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Performance of Indian Public Sector Banks: A Study using CAMEL Approach

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Abstract

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Banking sector plays a pivotal role in any economy. The overall growth of any economy highly depends on the performance of banking sector. All the developed nations have a prolonged history of having an effective banking system and also the history says with an ineffective banking system the economy of a country or nations suffers or falls down. Therefore, having an effective banking system is very important. Under these circumstances the present study tries to explore the performance of all the Public Sector Banks (PSB) in India for the period 2018-19 to 2022-23. Moreover, the study uses Camel (Capital Adequacy, Asset Quality, Management Quality, Earning, Liquidity) approach to measure the overall performance of the PSB. The study found that among all the PSB the BANK OF INDIA has come to be one of the best performer according to CAMEL parameters whereas central bank of India and State bank of India are the worst performer according the CAMEL method.

Keywords: *Growth, Banks, CAMEL approach*

Introduction

One of India's most important and fundamental service industries is banking, which now draws in the largest amount of investment from Asia. These days, the banking industry is mostly focused on how to offer its client effective services. Serving the financial and economic requirements of the people is the aim of the public, private and institutional banking framework in India. When India won its autonomy, its banking system was unstable. With the establishment of the reserve bank of India 1935 and its responsibility to oversee banking through orders, inspections, managers and other means, the financial system was stabilized. Formally speaking, the banking sector is the engine that drives economic growth. This is due to the fact that finance, which is primarily supplied by the nation's banking institutions, is essential to every industry. Lending is the primary activity of any banking institution since it is essential to its existence and survival. Business organizations experience downturns on a periodic basis in the globalized world. The banking industry is impacted by this downturn, which raises the number of non-performing assets (NPAs).

Numerous banking institutions, including cooperative banks, regional rural banks, and public and private sector banks (both domestic and foreign), support India's economic growth. Furthermore, a range of nonbanking financial companies (NBFCs) offer credit facilities to both individuals and businesses. In addition to playing a significant role in the nation's financial sector, banking institutions bear additional accountability for guaranteeing socio-economic development.

Jaspreet Kaur et al (2015) explores the financial performance of selected public sector banks using the CAMEL model approach. It aims to evaluate and compare the performance of these banks over a five-year period. Drawing on secondary data from annual reports, the research highlights as a top performer,

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demonstrating strength across key indicators such as capital adequacy, asset quality, management efficiency, earning capacity, and liquidity. This literature review underscores the significance of employing the CAMEL model for assessing the financial health of banks and provides valuable insights into their comparative performance. Kumar and Sharma's (2014) study offers valuable insights into the financial soundness of top Indian banks using the CAMEL rating parameters. Through data spanning six years, the research identifies key performers and areas of strength and weakness. The findings highlight the significance of capital adequacy, asset quality, and management efficiency in determining overall bank performance, providing stakeholders with actionable recommendations for enhancing financial resilience.

Sangmi (2010) analyses the performance of commercial banks in India using the CAMEL model sheds light on the financial performance of Punjab National Bank (PNB) and Jammu and Kashmir Bank (JKB). Through a systematic evaluation over five years, the study underscores the importance of factors like asset quality and liquidity. By suggesting measures for improvement, the research contributes to enhancing the financial viability of these banks, thereby benefiting the broader economic landscape. On the other hand, Kaur (2010) comparative appraisal of banks in India using the CAMEL approach offers a comprehensive examination of public, private, and foreign sector banks. By focusing on key performance indicators and categorizing banks based on ownership, the study provides a nuanced understanding of the banking sector's dynamics. Moreover, the research highlights the adaptability of the CAMEL model in aligning with evolving regulatory frameworks, underscoring its relevance in assessing banking sector resilience amidst changing financial landscapes.

Kumar and Malhotra (2009) investigates the private banks in India through the CAMEL model presents a thorough analysis of selected banks' financial performance over a decade. By leveraging secondary data and emphasizing key parameters like asset quality and management efficiency, the study identifies top performers and areas for improvement. The recommendations provided offer actionable insights for policymakers and bank stakeholders, facilitating strategic interventions to bolster financial strength and competitiveness.

Biswas and Bhattacharya's (2012) study offers a thorough analysis of new-generation private sector banks' financial performance in India using the CAMEL model. By leveraging secondary data sources, the research identifies efficiency leaders like Bandhan Bank and HDFC Bank while highlighting their transformative impact on the banking industry, emphasizing economic contributions and investment implications for informed decision-making. Meena's (2008) research paper provides a comprehensive evaluation of select public and private sector banks in India using the CAMEL model. By scrutinizing key parameters like capital adequacy, asset quality, and management efficiency, the study sheds light on performance disparities and offers insights into factors affecting financial performance, guiding stakeholders towards informed decision-making for sustainable growth.

