Assessing Financial Health: A CAMELS Model Analysis of Indian Commercial Banks

***Mr. Ashwath R,** Research scholar, Department of Commerce, Rani Channamma University, Belagavi, Email ID: ashwathashuu1@gmail.com

**** Dr. Sachindra G R,** Assistant Professor, Department of Commerce, Rani Channamma University, Belagavi, Email ID: sachindragr@gmail.com

Abstract

The banking system underscores the financial sector's pivotal role in fostering economic progress and development. Banks play a significant role by delivering crucial financial and liquidity services to diverse sectors and aiding in capital formations. Additionally, they are instrumental in implementing monetary policies to guide the economy. The evaluation of banks' financial performance is of paramount importance. Within India, the CAMELS model is utilized to appraise specific public and private sector banks across six critical parameters. An analysis spanning 2020 to 2023, based on data extracted from annual reports, scrutinizes HDFC Bank, ICICI Bank, Indian Overseas Bank (IOB), and UCO Bank. This study relies on average values of the CAMELS parameters in assessing these banks' financial performance. The outcome of the study reveals HDFC Bank's preeminence across all CAMELS parameters, closely pursued by ICICI Bank, with IOB Bank securing the third position. UCO Bank occupies the bottom rank. Moreover, a pronounced disparity in performance is evident, with private banks outperforming their public counterparts.

Keywords: Financial Performance, CAMELS Model, Capital Adequacy, Performance evaluation,

Introduction

The banking sector in India comprises a network of financial institutions, including banks and credit unions, that offer financial services to individuals, businesses, and the government. Acting as intermediaries between savers and borrowers, banks accept deposits, lend money, facilitate transactions, and provide various financial products such as savings accounts, loans, and credit cards. Moreover, they play a vital role in mobilizing savings from surplus economic units and fostering industrial development. The Reserve Bank of India (RBI) regulates the Indian banking system, serving as the banks' supervisory authority and significantly contributing to the country's development.

Assessing the financial performance of banks is crucial, and various methods are employed for this purpose. One such method is the CAMELS model, which is utilized internationally by regulatory banking authorities to evaluate financial institutions. This model originated in the 1970s and was initially developed by the three federal banking supervisors in the United States to summarize bank conditions during on-site examinations. CAMEL stands for Capital Adequacy, Asset Quality, Management, Earnings, Liquidity, and Sensitivity to Market Risk, forming the 'CAMELS' acronym. In India, commercial banks are rated using the CAMELS model based on recommendations from the Padmanabhan Committee. Banks are assigned a score from '1' to '5' for each component, and a final CAMELS rating is derived as a composite total of the component scores, representing the bank's overall financial condition.

The CAMEL rating system is based on five parameters, and the scoring scale ranges from 1 to 5. A rating of 1 indicates robust performance, soundness, and compliance with risk management practices. A rating of 2 signifies financial soundness with moderate weaknesses. A rating of 3 raises supervisory concern in several dimensions. A

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 08 Issue: 12 | Dec - 2024 SJIF Rating: 8.448 ISSN: 2582-3930

rating of 4 indicates unsound practices and serious financial problems, while a rating of 5 signifies fundamental unsoundness with inadequate risk management practices.

