

A Study on Financial Performance of Selected Private Sector Banks in India - A Camel Approach

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Abstract

Indian banking sector is invariably presumed to be one of the most important systems in the economy. Banking sectors are considered as the life blood of the Indian economy as they play an important and vital role in the economic activities. This study examines the overall performance of selected private sector banks using capital adequacy, asset quality, management effectiveness, earnings quality and liquidity level (CAMEL approach) over the period 2013-2022. Although profitability indicators (such as return on assets, return on equity and net profit margin) present the performance of selected private sector banks, it would be more appropriate to use the CAMEL Approach as a tool to assess overall performance. Because the performance of banks does not only depend on the level of NPAs or profitability, it is primarily based on various dimensions. To consider this point of view, the researchers adopted the CAMEL approach for this study to evaluate the overall financial performance of selected private sector banks.

Keywords: NPA Indicators, Profitability Indicators, CAMEL Approach, Return on Assets and Return on Equity.

Introduction

The banking sector is an important aspect of India's financial system. It plays a key role in improving India's currency by stimulating capital formation, innovation and monetization for further economic policies. Advances in computational tools have evolved the overall performance of rating structures over time from a single-sided structure to a more complete structure covering all components of a bank. After the reform, the Indian banking system has seen visible improvements. Maintaining financial balance in the economy often requires ongoing performance reviews. In the midst of the recent global banking crisis, it has proven important to assess a bank's overall performance by implementing a regulatory framework under its supervision. CAMEL approach is one of the assessment tools shown to be suitable for holistic performance measurement, evaluation and strategic planning for future boom and improvement of Indian banks related to the transformation needs of this sector. In this study, the researcher has to evaluate the financial performance of the selected private sector bank using CAMEL Approach

Literature review

Studies Anteneh, Arega and Yonas, (2011), the pioneer researches made the evaluation of the performance of the selected commercial banks of the Ethiopia using the CAMEL framework for the period of 2013-2022 and they found that independent variables in CAMEL framework have highly explained the performance variables i.e., return on assets and return on equity. Hirtle and Lopez examine and stressed about the usefulness of the previous CAMEL rating for assessing the bank's present situation. The focused was on the confidentiality of the CAMEL rating to senior management only for protecting the business strategies and appropriate supervisory of staff. Over the period of 1989 to 1995, it indicates that the private supervisory information during the last on-site exam remains useful with the respect to the current condition of the bank up to 6 to 12 quarters. In conclusion, it summarizes those CAMELS rating is clearly useful in supervisory monitoring of current condition.

The academic studies have been done regarding the performance evaluation whether extent private supervisory information is useful in the supervisory monitoring of banks or not. Barker and Holdsworth (1993) found the evidence that CAMELS ratings are useful with regard to estimating bank failure, even after controlling for a wide range of publicly available information about the condition and performance of banks. According to some studies, viability of information of CAMELS ratings is short lived. Cole and Gunther (1996, 1998) analyzed a similar question and found that even if CAMELS ratings contain useful information, they depreciate quickly. Moreover CAMELS can be used for past ratings. Hirtle and Lopez (1999) examined the utility of past CAMELS ratings for evaluating banks' current conditions.

Decamps et al. (2004) have supervisors choosing intervention thresholds to maintain adequate incentives for bank risk taking and study the effects of ex-post liquidity assistance and forbearance. Dahiyat (2012) examined each parameter of CAMELS system (Capital adequacy, asset quality, management quality, earning, liquidity and sensitivity to market risks) by conducting literatures and empirical studies, and relying on interviews with responsible persons in Jordan securities commission and brokerage firms. Barr et al. (2002) described the CAMELS rating system used by bank examiners and regulators; and finds that banks with high efficiency scores also have strong CAMELS ratings. Huang, Wen, and Yu (2012) examine the financial determinants of bank performance in Taiwan from the period of 2010-2015 (pre-crisis period) and during 2016-2022 (post-crisis period). The findings show that the relationship between the return on assets and certain CAMEL ratios remain strong. Moreover, in terms of asset quality, it shows that there is high protection against external shocks during the pre- and post- crisis period.

