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Research Paper

A study of Risk Management on Private and Public Sector Banks in India

Ranu Agrawal
Nims University, Jaipur Rajasthan, India

Dr.S.Maria Antonyraj
Associate Professor
Mr. Suraj Kumar
Research Scholar
Department of Commerce and Management
Nims Institute of Management and Commerce
NIMS University,
Rajasthan, Jaipur.

***Abstract**: This research paper aims to examine the impact of risk management on the performance of private and public sector banks in India. Effective risk management is crucial in mitigating risks and improving bank performance. The study utilizes the CAMELS approach, a rating system that analyses various ratios to evaluate bank performance. The ratios considered in the study include capital adequacy ratios, asset quality ratios, management capability ratios, earnings quality ratios, liquidity ratios, and sensitivity to market risk. The analysis covers the period from 2018 to 2022, and descriptive statistics are employed to analyse the results. Additionally, correlation and t-tests are conducted to test the research hypotheses.*
***Keywords:** CAMELS rating system, State Bank of India, ICICI Bank ,Ratio analysis.*

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I. INTRODUCTION

Banking plays a crucial role in the economic development of modern society. The term "bank" refers to a repository for money or a financial institution that handles various activities related to money management (Kapoor, 2004). Commercial banks are distinct from other financial institutions due to their primary functions, which include maintaining deposit accounts such as current accounts, issuing and processing cheques, and facilitating cheque collection for their customers. In order to ensure the long-term success of a banking organization, effective risk management should be an integral part of its overall risk management strategy. A robust risk management framework is essential for maintaining a high-quality portfolio of performing assets. This research study adopts the CAMELS approach, which utilizes a composite rating scale ranging from 1 (best) to 5 (worst).

The CAMELS approach serves as a regulatory and supervisory tool for evaluating and controlling the performance of banks.©The components of CAMELS are:
(C) Capital adequacy
(A) Assets
(M) Management capability
(E) Earnings
(L) Liquidity
(S) Sensitivity

II. LITERATURE REVIEW

Banu M (2019) conducted a study to examine the operational efficiency of public, private, and foreign banking sectors in India. The results emphasized a strong relationship among the three sectors regarding return

on investments, equity, and profitability. The cash-deposit ratio and credit-deposit ratio positively influenced short-term liquidity, while the net interest margin and investment ratios did not significantly affect solvency across the sectors.
Kiran (2018) evaluated the financial health of seven public sector banks and four private sector banks using the CAMEL approach for the period 2013-2017. The study revealed that private sector banks performed better in terms of capital adequacy, asset quality, management capability, and earnings quality, while public sector banks performed well in terms of liquidity.
Chaudhari (2018) compared the performance of SBI and ICICI banks using CAMEL ratings from 2011-2012 to 2015-2016. The study found that ICICI bank outperformed SBI in terms of profitability and management during the mentioned period.
Veena and Patti (2017) reviewed the pre and post-merger performance of ICICI Bank using the CAMEL rating approach. The study found improvements in capital adequacy and asset quality in the pre-merger period, but efficiency and earning quality did not reflect the bank's ability in the post-merger period.
Muralidhar P. and Chokka Lingam (2017) studied five nationalized banks from 2011 to 2016 and found that the Central Bank of India ranked first in three out of six aspects covered in the CAMELS acronym.
Maninderkaur and Ritu Priya (2017) analyzed Bank of Baroda and Punjab National Bank using the CAMELS model from 2012 to 2016. The t-test measure indicated that Punjab National Bank performed less well in terms of profitability compared to Bank of Baroda.
G.L Meena (2016) analyzed commercial banks using the CAMELS approach, focusing on the impact of "return on assets" on dependent variables.
Mohammad Kamrul Ahsan (2016) examined Islamic banks in Bangladesh and found that all three banks performed well across all aspects covered in the CAMELS acronym.
Aspal and Dhawan (2016) reviewed the financial performance of the banking sector using the CAMEL approach and investigated each parameter through empirical investigation.
Hari Krishna Karri, Kishore Meghani, Bharati Meghani Mishra (2015) compared the financial performance of Bank of Baroda and Punjab National Bank using the CAMEL model. The analysis, supported by a t-test, indicated that Bank of Baroda had a slightly higher performance rating than Punjab National Bank.
Dipesh B Nathwani (2015) examined public and private sector banks, including State Bank of India, Bank of Baroda, Punjab National Bank, Axis Bank, HDFC Bank, and ICICI Bank. The study, conducted from 2005 to 2015, concluded that banks in the private sector were more profitable than those in the public sector based on various profitability ratios.
Karthikeyan P, Shangari B (2014) researched the top six private sector banks based on the CAMEL rating system. The study, conducted from 2009 to 2013, concluded that HDFC Bank was the most sought-after and efficient bank in the private sector.