Review of literature

The CAMELS model has proven to be a versatile tool for assessing the financial performance of Indian banks, with researchers adopting various approaches and timeframes to analyze different aspects of the banking sector. **C. Dudhe (2018)** explored the period from 2013 to 2017, using 18 accounting ratios to rank banks based on CAMELS parameters. By employing a one-way ANOVA test to compute F-values, the study identified statistical variations in bank performance. Shifting to a focused case study, **Saji T.G. (2021)** assessed the Bank of Baroda's consistency using a weighted average to derive composite ratings for each CAMELS component. This method highlighted the bank's overall financial health and operational stability. Similarly, **Meraj Banu (2021)** took a broader view, examining the Indian banking sector's financial and operational performance from 2010 to 2019. Utilizing descriptive statistics, correlation analysis, and t-tests, this study provided a decade-long perspective on sector-wide trends and challenges. Delving into specific metrics, **K. Srinivasan (2021)** ranked banks by averaging CAMELS ratios and introduced the Gap ratio to evaluate Sensitivity to Market Risk, offering a focused approach to understanding risk dynamics. **Puja Kumari, Bharath et al. (2023)** analyzed the top five market-capitalized banks from 2017 to 2022, employing 11 CAMELS ratios to rank banks by their average parameter values, effectively showcasing the performance of industry leaders. **Jimmy Carter (2024)** provided a comparative analysis between SBI and Indian Bank over the same five-year period. Using the CAMELS model and the Interest Spread Ratio to gauge Sensitivity to Market Risk, the study revealed Indian Bank's stronger performance, emphasizing its operational superiority over SBI. Meanwhile, **Kantaraju B., Shobha et al. (2024)** compared two private and two public sector banks over nine years (2012–2021). This research employed simple averages, one-sample t-tests, and correlation tests to rank banks based on their financial activities, offering a balanced view of the private and public sectors. Together, these studies highlight the adaptability of the CAMELS framework in evaluating banking performance. They integrate diverse methodologies and insights to offer a comprehensive understanding of financial stability, risk management, and operational efficiency across Indian banks.

Objective of the study

1. To understand the financial performance of Indian Overseas Bank, UCO Bank, HDFC Bank and ICICI Bank by applying the CAMELS Approach
2. To conduct an assessment of the bank's financial performance and rank them based on the average value derived from the CAMELS model.

Methodology

The present study utilizes a descriptive research approach to assess the comparative performance of two private sector banks and two public sector banks in India through the CAMELS model analysis. The evaluation ranks the banks in ascending order based on the mean value of the CAMELS ratios and is supported by secondary data extracted from the annual reports of the selected banks over a three-year period from 2020-2021 to 2022-2023. The selection of public banks is predicated on government shareholding, while private banks are chosen based on their asset quality, revenue, and overall management. The study encompasses the following banks:

1. **Private sector Banks: HDFC BANK, ICICI BANK**
2. **Public sector Banks: Indian Overseas Bank, UCO Bank**

Analysis and Interpretation

1. **Capital Adequacy Ratio**

Capital adequacy is the most significant factor in the Basel Framework, it helps to review the capacity of a balancing company to absorb unforeseen and unexpected losses that arise due to various risks like credit risk, market risk, and operational risks in the banking sector and helps to maintain sufficient amount of capital. The capital adequacy ratio helps to create the link between the capital of the bank and its risk-weighted assets and current liability. A strong Capital adequacy shows the good strength of the bank. The present study has used the following ratios to analyze capital adequacy

(i) **Capital Adequacy Basel III (CAR)**
(ii) **Advances to Assets Ratio**
(iii) **Leverage Ratio**

Table 1.1 Capital Adequacy

	CAR				AAR				LR			
	IOB	UCO	HDFC	ICICI	IOB	UCO	HDFC	ICICI	IOB	UCO	HDFC	ICICI
2020-21	15.32	13.71	18.8	19.12	46.61%	40.00%	65%	59.63	16.17%	12.66%	8.57%	8.34%
2021-22	13.83	13.74	18.9	18.34	48.18%	45.85%	66%	60.86	13.01%	11.34%	8.61%	8.28%
2022-23	16.1	16.51	19.3	18.87	49%	51.80%	65%	64.34	12%	11.67%	8.80%	8.00%
Average	15.08	14.65	19	18.87	47.93%	47.21%	65.33%	61.61%	13.72	11.89	8.66	8.20
Rank	3	4	1	2	3	4	1	2	4	3	2	1