Statement of the Problem

The Banks play an important role in the growth of developing economies. In India, the profits of private banks are higher than those of public banks. A study was therefore conducted to assess the financial performance and financial position of private banks such as HDFC, ICICI and AXIS Bank.

Scope of the Study

Using CAMEL approach, the banks' performances are evaluated with the help of Camel Ratios or parameters. Various formulas used to arrive at capital Adequacy Ratio, Net NPA Ratio, Business per Employees, Profit per Employees, and the like. Camel Approach not only provides the worthiness of the banking sector but also helps in providing Qualitative Judgments. The current study was conducted to highlight the financial performance comparisons of HDFC, ICICI and AXIS bank with the CAMEL Model. The study will determine the financial position of the HDFC, ICICI and AXIS banks.

Objectives of the Study

The following are the key objectives of the study To understand the financial performance of HDFC, ICICI and AXIS bank by applying CAMEL Approach. To analyse the financial position of HDFC, ICICI and AXIS bank by using CAMEL Approach. To offer suitable suggestions and recommendations for the improvement of financial performance of selected private sector banks of India.

Limitations of the Study

The research study cover only Ten years from 2013-2022. The researchers performed a comprehensive analysis of the financial statements of all the private sector Bank. The quality of the research depends on the accuracy, reliability, and quality of the secondary data source. All the data were taken from the annual reports of HDFC, ICICI and AXIS bank. It is possible that the data shown in the annual reports may be entered through a window that does not reflect the actual position of the banks. Published data are not the same and are not properly disclosed by banks.

Methodology and Data Collections

The present study is based on secondary data that has been collected from annual reports of the respective banks, Reserve Bank of India data, 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 10 years starting from 2013 to 2022.

Tools of Analysis

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

Sampling

A sample of three private Banks HDFC, ICICI and AXIS were selected based on market capitalization during 2022.

ACAMEL Approach

The Camel approach is used in the banking industry to analyze and evaluate bank creditworthiness and analyze bank risk. It is recognized as an international classification system used by higher banking authorities to rate financial institutions based on five factors, represented graphically in its word form. Higher authorities gave each financial institution a specific rating or score. For each question, 5 is the most effective rating and 1 is the worst. The five factors are observed in this approach:

“C” stands for Capital Adequacy. “A” stands for Asset Quality.

“M” stands for Management Efficiency

“E” stands for Earning Ability.

“L” stands for Liquidity Position

Capital Adequacy

The capital adequacy is the essential aspects of banking institution which has an impact on profitability and bankruptcy. It helps to protect the investors' confidence and serves as a cushion during the crisis period. It is the very important part of any financial institution as it is essential to maintain capitalization.

Capital Adequacy Ratio (CAR)

The CAR used by bank to determine the adequacy of their capital

keeping in view their exposures. $\text{Capital Adequacy Ratio} = (\text{Tier 1 Capital} + \text{Tier 2 Capital}) / \text{Risk Weighted Assets}$

Table 1 Capital Adequacy Ratio (CAR)

Year	HDFC	ICICI	AXIS
2013	17.00	19.00	17.00
2014	16.00	18.00	16.00
2015	17.00	17.00	15.00
2016	16.00	17.00	15.00
2017	15.00	17.00	15.00
2018	15.00	18.00	17.00
2019	17.00	17.00	16.00
2020	19.00	16.00	17.53
2021	18.79	19.12	19.12
2022	18.90	19.16	18.54
Mean	16.97	17.73	16.62
SD	1.52	1.10	1.48

To draw conclusions from Table 1, it depicts that there is an average minimum ratio for AXIS Bank is 16.62 and maximum ratio of 17.73 for ICICI Bank. The minimum ratio specifies that AXIS Bank

is not sufficient capitalization compared to other private sector banks. The maximum ratio labels that ICICIBank has enough capital position compared to other banks. HDFC Bank has the highest level of standard deviation and ICICIBank has the lowest level of standard deviation.

