATIO from 2017 to 2018. Therefore, it may be concluded that when taking management quality ratios into account. Out of the three chosen banks, ICICI is doing well, according to the two ratios.

Table 4: Earnings Capacity Ratios

YEAR/BANK	ICICI		HDFC		HDFC	
	CDR	RNR	CDR	ROA	IITA	ROA
2017-18	72.47	-2.21	72.52	-1.55	6.89	-0.59
2018-19	73.94	1.09	67.52	-1.21	6.76	-0.52
2019-20	74.04	8.69	67.74	0.05	6.41	0.27
2020-21	69.75	8.89	67.47	0.2	5.72	0.44
2021-22	67.86	12.53	63.39	0.28	6.3	7.97
AVG	71.612	5.798	67.728	-0.446	6.416	1.514
RANK	1	1	3	3	2	1

Source: Annual Reports of banks

The net interest margin is calculated as the ratio of the net interest revenue to total assets. A positive margin of net interest is the result of an investment plan paying greater interest than it costs. Conversely, a negative the net interest margin means that the investment plan's expenses exceed its earnings. As can be seen from the table, HDFC performs better than other banks and has a higher average INTEREST INCOME to TOTAL ASSETS ratio than other banks (6.86). When comparing the interest income to total

assets of the chosen banks to the fiscal year 2017–18, there is no increase. The bank's profits per currency unit of assets are measured by return on assets.

It acts as a barometer for how well a company handles its resources. It is one of the suggestions made by the RBI for examining the balance sheets of banks. When this ratio is higher, banks are more profitable and productive financially; when it is lower, banks are less productive. Table 4 shows that all of the chosen banks had greater average AXIS RETURN ON ASSETS ratios. As a result, in terms of profitability and financial efficiency, the AXIS performs better than the other selected banks. Therefore, while examining two efficiency ratios, it is evident that HDFC and AXIS are performing well among the three selected banks.

Table 5: Liquidity Ratios

YEAR/BANK	ICICI		HDFC		AXIS	
	LATA	LATD	LATA	LATD	LATA	LATD
2017-18	4.2	5.54	3.51	4.03	4.68	5.12
2018-19	4.6	6.03	3.74	4.47	4.19	4.98
2019-20	4	5.1	4.11	4.74	3.64	4.44
2020-21	4.43	5.75	4.55	5.43	3.51	4.09
2021-22	4.83	6.31	3.47	3.97	3.87	4.45
AVG	4.412	5.746	3.876	4.528	3.978	4.616
RANK	1	1	3	3	2	2

Source: Annual Reports of banks

The ratio of assets that are liquid to total assets indicates the proportion of total assets held as liquid assets. One could argue that this liquid is adequate to meet the banks' short-term obligations. The bank's degree of liquidity preference is shown by this ratio. More bank liquidity is indicated by a higher

ratio number, while less bank liquidity is shown by a lower value. Table 5 demonstrates that all of the selected banks' liquidity efficiency improved in the fiscal year 2021–2022 compared to the fiscal year 2017–18. ICICI has the greatest average LIQUID ASSETS TO TOTAL ASSETS ratio (4.412) among all the selected banks.

The liquid resources to total deposit ratio indicate how much of the total deposits are kept as liquid assets. Larger bank liquidity is indicated by a larger ratio value, while lower bank liquidity is indicated by a lower ratio value. ICICI has the greatest average ratio of liquid assets to the total deposits (5.746) among all the selected banks. ICICI is therefore in a better liquidity position than other banks. The liquidity positions of HDFC and AXIS were better compared to the fiscal year 2017–18. Thus, it can be concluded from two liquidity ratios that, out of the three chosen banks, ICICI and AIX are doing well in terms of liquidity.

Table 6: Overall ranking for select banks based on CAMEL Rating

Ratio/Bank	Icici	Hdfc	Axis
Debt Equity Ratio	2	1	3
Capital Adequacy Ratio	2	3	1
Net Npa To Total Assets	1	3	2
Net Npa To Total Advances	1	3	2
Credit Deposit Ratio	1	3	2
Return On Network	1	3	2
Interest Income To Total Assets	3	1	2
Return On Assets	2	3	1
Liquid Assets To Total Assets	1	3	2
Liquid Assets To Total Deposits	1	3	2
Final Rank Of Bank	1	3	2

Table 6 indicates that ICICI has the strongest performance in terms of return on net worth, credit deposit ratio, net non-performing assets to total assets, net non-performing assets to total loans, and

liquid assets to total deposits. In terms of debt-to-equity and interest income to total assets, HDFC performs the best. In terms of returns on assets and the capital adequacy ratio, AXIS performs best. ICICI is ranked top and HDFC is ranked last in terms of performance when the chosen ratios in the CAMEL MODEL are taken into account.

V. CONCLUSION

Central banks across the world have enhanced the quality and methods of their supervision as a result of drastic changes. Along with other established practices and methods, many industrialized nations now use consistent financial rating systems (CAMEL RATING) to assess the performance of their banks. ICICI is outperforming other banks in the current assessment on capital adequacy ratios. Asset quality ratios show that HDFC and AXIS are doing well.

ICICI performs better than other banks when looking at management quality ratios. AXIS is outperforming other banks based on earning capacity ratios. Out of the three banks, ICICI is the most liquid, while HDFC is the least. All of the chosen banks do not exhibit consistent development in any of the metrics. ICICI Bank, HDFC Bank, and AXIS Bank are the banks that were chosen based on the average of all the ranks associated with all of the measured ratios.

Authors Contribution

All the authors have contributed equally for this research Paper.

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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