Source : Annual reports

Table 1.1 presents the Capital Adequacy Ratio, Advance-to-Asset Ratio, and Leverage Ratio for Indian Overseas Bank, UCO Bank, HDFC Bank, and ICICI Bank from 2020-2021 to 2022-23. The average Capital Adequacy Ratio for all banks exceeds 9%, signifying their capacity to meet contingent liabilities. HDFC Bank leads with a CAR of 19%, followed by ICICI Bank with 18.87%, Indian Overseas Bank with 15.08%, and UCO Bank with 14.65%. Regarding the Advance-to-Asset Ratio, HDFC Bank boasts the highest average value at 65.33%, followed by ICICI Bank at 61.61%, Indian Overseas Bank at 47.93%, and UCO Bank at 47.31%. The Leverage Ratio standings are as follows: ICICI Bank holds the top position with a value of 8.20, followed by HDFC Bank and UCO Bank, with Indian Overseas Bank in the final position.

2. **Asset Quality**

Asset quality measures the health of the assets of a banking company. The percentage of Non-Performing Assets (NPA) is analyzed under asset quality. A higher NPA represents a lower quality of the loans banks give, and poor asset quality can be a big threat to banks in the long run. The present study has used the following ratios to analyze Asset Quality.

i. **Gross NPA Ratio**
ii. **Net NPA Ratio**
iii. **Total Investment to Total Asset Ratio**

Table 1.2 : Asset Quality

	GNPA				NNPA				TITA			
	IOB	**UCO**	**HDFC**	**ICICI**	**IOB**	**UCO**	**HDFC**	**ICICI**	**IOB**	**UCO**	**HDFC**	**ICICI**
2020-21	**11.69**	**9.59**	**1.13**	**5.33**	**3.58**	**3.94**	**0.40**	**1.24**	**34.85**	**37.01**	**24.3**	**22.26**
2021-22	**9.82**	**7.89**	**1.17**	**3.76**	**2.65**	**2.70**	**0.32**	**0.81**	**32.79**	**36.17**	**21.16**	**21.98**
2022-23	**7.44**	**4.89**	**1.12**	**2.87**	**1.83**	**1.29**	**0.27**	**0.51**	**30.01**	**31.63**	**20.21**	**22.87**
Average	**9.65**	**7.45**	**1.14**	**3.99**	**2.67**	**2.64**	**0.33**	**0.85**	**32.55**	**34.94**	**21.89**	**22.37**
Rank	**4**	**3**	**1**	**2**	**4**	**3**	**1**	**2**	**3**	**4**	**1**	**2**

Source: Annual reports

Gross Non-Performing Asset (NPA), Net NPA, and Total Investment to Total Asset Ratio of Indian Overseas Bank, UCO Bank, HDFC Bank, and ICICI Bank are displayed in Table 1.2. A lower NPA rate indicates the banks' strong performance. The ranking is displayed using the Gross NPA ratio and the average value computed in Table 1.2. With the lowest Gross NPA Ratio of 1.14%, HDFC Bank is in first place. ICICI Bank, UCO Bank, and 7.45% are next. With a rate of 9.65%, IOB is ranked last. Out of the three banks, HDFC manages Gross Non-Performing Assets (NPAs) more effectively and has a superior lending strategy. The lower percentage of the total investment to total asset ratio indicates the banks' strong performance. the average figure is determined in Table 1.2, which uses the Total Investment to Total Asset Ratio to rank the institutions. With a total investment to total asset ratio of 21.89%, HDFC Bank leads the field. It is followed by ICICI Bank, IOB Bank with respective ratios of 22.7 percent and 32.55%. UCO, with a rate of 34.94, comes in last.