Table 2 Anova for Capital Adequacy Ratio

Source of Variation	SS	Df	MS	F	F Crit
Between Groups	6.4282	2	3.2141	F=1.6896 6	3.35
Within Groups	51.3599	27	1.9022		
Total	57.781	29			

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
From the above Table 2 ANOVA for capital

adequacy ratio of private sector banks, shows that since the calculated F value (1.68) less than F critical value (3.35) at the 5% level of significance, Null hypothesis (H₀) is accepted, and it can be concluded that there is a significant relationship on the CAR among the private bank group.

Asset Quality

Asset quality is one of the key determinants of a banking institution's financial health. As losses are eventually written off against capital, they have a ripple effect and ultimately affect the profitability of commercial banks. This means that depreciating assets weaken capital strength and lead to solvency problems. As part of asset quality, it is evaluated in relation to the severity and distribution of damage to the asset. The main purpose of calculating asset quality is to determine the ratio of non-performing assets (NPA) to total assets.

Sushendra Kumar Mishra Parvesh Kumar Aspal A CAMEL MODEL ANALYSIS OF STATE BANK GROUP: this paper evaluated the financial performance of State bank group using ratio based CAMEL model and gives suggestion for improvement. The author has done the analysis for a period from 2019-2022 and a total of 6 public sector banks are selected. It signifies that the overall performance of State Bank group is same; this may be because of adoption of modern technology, banking reforms and recovery mechanism. The author is of the opinion that CAMEL model helps to know the banks which are not performing well and corrective measures can be taken accordingly.

Dr.D.Maheshwara Reddy K.V.N.Prasad EVALUATING PERFORMANCE OF REGIONAL RURAL BANKS:

AN APPLICATION OF CAMEL MODEL: this paper evaluates the financial performance of Regional Rural banks using CAMEL model during post reorganization period. The authors have selected two RRB's Andhra PragathiGrameenaBank ,SapthagiriGrameena Bank. Analysis is done for a period from 2018-2021

Mishra Aswini Kumar, G. Sri Harsha, ShiviAnand and Neil Rajesh Dhruva: Analyzing Soundness in Indian Banking: A CAMEL Approach: The objective of this paper was to analyse the performance of 12 public and private sector banks for a period of 11 years from 2010-2022 using CAMEL model. It was found that private sector banks have performed well and public sector banks display low economic soundness in comparison. Theyconclude that performance of the banks cannot be judged solely based on the absolute values of the CAMEL ratios because ranking is subjectto criticism as the ratios used for the purpose of ranking can be interpreted in different ways by different people.

Net Non-Performing Assets

NPA are assets that confiscate the income generated by banks. Net-NPA is total bad assets(real) whichareless thantheprovisionleftaside. $\text{NetNPA} = \text{Gross NPA} - \text{Totalprovisionheld}$.

Table 3 NET NPA To Total Assets

Year	HDFC	ICICI	AXIS
2013	0.12	0.42	0.21
2014	0.17	0.55	0.27
2015	0.15	0.97	0.29
2016	0.19	1.80	0.48
2017	0.21	3.27	1.43
2018	0.24	3.16	2.40
2019	0.26	1.39	2.29
2020	0.23	0.90	1.02
2021	0.26	0.74	0.70
2022	0.32	0.81	0.73
Mean	0.22	1.40	0.98
SD	0.06	1.04	0.81

It is understood from Table 3, that there is an average minimum ratio for HDFCBankis0.22 andmaximum ratio of 1.40 for ICICI Bank. The minimum ratio identifies that HDFC Bank shows better conditionof NPA than other private sector bank. The maximum ratio indicates that ICICI bank need to focus reduce loanandborrowingactivityandneedtakestepforcoverinterestborrowing.