III. RESEARCH METHODOLOGY

Significance of the Study

Effective risk management is vital for the success and stability of a banking institution. It ensures profitability, enhances efficiency, and promotes stability in wages. Regulators also emphasize the importance of risk management to maintain the overall safety and soundness of the financial system. However, it is observed that the risk management practices of banks have not kept pace with the rapid changes in the financial markets.
Bank risk refers to the potential loss that a bank may face as a result of various events. Key risks in banking include credit risk, interest rate risk, market risk, liquidity risk, and operational risk.
Based on the present study, several recommendations are suggested:

- Increasing the number of shareholders by focusing on value creation, value saving, and providing useful services.
- Enhancing capital allocation practices.
- Improving the identification and assessment of portfolios and applications.
- Gaining a comprehensive understanding of key business processes.
- Safeguarding and enhancing the reputation of the company.

Need of the Study

The importance of banks responding to many risks and difficulties posed by:
- Globalization
- Integration and acquisition
- Regulatory changes
- Increasing competition in the banking sector in India.

- Increased prosperity in banking operations, recorded trading funds, online banking, payment services have made disaster management more difficult and necessary.

OBJECTIVE OF THE STUDY

- To assess and evaluate the financial performance of two Public Sector Banks and two Private Sector Banks in India for the period of 2018-2022.
- To rank the selected Public Sector and Private Sector Banks based on the CAMEL parameters, which include Capital Adequacy, Asset Quality, Management Capability, Earnings Quality, and Liquidity.
- To provide insightful findings, recommendations, and conclusions based on the study's analysis and observations.
- To examine and understand the various types of risks that banks encounter in their operations.

HYPOTHESIS

Ha1: there is no significant difference in financial performance of select banks.
Ha2: there is significant difference between in financial performance of select banks.

Scope of the study

The study is undertaken to examine the two major public sector banks and the two major private sector banks.

Research Design

The CAMEL model is a ratio-based approach utilized to assess the performance of banks by evaluating various criteria such as Capital Adequacy, Asset Quality, Management Quality, Earnings, and Liquidity. This study adopts a descriptive research approach with an analytical research design to examine these aspects.

SOURCES OF DATA

Data collected for the study are secondary. They have been collected from the Statistical Tables relating to banks in India from the year 2018 till 2022 cited on the official website of R.B.I, Annual Reports of sample banks from the year 2018-22 and IBA Bulletin. The study uses a sample of 2 Public Sector and 2 Private Sector banks, which later ranks the average value of CAMEL parameters for years (2018-2022).The study applies the Composite Index rating, which gives an average of all the ranks of different CAMEL parameters and determines the best performing bank.

IV. DATA COLLECTION AND ANALYSIS

Sampling

In this study two private and two public sector banks in India have been analyse for the purpose of the study.

Data Analysis Techniques

Statistical Tool

Ratio Analysis, and Descriptive Statistics only.

Data Collection

Secondary Sources of data collection have been used, viz. journals, IBA bulletin, statistics published by Reserve bank of India and annual reports published by the banks.
The following ratios considered for the CAMELS rating system:

Capital adequacy

The capital adequacy ratio (CAR) is a crucial measure that indicates a bank's ability to withstand unexpected losses. Regulators closely monitor the CAR to ensure the safety of depositors' funds and assess the bank's capacity to absorb potential losses.
The formula to calculate the CAR is as follows:
CAR = (Tier 2 Capital + Tier 1 Capital) / Risk-Weighted Assets
Tier 2 Capital consists of hybrid debt, subordinated debts, undisclosed reserves, and general loss reserves. These components contribute to the bank's overall capital buffer.
Tier 1 Capital includes paid-up capital, disclosed free reserves, and statutory reserves. From this sum, other items such as equity investments, intangible assets, and any current or brought forward losses are subtracted.
According to the guidelines set by the Reserve Bank of India (RBI), banks are required to maintain a minimum CAR of 9%. This minimum threshold ensures that banks have sufficient capital to absorb potential losses and maintain stability.
By monitoring the CAR, regulators can ensure the safety of deposited funds and assess the bank's ability to withstand adverse situations. Maintaining an adequate CAR is vital for banks to safeguard depositors' money and strengthen their resilience in the face of financial challenges.