3. **Management Efficiency**

Management efficiency overviews how effectively administrative policies and practices are framed to generate income for a banking company. Higher managerial efficiency indicates a lesser chance of making the wrong decision. Management efficiency includes the Board of Directors and the Senior Executives. The strength of management efficiency is reflected in policies and practices adopted by the banking company. In this present study, Management efficiency is measured using the following ratios.

i. **Credit Deposit Ratio**
ii. **Business Per Employee**

Table 1.3 : Management Efficiency(in percentage)

	CRD				BPE			
	IOB	**UCO**	**HDFC**	**ICICI**	**IOB**	**UCO**	**HDFC**	**ICICI**
2020-21	**53.15**	**54.07**	**88.87**	**78.68**	**162.2**	**147**	**193**	**149.2**
2021-22	**50.02**	**54.79**	**91.2**	**80.69**	**189.9**	**163.3**	**202.5**	**166.9**
2022-23	**6.24**	**62.51**	**88.27**	**86.34**	**202.1**	**189**	**197.4**	**170.9**
Average	**57.14**	**57.12**	**89.44**	**81.90**	**183.4**	**166.43**	**197.63**	**162.26**
Rank	**3**	**4**	**1**	**2**	**2**	**3**	**1**	**4**

Source: Annual reports

Table 1.3 presents the credit deposit ratio and business per employee ratio for Indian Overseas Bank, UCO Bank, HDFC Bank, and ICICI Bank. A larger business per employee ratio indicates a bank's strong performance, while a lower ratio indicates weak performance of bank. The top three banks with the greatest credit deposit ratios are HDFC Bank at 89.44%, ICICI Bank at 81.90%, and IOB Bank at 57.13%. Ranking lowest, UCO has a rate of 57.12%. and The bank's ability to produce more deposits and advances by hiring the right number of employees is demonstrated by the business per employee ratio. The average business per employee ratio is best for banks with larger ratios. HDFC Bank has the greatest ratio at 197.63 million, Indian Overseas Bank has 183.4 million, and UCO Bank has 166.43 million, while ICICI Bank has the lowest at 162.26 million. First place went to HDFC Bank, and the final places went to IOB, UCO Bank, and ICICI.

4. **Earnings**

Earning ability explains the profitability of a banking company, it evaluates the earning capacity of the banks to survive in the long run. Earning indicates the degree of efficiency of banking companies in managing, directing, and profitably controlling business activities. Earning Ability relies on management activities, interest rate policies of the bank, and provisions made on earnings. In this present study, Earning Capacity is calculated using the following ratios.

i. **Return on Asset**
ii. **Operating Profit to Average Working Fund**

Table 1.4: Earnings(in percentage)

	ROA				OPAVF			
	IOB	**UCO**	**HDFC**	**ICICI**	**IOB**	**UCO**	**HDFC**	**ICICI**
2020-21	**0.27**	**0.06**	**1.97**	**1.42**	**2.14**	**1.46**	**3.62**	**3.33**
2021-22	**0.659**	**0.34**	**2.03**	**1.84**	**1.98**	**1.75**	**3.53**	**3.1**
2022-23	**0.76**	**0.64**	**2.07**	**2.16**	**1.91**	**1.45**	**3.31**	**3.2**
Average	**0.54**	**0.34**	**2.02**	**1.8**	**2.01**	**1.55**	**3.48**	**3.21**
Rank	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**

Source : Annual reports

Table 1.4 shows The Operating Profit to Average Working fund ratio and Return on Assets ratio for Indian Overseas Bank, UCO Bank, HDFC Bank, and ICICI Bank. The Operating Profit to Average Working fund ratio shows the effectiveness with which the bank generates profits on invested capital is demonstrated by this ratio. For the bank, a larger ratio is desirable. Among the banking institutions included for the study, HDFC Bank has the highest average return on assets ratio at 2.02 percent, followed by ICICI Bank at 1.80 percent, Indian Overseas Bank at 0.54 percent, and UCO at 0.34 percent. ICICI, IOB Bank, UCO Bank, and HDFC Bank came in last, third, and fourth, respectively. Additionally, the ratio of operating profit to average working fund indicates the amount of operational profit a bank makes from an average working fund. A greater ratio is beneficial to the bank. This ratio is found at 3.48 percent for HDFC Bank, 3.21 percent for ICICI Bank, and 2.01 percent for Indian Overseas Bank; the lowest ratio is found at 1.55 percent for UCO. Of the banks that were chosen for the research, HDFC Bank ranked first, followed by ICICI, IOB, and UCO banks in order of ranking.