Table 4 Anova for Net NPA to Total Assets

Source of Variation	SS	Df	MS	F	Fcrit
Between Groups	7.2348	2	3.6174	F=6.2655	3.35
Within Groups	15.5885	27	0.5774		
Total	22.8233	29			

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

H₁: All private banks under study have on a difference average of net non-performing assets ratio.

From the Table 4 inferred that the ANOVA for net NPA to total assets, since the calculated F value (6.26) more than F critical value (3.35) at the level of significance 0.05, accept the alternate hypothesis. i.e., All the private sector banks under study have a difference average of net non-performing assets ratio.

Return on Assets (ROA)

It does explain the bank's ability to generate profit from assets. $\text{Return on Assets} = \frac{\text{Net Income}}{\text{Average Total Assets}}$

Table 5 Return on Assets (ROA)

Year	HDFC	ICICI	AXIS
2013	1.68	1.55	1.52
2014	1.72	1.64	1.62
2015	1.73	1.72	1.59
2016	1.73	1.34	1.56
2017	1.68	1.26	0.61
2018	1.64	0.77	0.03
2019	1.69	0.34	0.58
2020	1.71	0.72	0.17
2021	1.78	1.31	0.66
2022	1.78	1.65	1.10
Mean	1.71	1.23	0.94
SD	0.04	0.47	0.61

From Table 5, it is supposed that selected private sector banks the minimum average ratio of 0.94 AxisBank and maximum 1.71 HDFC, minimum ratio indicates that the AXIS Bank has the least returns on assets compared to other selected private banks. The maximum ratio displays that HDFC Bank has a profitable asset. AXIS Bank has the maximum level of standard deviation and whereas HDFC Bank is the lowest.

Table 6 ANOVA for Return on Assets (ROA)

Source of Variation	SS	DF	MS	F	F crit
Between Groups	3.0298	2	1.5149	F=7.63557	3.35
Within Groups	5.3569	27	0.1984		
Total	8.3867	29			

H₀: All private banks under study have on a same average of return on assets

H₁: All private banks under study have on a difference average of return on

Assets

From the above ANOVA Analysis, it is inferred that since the calculated F value (7.63) more than F critical value (3.35) at the level of significance 0.05, accept the alternate hypothesis. i.e., All private banks under study have a difference average of return on assets ratio.

Management Efficiency

Management efficiency is one of the most important elements of the CAMEL framework. It measures management competence, leadership innovation, management ability to cope with a dynamic environment, and overall adherence to established norms and standards. This segment includes exclusive analysis that measures the relative efficiency and effectiveness of management.

Credit Deposit Ratio

The CDR ratio is used to calculate a ratio to cover the credit bank's ability to cover withdrawals that its customers derive. The bank must make the deposit on request, so if the ratio is high, there is a high risk to the bank. $CREDIT\ DEPOSIT\ RATIO = LOANS / DEPOSIT$.

Table 7 Credit Deposit Ratio (CDR)

Year	HDFC	ICICI	AXIS
2013	80.92	99.19	77.97
2014	82.49	102.05	81.89
2015	81.08	107.18	87.17
2016	85.02	103.28	94.64
2017	86.16	94.73	90.03
2018	83.46	91.34	96.92
2019	88.76	89.85	90.21
2020	86.60	83.70	89.27
2021	84.85	78.68	88.18
2022	86.43	79.75	87.00
Mean	84.58	92.98	88.33
SD	2.56	10.05	5.51

From the Table 7 depicts that the loan rate is expected to be at least 77.97 in 2013 for AXIS and 107.18 for ICICI Bank during 2015. The average rates of 84.58 for HDFC Bank and up to 92.98 for ICICI Bank. The minimum ratio of HDFC Bank indicates that the risk of HDFC Bank is lower than that of CDR. The maximum rate of ICICI Bank shows that there is a greater reliance on credit deposits. This disturbs the liquidity of banks compared to other banks. The ICICI Bank has the highest standard deviation level and HDFC Bank has the lowest standard deviation level.