Asset Quality Ratios

This parameter evaluates the default, or the credit risk involved with a particular asset of the banks.
Percentage of Net NPA: Net NPA/ Net Advances
In this measure the provisions of non-performing assets are subtracted from the gross non-performing assets to arrive at the net NPA.
Percentage of Gross NPA: Gross NPA/ Net Advances
The deductions in the form of provisions are not considered and the gross figures are used. The lower the ratio the better it is.

Management Capability Ratios
The Management Capability ratios within the CAMELS framework provide valuable insights into the efficiency and effectiveness of a bank's management practices. These ratios are subjective in nature, as they involve evaluating various aspects of the bank's operations and decision-making.
Earnings Quality Ratios
By focusing on profitability and continuously improving earning potential, banks can enhance their financial stability, attract investors, and ensure their long-term success in a competitive banking industry.
Liquidity Ratios
The ability of a bank to meet its short-term obligations plays a significant role in determining its overall success. Liquidity issues or the failure to fulfill immediate obligations can jeopardize the bank's existence and potentially damage its reputation.

Sensitivity to Market Risk Ratios
Negative fluctuations in interest rates, foreign exchange rates, and stock prices can adversely impact the income and earnings potential of banks.
The below tables states the calculations of camels' analysis for all the selected banks-

TABLE -1
CAPITAL ADEQUACY RATIO

	CAPITAL ADEQUACY RATIO			
YEAR	**SBI**	**CBI**	**HDFC**	**ICICI**
2018	12	9	15	16
2019	12	9	17	17
2020	13	11.72	18	16
2021	13	14.81	18	19
2022	13	13.8	18	19
MEAN	**12.6**	**11.6**	**17.2**	**17.4**
RANK	**3**	**4**	**2**	**1**

Analysis and discussion
IT is observed that selected banks maintain the CAR at predetermined rate of 9% established by RBI. It was found that ICICI and HDFC bank hold rank 1 and 2 respectively with significantly good consistency, whereas the public sector SBI and CBI hold 3rd and 4th rank respectively, were found to be satisfied.

TABLE -2
ASSETS QUALITY RARTIO

ASSETS QUALITY RATIO				
YEAR	**SBI**	**CBI**	**HDFC**	**ICICI**
2018	6	11	2	5
2019	3	8	2	2
2020	2	8	0	2
2021	4	5.77	0.4	3
2022	3	3.97	0.3	4
MEAN	**3.6**	**7.34**	**0.94**	**3.2**
RANK	**3**	**4**	**1**	**2**

Analysis and discussion

The Asset Quality evaluated by using the Net Non-Performing Assets to Net advances ratio, the bank is required to implement necessary credit risk management techniques and strictly follow the provisions to cover the loss arising due to NPA. As per the guidelines of RBI it should be less than 3 percent for effective management of asset quality. The table 2 presents the analysis HDFC bank secured first rank by significantly performing better in maintaining the average asset quality as well as consistency, followed by ICICI, SBI and CBI banks.

TABLE-3
MANAGEMENT QUALITY RATIO

MANAGEMENT QUALITY RATIO				
YEAR	**SBI**	**CBI**	**HDFC**	**ICICI**
2018	4.36	4.56	6.61	3.88
2019	4.19	4.83	4.49	3.96
2020	4.02	4.66	4.43	4.04
2021	3.48	4.04	3.51	3.46
2022	3.08	3.56	2.99	2.95
MEAN	**3.82**	**4.33**	**4.40**	**3.65**
RANK	**3**	**2**	**1**	**4**

Analysis and Discussion

The analysis of management efficiency was evaluated by taking the average profit margin, interest expended with capital employed .The HDFC bank is found to have the higher ratio with consistency in performance whereas the CBI ranked 2nd in management efficiency but with less consistency in performance. TheSBI bank ranked 3rd in efficiency and moderate in consistency. On the other hand,ICICI ranked 4rth with high inconsistency in efficiency and performance.

TABLE- 4
EARNINGS RATIO - ROA

EARNINGS RATIO=ROA				
YEAR	**SBI**	**CBI**	**HDFC**	**ICICI**
2018	0.04	0.01	0.01	0.1
2019	0.04	0.01	0.01	0.1
2020	0.04	3.15	0.01	0.1
2021	0.5	-1.58	1.8	1.2
2022	0.7	0.30	1.8	1.4
MEAN	**0.264**	**0.378**	**0.726**	**0.58**
RANK	**4**	**3**	**1**	**2**

ANALYSIS AND DISCUSSION:

Above table show the net profit to total assets for banks. It is referred from the table that HDFC secure 1st position followed by ICICI and CBI bank 2nd& 3rd rank respectively. SBI bank gets 4th rank on net profit to total assets ratio.