5. **Liquidity**

The capacity to fulfill one's commitments when they become due is known as liquidity (Puja 2023), it is also known as asset/liability management. Liquidity is helps to measure the bank's capacity to meet surprise claim of its financiers. Liquidity risks are affecting the performance and reputation of the banking company. Trend and stability of deposits are also affecting factors of liquidity. In this study The following ratios are used to measure the liquidity.

i. **Cash -Deposits Ratio**
ii. **Term deposit to Total Deposit Ratio**

Table 1.5 : Liquidity(in percentage)

	CDR				TDTD			
	IOB	UCO	HDFC	ICICI	IOB	UCO	HDFC	ICICI
2020-21	5.07	4.58	7.29	4.93	57.48	60.84	53.88	53.71
2021-22	8.64	4.59	8.22	10.29	56.56	60.57	51.83	51.3
2022-23	6.57	4.13	6.22	5.8	56.25	63.21	55.61	62.81
Average	6.77	4.58	7.24	7	56.76	61.54	53.77	55.94
Rank	3	4	1	2	3	4	1	2

Source: Annual reports

In the presented table, the Cash-Deposits Ratio and Term Deposits to Total Deposits Ratio for Indian Overseas Bank, UCO Bank, HDFC Bank, and ICICI Bank are depicted. These ratios reflect the proportion of cash in hand and balances to total deposits, serving as indicators of the available liquid funds in the banks resulting from deposits. According to the provided Table 1.5 , HDFC Bank demonstrates the highest average Cash-Deposits Ratio at 7.24%, followed by ICICI Bank at 7.00%, and Indian Overseas Bank at 6.77%, with UCO Bank showing the lowest ratio at 4.58%. The banks are ranked accordingly, with HDFC Bank leading, followed by ICICI Bank, Indian Overseas Bank, and UCO Bank. Furthermore, the Term Deposits to Total Deposits ratio, which portrays the proportion of liquid funds required to meet fixed deposit obligations, is also evaluated. A higher ratio implies a reduced need for liquid funds, whereas a lower ratio indicates a greater necessity for such funds. Based on the data from Table 1.5 the average Term Deposits to Total Deposits ratio is greatest for HDFC Bank at 53.77% and ICICI Bank at 55.94%, succeeded by Indian Overseas Bank at 56.76%, and lowest for UCO Bank at 61.54%. Ultimately, HDFC Bank is positioned first, followed by ICICI Bank and Indian Overseas Bank, with UCO Bank occupying the last position within the scope of the analysis.

6. Sensitivity

Sensitivity to market risk is one of the important measurement areas in the financial analysis of banking companies. Sensitivity analysis reflects institutions' exposure to interest rate risk, foreign exchange volatility, and equity price risk (Vijay Sukla 2021). Sensitivity to market risks helps banking company to frame appropriate strategies, policies and plans to make protection against unexpected risks. In this study GAP ratio is uses to measure the sensitivity ratio.

Table 1.6 : Sensitivity

	GAP RATIO(in %)			
	IOB	**UCO**	**HDFC**	**ICICI**
2020-21	**96.79**	**93.69**	**107.88**	**103.09**
2021-22	**93.73**	**94.87**	**105.32**	**104.81**
2022-23	**96.7**	**93.27**	**104.06**	**107.51**
Average	**95.74**	**93.94**	**105.75**	**105.13**
Rank	**3**	**4**	**1**	**2**