Table 8 Anova for Credit Deposit Ratio (CDR)

Source of Variation	SS	DF	MS	F	F Crit
Between Groups	353.97	2	176.985	F=3.8487	3.35
Within Groups	1241.6076	27	45.9855		
Total	1595.5777	29			

H₀: All private banks under study have on a same average of credit deposit ratio.

H₁: All private banks under study have on a difference average of credit deposit ratio

It found that from the Table 8, the calculated value (3.84) is greater than Critical value (3.35), therefore, the Null hypothesis (H₀) is rejected and hence, it can be concluded that all private sector banks under study have a significant difference on Credit Deposit Ratio.

Return on NET worth (RONW)

RONW is used to measure the profitability of the bank; The amount of money that the banks generate from the investment of equity shareholders.

Return on Net Worth = $\text{Net Income} / \text{Shareholders Equity}$

Table 9 Return on Equity/Networth(%)

Year	HDFC	ICICI	AXIS
2013	18.57	12.48	15.64
2014	19.50	13.39	16.26
2015	16.47	13.89	16.46
2016	16.91	11.19	15.46
2017	16.26	10.11	6.59
2018	16.45	6.63	0.43
2019	14.12	3.19	7.01
2020	15.35	6.99	1.91
2021	15.27	11.21	6.48
2022	15.39	13.94	11.30
Mean	16.43	10.30	9.75
SD	1.61	3.61	6.09

Table 9 shows that the means that the price of selected private sector banks under study is at least 0.43 for Axis Bank in 2018 and a maximum of 19.50 for HDFC Bank during the year 2014.

The minimum average ratio for AXIS Bank is 9.75 and the maximum average ratio for HDFC Bank is 16.43. The minimum ratio of ICICI banks indicates that banks have less capacity to profit from the assets of shareholders than other private sector banks. The maximum ratio of HDFC Bank indicates that banks have greater capacity to profit from the assets of shareholders than other banks. The Axis Bank has the highest standard deviation level and the HDFC bank has the lowest standard deviation level.

Table 10 Anova for Return on Equity/Networth

Source of Variation	SS	DF	MS	F	F crit
Between Groups	274.6535	2	137.3268	F = 7.82433	3.35

Within Groups	473.8839	27	17.5513		
Total	748.5374	29			

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H₀: All private banks under study have on a same average of return on net worth

H₁: All private banks under study have on a difference average of return on net worth

From the ANOVA table 10, it is inferred that since the calculated F value (7.82) more than F critical value (3.35) at the level of significance 0.05, accept the alternate hypothesis. i.e., All private sector banks under study have a difference average of return on net worth.

Business Employee (BPE)

By this ratio, banks measure the ability of management to effectively use their employee resources to generate profits.

The total revenue of the bank is divided by the number of bank personnel.

Business Per Employee = Revenue / Number of Employees.

Table 11 Business/Employee (Rs.)

Year	HDFC	ICICI	AXIS
2013	77,603,363.18	93,911,715.27	118,619,441.57
2014	98,340,460.49	92,849,708.72	120,464,715.54
2015	107,003,994.66	112,938,140.26	142,913,797.44
2016	115,472,348.91	118,696,176.03	138,973,029.46
2017	142,094,024.12	115,193,098.71	139,083,338.45

2018	163,972,185.69	129,753,214.80	149,842,826.65
2019	177,699,813.90	142,868,072.08	168,432,242.98
2020	183,054,361.58	142,596,981.88	163,410,991.87
2021	205,498,809.4	168,734,303.8	169,975,387.6

	0	9	4
2022	206,813,042.2	181,738,412.4	178,222,555.0
	9	0	5
Mean	347.51	413.07	424.79
SD	299.98	327.97	316.38

Table 11 above assumes that the minimum business range for ICICI Bank registered 92,849,708.72 during 2014 and maximum of 206,813,042.29 for HDFC Bank during 2021. Minimum average ratio for HDFC Bank is 347.51 and maximum ratio of 424.79 for Axis Bank. Axis Bank has a highest ratio, which shows that Axis Bank has more efficiency of employees in all banks, while HDFC Bank has the lowest performance per employee. AXIS Bank has the highest standard deviation level and 316.38 Bank has the lowest level of standard deviation.