TABLE-4.1
EARNINGS RATIO-ROE

EARNINGS RATIO=ROE				
YEAR	**SBI**	**CBI**	**HDFC**	**ICICI**
2018	4.68	1.94	35.7	7.08
2019	3.45	1.39	41.2	4.41
2020	12.3	0.19	50	8.53
2021	8.1	-6.44	15.2	11.7
2022	11.6	4.49	15.4	13.8
MEAN	**8**	**0.314**	**31.5**	**9.1**
RANK	**3**	**4**	**1**	**2**

Analysis Discussion

Above table show the net profit to own capital for banks. It is inferred from the table HDFC bank is performing well on above net profit to own capital. HDFC bank gets top position followed by ICICI and SBI bank 2nd and 3rd rank respectively. CBI bank gets 4thrank respectively on net profit to own capital.

TABLE 4.2
COMPOSITE EARNING EFFICIENCY

Composite Earning Efficiency				
BANKS	**ROA**	**ROE**		
	RANKS	**RANKS**	**AVG**	**GROUP RANK**
SBI	4	3	**3.5**	**1**
CBI	3	4	**3.5**	**2**
HDFC	1	1	**1**	**4**
ICICI	2	2	**2**	**3**

TABLE -5
LIQUIDITY RATIO

LIQUIDITY RATIO				
YEAR	**SBI**	**CBI**	**HDFC**	**ICICI**
2018	0.71	0.53	0.91	0.96
2019	0.73	0.51	0.91	0.98
2020	0.74	0.48	0.92	0.95
2021	0.69	0.47	0.89	0.91
2022	0.67	0.48	0.90	0.85
MEAN	**0.70**	**0.49**	**0.90**	**0.93**
RANK	**3**	**4**	**2**	**1**

COMPOSITE RANKING (OVERALL PERFORMANCE) OF BANKS

BANKS	**C**	**A**	**M**	**E**	**L**	**AVG**	**RANK**
SBI	12.6	3.6	1.33	3.5	0.70	**4.346**	**4**
CBI	11.6	7.34	1.14	3.5	0.49	**4.814**	**3**
HDFC	17.2	0.94	3.30	1	0.90	**5.9**	**1**
ICICI	17.4	3.2	2.82	2	0.93	**5.27**	**2**

Analysis and Discussion

The performance of select banks by using the average CAMELS ratio. It is observed that HDFC secured first rank followed by ICICI and Syndicate CBI bank. Thus, the private sector banks seemed to be better placed than the public sector banks in matters of consistency in performance.

V. FINDINGS

- It is found from the Capital Adequacy component that ICICI Bank is performing better than its rival bank. HDFC & SBI bank also perform well on Capital adequacy component.
- Further, it is found from another Assets quality component that HDFC bank is performing well on Assets quality. ICICI and SBI bank also perform well on Assets quality component.

- The study also reveals that HDFC is performing well on management efficiency followed by CBI & SBI bank which is analyzed with the help of return on capital employed ratio.
- It is also found from the earnings ratio under return on assets that HDFC bank is performing well followed by ICICI & CBI bank.
- It is also found that under earning ratio with reference to return on equity ratio that HDFC bank is performing good followed by ICICI & SBI bank.
- Overall liquidity of ICICI and HDFC bank is good. Overall liquidity of SBI bank is also better.
- Considering all the banks' overall performance, it has been observed that HDFC, ICICI are well performing banks as compared to other banks like CBI and SBI bank
- On the basis of the ranking of the banks it has been noticed that the banks standing in 5^{th}& 6^{th} position are highly riskier as compared to banks on 4rth position are less risky and 3^{rd} position banks are relatively good.

VI. CONCLUSION

The research findings indicate that private sector banks outperformed public sector banks in terms of capital adequacy and asset quality. However, both sectors demonstrated satisfactory performance in terms of managerial efficiency and earnings. Public sector banks exhibited stronger liquidity and sensitivity analysis compared to private sector banks, highlighting their ability to maintain long-term solvency. These banks relied more on capital funds rather than deposit funds, enabling them to address the challenges of non-performing assets (NPAs) and maintain liquidity. On the other hand, private sector banks showcased significant capital adequacy and asset quality, contributing to their long-term solvency and enhanced profitability. However, their heavy reliance on deposit funds raised concerns about potential illiquidity and its impact on their performance. It is worth noting that the adoption of advanced technology and the development of innovative financial products can facilitate the growth of public sector banks and align them with their counterparts. Additionally, hiring professionally qualified, technically competent, and well-trained individuals is essential to enhance the performance of public sector banks. The utilization of the CAMELS rating system has become crucial in banking regulation and evaluation.

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