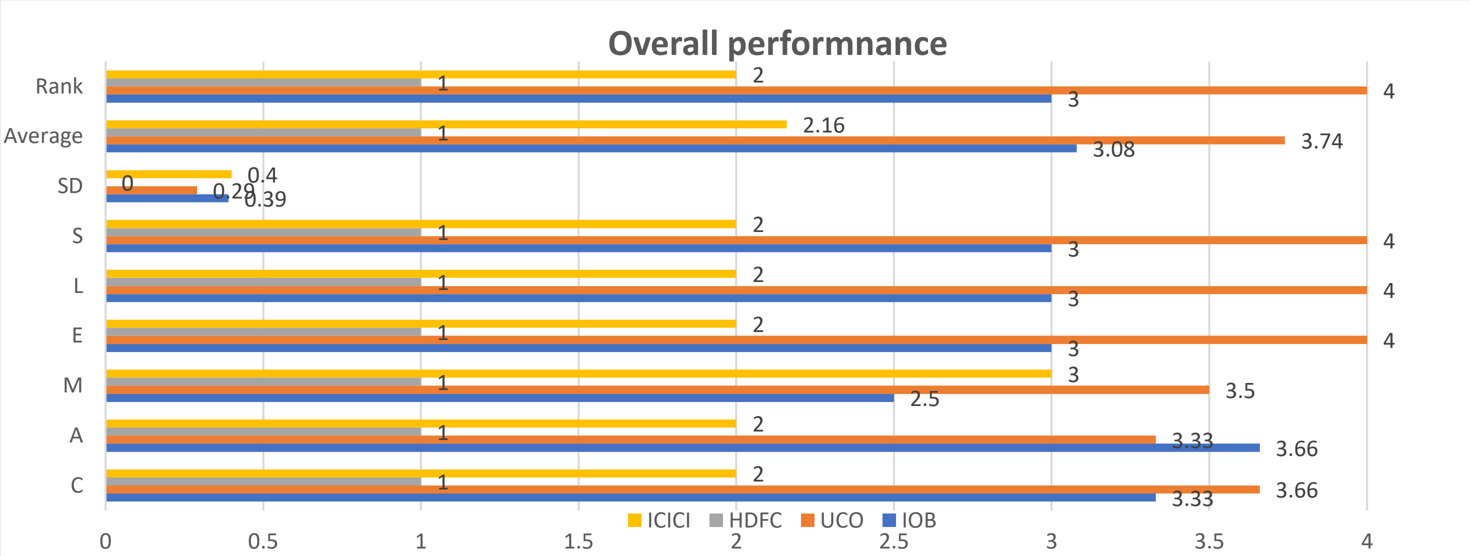
Source : Annual reports

In table 1.6, the Gap ratios of Indian Overseas Bank, UCO Bank, HDFC Bank, and ICICI Bank are presented. This ratio signifies the proportion of risk-sensitive assets to risk-sensitive liabilities. A higher ratio is indicative of a more favorable position for the bank. The average Gap ratios are highest for HDFC Bank at 105.75 percent, ICICI Bank at 105.13 percent, and Indian Overseas Bank at 95.74 percent, with the lowest ratio recorded for UCO Bank at 93.74 percent. Among the banking entities included in the study, HDFC Bank secured the top rank, followed by ICICI Bank, Indian Overseas Bank, and UCO Bank.

Table 1.7 : Overall performance

Sl.No.	**Bank**	**C**	**A**	**M**	**E**	**L**	**S**	**SD**	**Average**	**Rank**
1	**IOB**	**3.33**	**3.66**	**2.5**	**3**	**3**	**3**	**0.39**	**3.08**	**3**
2	**UCO**	**3.66**	**3.33**	**3.5**	**4**	**4**	**4**	**0.29**	**3.74**	**4**
3	**HDFC**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**1**	**1**
4	**ICICI**	**2**	**2**	**3**	**2**	**2**	**2**	**0.40**	**2.16**	**2**