Table 12 Anova for Business/Employee

Source of Variation	SS	DF	MS	F	F crit
Between Groups	104079.2019	2	52039.6009	F=0.5245	3.10
Within Groups	8631938.0657	87	99217.6789		
Total	9736017.2676	89			

H₀: All private banks under study have on a same average of business per employees

H₁: All private banks under study have on a difference average of business per employees From the ANOVA Table 12 shows that as

the calculated F value (0.52) is less than F critical value (3.10) at the 5 % level of significance, Null hypothesis (H₀) is accepted, and it can be concluded that there is a significant relationship on the BPE among the private bank group.

Earning Ability

Earnings quality represents future earnings sustainability and growth, the value of banking services, and the ability to maintain quality and consistently generate earnings. Earnings and profitability are considered for the adequacy of interest rate policies and provisions. It essentially determines a bank's profitability and accounts for future sustainability and growth.

Operating Profit Margin (OPM)

This part shows how much cash is thrown after most of the expenses are completed. High operating profit margin means that the bank has good cost control.

Operating Profit Margin = Operating Earnings / Revenue

Table 13 Operating Profit Margin (%)

Year	HDFC	ICICI	AXIS
2013	-0.36	-0.05	-5.04
2014	1.35	-1.39	-3.87
2015	2.51	-2.03	-2.83
2016	2.56	-10.61	-2.80
2017	3.25	-17.91	-17.98
2018	2.82	-19.36	-23.35
2019	3.48	-17.58	-15.37
2020	2.60	-11.38	-22.20
2021	4.89	-3.50	-12.96
2022	5.83	5.58	-3.25
Mean	2.89	-7.82	-10.97
SD	1.71	8.72	8.37

shows that selected private sector banks have a range of at least -23.25 for Axis Bank during 2018 and a maximum of 5.83 for HDFC Bank during 2022. The minimum average ratio of -10.97 for Axis Bank and maximum ratio of 2.89 for HDFC Bank. The minimum ratio of Axis Bank indicates that there is less cost control capacity than other banks. The maximum ratio of HDFC Bank indicates that there is better cost control capacity than other private sector banks. AXIS Bank has the highest standard deviation and HDFC Bank has the lowest standard deviation.

Table 14 Anova for Operating Profit Margin

Source of Variation	SS	DF	MS	F	F crit
Between Groups	1055.8299	2	527.915	F=10.63	3.35
Within Groups	1340.5759	27	49.651		
Total	2396.4058	29			

H₀: All private banks under study have on a same average of operating profit margin

H₁: All private banks under study have on a difference average of operating profit margin From the ANOVA table 14, it is inferred that

since the calculated F value (10.63) more than F critical value (3.35) at the level of significance 0.05, Null hypothesis (H₀) is rejected and accept the alternate hypothesis. i.e., All private banks under study have a difference average of operating profit margin.

Net Profit Margin

NPM shows how much of the profit remaining after all operating expenses, interest, tax is deducted from the total income of the bank.

$$\text{Net Profit Margin} = \frac{\text{Total Revenue} - \text{Total Expenses}}{\text{Total Revenue}} = \frac{\text{Net Profit}}{\text{Total Revenue}}$$

Table 15 Net Profit Margin(%)

Year	HDFC	ICICI	AXIS
2013	19.18	20.77	19.05
2014	20.61	22.20	20.29
2015	21.07	22.76	20.73
2016	20.41	18.44	20.06
2017	20.99	18.09	8.26
2018	21.79	12.33	0.60
2019	21.29	5.30	8.50
2020	22.86	10.60	2.59
2021	25.74	20.46	10.35
2022	28.93	27.02	19.33
Mean	22.29	17.80	12.98
SD	2.92	6.53	7.83

It is inferred from Table 15 states that selected private sector banks have a ratio of at least 0.60 for Axis Bank during 2018 and a maximum ratio of 27.02 for ICICI Bank during 2022. Minimum average ratio of 12.98 for Axis Bank and maximum ratio of

22.29 for HDFC Bank. The minimum ratio of Axis Bank indicates that axis banks have less profitability than other two banks. The maximum ratio of HDFC Bank indicates that the bank has a good profitability compared to other two private sector banks. Axis Bank has the highest level of standard deviation and HDFC Bank has a below level.