Figure 2.1: Graphical Representation of Overall Performance



The table presents the Composite or Overall Average of CAMELS for Indian Overseas Bank, UCO Bank, HDFC Bank, and ICICI Bank. Figure 2.1 features a graph based on the average value and standard deviation of the CAMELS ratios, reflecting the measurement of capital adequacy, asset quality, management effectiveness, earning capability, and sensitivity. A higher average score denotes a lower rank for the banks, while the standard deviation serves to indicate the variations between the CAMELS ratios. Indian Overseas Bank demonstrates a moderate performance across all criteria with an average score of 3.08 and a standard deviation of 0.39, positioning it at rank 3. UCO Bank exhibits strong performance across all criteria, securing the highest average score of 3.74 among the four banks, with a low standard deviation of 0.29. HDFC Bank scores the lowest in all criteria, yielding an average score of 1 and a standard deviation of 0. Despite this, HDFC Bank is recognized as 1st in rank, an outcome that suggests the ranking may consider additional factors beyond those reflected in the table or a different interpretation of the scoring system. ICICI Bank presents a mixed performance, with scores varying significantly across criteria, resulting in a standard deviation of 0.40 and an average score of 2.16, placing it at rank 2. The relatively higher variability in scores indicates some areas of strength and others necessitating improvement. The table illustrates the comparative performance of the banks, with HDFC Bank securing 1st rank despite low scores, indicating unique factors influencing the ranking, and UCO Bank, possessing the highest average score, yet securing 4th rank, suggesting a complex evaluation process.

Findings

The analysis focused on comparing the financial performance of HDFC Bank, ICICI Bank, UCO Bank, and Indian Overseas Bank using the CAMELS model. HDFC Bank exhibited the highest Capital Adequacy Ratio (CAR) at 19%, surpassing ICICI Bank with 18.87%. Conversely, UCO Bank and Indian Overseas Bank demonstrated comparably lower CARs at 14.65% and 15.08%, respectively. Regarding Asset Quality, HDFC Bank showcased the lowest Gross Non-Performing Assets (NPA) ratio at 1.14%, signifying superior asset quality. In contrast, ICICI Bank revealed a Gross NPA ratio of 3.99%, whereas Indian Overseas Bank and UCO Bank reported higher Gross NPA ratios, indicating relatively inferior asset quality. Analyzing Management Efficiency, HDFC Bank demonstrated an average Credit Deposit Ratio (CRD) of 89.44% and a Business Per Employee (BPE) ratio of 197.63 million, closely followed by ICICI Bank. Conversely, Indian Overseas Bank and UCO Bank displayed comparatively lower efficiency. Evaluating Earnings performance, HDFC Bank led with an average Return on Assets (ROA) of 2.02% and an Operating Profit to Average Working Fund (OPAVF) ratio of 3.48%, with ICICI Bank also showing robust performance. In contrast, Indian Overseas Bank and UCO Bank exhibited weaker earnings metrics. In terms of Liquidity, HDFC Bank demonstrated a Cash-Deposits Ratio (CDR) of 7.24% and a Term Deposits to Total Deposits (TDTD) ratio of 53.77%, with ICICI Bank also exhibiting strong liquidity. However, Indian Overseas Bank and UCO

Bank require improvements in this arena. An in-depth analysis of the Sensitivity parameter revealed that HDFC Bank maintains the highest Gap ratio at 105.75%, reflecting effective management of market risk, with ICICI Bank also performing well, while Indian Overseas Bank and UCO Bank displayed lower sensitivity ratios. Based on the CAMELS parameters, HDFC Bank secured the top ranking, closely followed by ICICI Bank, while Indian Overseas Bank and UCO Bank secured lower rankings.