Table 16 Anova for Net Profit Margin

Source of Variation	SS	DF	MS	F	F Crit
Between Groups	433.6562	2	216.8281	F=5.78826	3.35
Within Groups	1011.4197	27	37.46		
Total	1445.0759	29			

H₀: All private banks under study have on a same average of net profit margin.

H₁: All private banks under study have on a difference average of net profit margin.

From the ANOVA table 16, it is shown that the calculated F value (5.78) more than F critical value (3.35) at the level of significance 0.05, Null hypothesis (H₀) is rejected and accept alternative hypothesis. i.e., All private sector banks under study have on a difference average of net profit margin.

Liquidity Position

With sufficient liquidity, a financial institution can raise sufficient funds by either increasing its liabilities or converting its assets into cash quickly and at a reasonable cost. A bank's excellent liquidity situation has a positive impact on its profitability. Cash and investments are the most liquid banking assets. This set of indicators assesses a bank's ability to meet its responsibilities.

Cash Deposit Ratio (CDR)

It mentions how much bank funds are used for lending. Banks are divided by total deposits with total cash and RBI.

$\text{Cash Deposit Ratio} = \text{Liquid Asset} / \text{Total Deposit}$

Table 17 Cash Deposit Ratio

Year	HDFC	ICICI	AXIS
2013	5.46	7.21	5.39
2014	6.02	6.54	5.97
2015	6.46	6.85	6.11
2016	5.77	6.74	6.2

2017	5.71	6.45	6.89
2018	9.95	6.17	7.64
2019	8.85	5.85	7.04
2020	5.75	5.14	10.10
2021	6.83	4.77	10.22
2022	7.85	5.32	9.60
Mean	6.87	6.10	7.52
SD	1.53	0.81	1.81

Table 17 indicates that selected private sector banks have a minimum ratio of 4.77 for ICICI Bank during 2021 and a maximum of 10.22 for AXIS Bank during 2021. The Minimum average ratio for ICICI Bank is 6.10 and maximum average ratio of 7.52 for AXIS Bank. The minimum ratio of ICICI Bank indicates that ICICI Bank has less funds for lending out of total deposits. The maximum ratio of AXIS Bank indicates that there are more funds used for lending from total deposits than other two private sector banks. AXIS Bank has the highest level of standard deviation and ICICI Bank has the lowest level of standard deviation.

Table 18 Anova for Cash Deposit Ratio

Source of Variation	SS	DF	MS	F	Fcrit
Between Groups	9.9889	2	4.9944	F=2.3855	3.35
Within Groups	56.5279	27	2.0936		
Total	66.5168	29			

H₀: All private banks under study have on a same average of cash deposit ratio

H₁: All private banks under study have on a difference average of cash deposit ratio

Table 18 depicts that the calculated value (2.38) is less than critical value (3.35), the Null hypothesis (H₀) is accepted and rejected alternative hypothesis, hence it can be concluded that all private banks under study have on a significant relationship of average of cash deposit ratio (CDR)

Liquidity Ratio(LR)

It refers to highly liquid assets held by financial institution in order to meet short- term obligations. It's shown the capacity of bank to respect the demand from depositor during a particular year.

$$\text{Liquidity Ratio} = \frac{\text{Liquid Assets}}{\text{Total Assets}}$$

Table 19 Liquid Assets to Total Assets

Year	HDFC	ICICI	AXIS
2013	11.56	13.13	8.08
2014	13.16	12.48	9.71
2015	9.39	10.42	9.96
2016	10.87	16.30	11.64
2017	10.56	17.91	15.94
2018	15.02	17.73	13.57
2019	10.49	16.81	15.88
2020	9.18	17.77	19.96
2021	9.47	16.79	14.26
2022	11.51	16.49	15.94
Mean	11.12	15.58	13.49
SD	1.82	2.61	3.65

Table 19 indicates that chosen among the private sector banks have a minimum ratio of 8.08 for AXIS Bank during 2013 and a maximum of 19.96 for same INDUSIND Bank during year 2020. The minimum average ratio 11.12 for HDFC Bank and maximum mean ratio of 15.11 for ICICI Bank. The minimum ratio of HDFC Bank indicates that this Bank shows low capacity to respect demand for money from a depositor during the specified year. The maximum ratio indicates that ICICI Bank has greater capacity to respect the demand for money from a depositor during a particular year than other private sector banks. Axis Bank has the highest level of standard deviation and HDFC Bank has the lowest level of standard deviation.

Table 20 ANOVA for Liquid Assets to Total Assets Ratio

Source of Variation	SS	DF	MS	F	F crit
Between Groups	99.6816	2	49.8408	F	3.35
Within Groups	210.9953	27	7.8146	6.37788	
Total	310.677	29			

H₀: All private banks under study have on a same average of Liquidratio

H₁: All private banks under study have on a difference average of Liquidratio

Table 20 specifies that the calculated value (6.37) is greater than critical value (3.35), the Null hypothesis (H₀) is rejected and accepted alternative hypothesis, hence it can be concluded that all private banks under

Conclusion

The evaluation of the financial performance of selected private sector banks in India through the CAMEL approach provides valuable insights into their overall health and stability. The CAMEL framework, which assesses Capital Adequacy, Asset Quality, Management Quality, Earnings Quality, and Liquidity, serves as a comprehensive tool for gauging the robustness of these financial institutions.

Capital Adequacy Assessing the capital adequacy of the banks is crucial for ensuring their resilience in the face of economic uncertainties and potential financial shocks. A higher capital adequacy ratio indicates a bank's ability to absorb losses and maintain its financial stability.

The capital adequacy is the essential aspects of banking institution which has an impact on profitability and bankruptcy. It helps to protect the investors' confidence and serves as a cushion during the crisis period. It is the very important part of any financial institution as it is essential to maintain capitalization.

Asset Quality- The asset quality of the selected private sector banks is a key determinant of their financial health. A thorough examination of non-performing assets (NPAs), loan quality, and risk management practices provides insights into the effectiveness of their credit policies and risk mitigation strategies.

Asset quality is one of the key determinants of a banking institution's financial health. As losses are eventually written off against capital, they have a ripple effect and ultimately affect the profitability of commercial banks. This means that depreciating assets weaken capital strength and lead to solvency problems. As part of asset quality, it is evaluated in relation to the severity and distribution of damage to the asset. The main purpose of calculating asset quality is to determine the ratio of non-performing assets (NPA) to total assets.

Management Quality The management quality of a bank is vital for its long-term success. A competent and forward-thinking management team is essential for making strategic decisions, adapting to market dynamics, and ensuring the institution's sustainability.

Earnings Quality Analyzing the earnings quality helps in understanding the banks' profitability and the sustainability of their earnings over time. Consistent and transparent earnings are indicative of effective business operations and prudent financial management.

Liquidity Adequate liquidity is crucial for maintaining day-to-day operations and meeting financial obligations. An examination of liquidity ratios and management practices provides insights into the banks' ability to manage

short-term cash flow requirements.

the CAMEL approach enables a comprehensive assessment of the selected private sector banks in India, covering various aspects of their financial performance. By carefully considering each component of the framework, stakeholders can make informed decisions about investing, collaborating, or engaging with these banks.

It's important to note that the dynamic nature of the financial industry requires continuous monitoring and adaptation to ensure sustained success in a never-changing economic landscape.

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