Suggestions

The CAMELS parameter serves as a critical yardstick for evaluating the financial strength of a financial institution. This study has unveiled the subpar financial performance of public sector banks compared to their private sector counterparts. Across all CAMELS parameters, Public banks have demonstrated an inability to match the performance levels of their Private sector counterparts. Consequently, it is evident that Public Banks need to enhance their financial performance in order to compete with Private sector Banks effectively. In particular, IOB and UCO Banks would benefit from prioritizing improvements in capital adequacy, asset quality, management efficiency, profitability, and liquidity to ensure sustained financial stability. Conversely, HDFC and ICICI Bank should maintain their current performance levels and concentrate on implementing sustainable growth strategies to uphold their market leadership, while also ensuring robust risk management practices to mitigate potential financial risks.

Conclusion

The current study is centered on the financial performance assessment of two Public sector banks and two Private sector banks over three years spanning from 2020 to 2023. The analysis indicates that HDFC Bank consistently takes the lead across various parameters, exhibiting robust capital adequacy, asset quality, management integrity, earnings consistency, and liquidity. Following closely is ICICI Bank, demonstrating strong performance in similar aspects. Indian Overseas Bank and UCO Bank, while demonstrating satisfactory performance, rank lower due to comparatively weaker performance in certain areas. The study suggests that public sector banks should concentrate on enhancing their asset quality and management efficiency, while both public and private sector banks should strive for improved liquidity management to ensure stability in the face of financial uncertainties. Regular evaluation employing the CAMELS model can aid in identifying areas for improvement and elevating overall bank performance.

Reference

01. Acharya, Kabi & Vyas, Surendra. (2022). Evaluation of financial strength of joint venture commercial banks and domestic commercial banks in nepal: using camels framework. The International Research Journal of Management Science. 7. 28-41. 10.3126/irjms.v7i1.50619.

02. Banu, Meraj & Vepa, Sudha. (2021). A Financial Performance of Indian Banks Using CAMELS Rating System. Journal of Contemporary Issues in Business and Government. 27. 2135-2153.

03. Jamil, Syed Ahsan & Alshubiri, Faris & Fattouh, Ibrahim. (2016). The Effect of CAMELS Model on Bank Efficiency Ratio: An Empirical Evidence of Banking Sector Listed on Muscat Security Market. Il Ponte. 72. 121-136. 10.21506/j.ponte.2016.5.14.

04. Jawarneh, Saleh. (2022). Determinants of Financial Performance of Commercial Banks in Jordan: Application of CAMELS Model. Theory, Methodology, Practice. 18. 75-82. 10.18096/TMP.2022.01.06.

05. Jothr, Osama Abdulsalam & Abed Hameed, Ayad & Mohaisen, Hussein. (2021). CAMELS Model and its Impact on the Evaluation of Banking Performance A LITERATURE REVIEW. 129. 533-543. 10.31272/JAE.44.2021.129.A2.

06. Kumar, Vinod & Malhotra, Bhawna. (2017). A CAMEL MODEL ANALYSIS OF PRIVATE BANKS IN INDIA. EPRA International Journal of Economic and Business Review. 5. 87-93.

07. Malaiselvam, N & Balasubramaniam, M. (2023). A Study on Financial Performance of Selected Private Sector Banks in India- A Camel Approach. ComFin Research. 11. 16-25. 10.34293/commerce.v11i1.5700.

08. Nguyen, Kim. (2021). Determinants of bank performance in Vietnamese commercial banks: an application of the camels model. Cogent Business & Management. 8. 10.1080/23311975.2021.1979443.

09. Rostami, Malihe. (2015). Determination of Camels model on bank's performance. International Journal of Multidisciplinary Research and Development. 2. 652-664.s

10. Sangmi, Prof & Nazir, Dr. (2010). Analyzing Financial Performance of Commercial Banks in India: Application of CAMEL Model. Pakistan Journal of Commerce and Social Sciences. 4.

11. Sanjeevinathan, Rajarajeswari & Krishnan, Srinivasan. (2021). Financial Performance of Selected Banks using Camels Model. International Journal of Advance Research in Computer Science and Management. VOLUME NO. 11 (2021), 1.