Yusufazari and Beduk (2016) study delivers into the performance analysis of banks in Turkey using the CAMEL approach. Through meticulous ratio analysis and data collection spanning seven years, the research reveals notable performers like Ziraat Bank and provides industry-wide efficiency rankings, offering valuable insights for stakeholders and policymakers. Haralayya and Aithal's (2011) research contributes to understanding India's banking industry dynamics post-deregulation. By examining the growth and structure of banks, the study employs the CAMEL model to assess efficiency and productivity. Insights into profitability, asset quality and technological advancements aid in formulating strategies for enhanced performance. Suresh and Pradhan's (2006) study evaluates the financial

performance of banking sectors in India using the CAMEL approach. By comparing public sector undertaking banks (PSUB) and private sector banks (PSB), the research identifies performance gaps and areas of improvement, providing stakeholders with actionable insights for enhancing financial resilience and competitiveness.

Reddy (2018) tries to focus on the financial performance analysis of selected public sector banks in India using the CAMEL approach. Through meticulous ratio analysis and statistical tools, the study highlights differences in performance between Punjab National Bank (PNB) and State Bank of India (SBI), offering valuable insights for stakeholders and policymakers. Chaudhuri's (2012) comparative analysis of SBI and ICICI Bank using the CAMEL approach underscores the importance of this methodology in evaluating bank performance. By analyzing key parameters like capital adequacy and asset quality, the study provides insights into the strengths and weaknesses of these prominent banks, guiding stakeholders in decision-making processes.

Bansal and Mohanty (2010) explores valuable insights into the financial performance of commercial banks in India using the CAMEL model. By evaluating key parameters over a five-year period, the research highlights performance disparities and provides actionable recommendations for stakeholders, contributing to a deeper understanding of the banking sector's dynamics. Srinivasan and Saminathan (2013) in their research employ the CAMEL model to assess the financial soundness of commercial banks in India. Through meticulous ratio analysis and categorization, the study offers valuable insights into industry competitiveness and provides recommendations for improving financial performance, benefiting stakeholders and policymakers alike. Kulshrestha and Srivastava (2014) in their study evaluates the financial performance of private and public sector banks in India using the CAMEL rating approach. By analyzing key ratios and employing statistical tests, the research identifies performance disparities and sheds light on the impact of modern technology and banking reforms, guiding stakeholders in decision-making processes.

Pinalben et al (2006) in their research paper focuses on small finance banks in India, employing the CAMEL model to assess financial performance. By analyzing key parameters and utilizing quantitative techniques, the study provides insights into banks' strengths and weaknesses, offering valuable guidance for stakeholders in the financial sector. Manoj (2013) in his study provides a detailed analysis of AU and Ujjivan Small Finance Banks' financial performance. Through liquidity and profitability analysis, the research offers insights into short-term adequacy and investment considerations, highlighting the importance of thorough financial statement analysis for investors and stakeholders. Srinivas & Shanigarapu (2020), in their study finds the role of small finance banks (SFBs) in advancing financial inclusion in India. Through secondary data analysis, it reveals that SFBs play a crucial role in reaching underserved populations.

Objective of the Study

- To evaluate the performance of Indian public sector banks
- To Rank the banks on the basis of camel approach

Methods and Data

The present study is based on secondary data collected from www.moneycontrol.com. The study uses five years data (2018-19 to 2022-23) to analyze the performance of all the Public sector banks in India.

In order to look at the financial soundness of the selected commercial banks in India the present study uses a simplified approach using internationally accepted CAMEL rating parameters. CAMEL is an acronym for five parameters (capital adequacy, assets quality, management soundness, earnings and liquidity). CAMEL rating is a subjective model which indicates financial strength of a bank, whereas CAMEL ranking indicates the banks relative position with reference to other banks. of public.

$$\text{C = capital adequacy} = \frac{\text{EQUITY CAPITAL}}{\text{TOTAL ASSET}} \times 100$$

It represents the proportions of assets that are financed by using the equity capital funds. If the idle ratio comes to be higher then it represent that the higher equity amount has been used to finance the assets. For a bank, both equity capital and assets are crucial components of its financial structure. Some terminologies are discussed below:

Equity Capital: Equity capital represents the funds provided by the bank's shareholders or owners. It acts as a cushion to absorb losses and provides a level of financial stability. Higher equity capital implies a stronger financial position, as it indicates the bank has more funds contributed by shareholders rather than relying heavily on debt.

Assets: For a bank, assets primarily consist of loans, investments, and cash reserves. These are the resources the bank uses to generate income through interest and other fees.

For a bank, it's essential to strike a balance between equity capital and assets. While higher equity capital can provide stability and confidence to investors, excessively high equity might suggest underutilization of assets. Conversely, if assets greatly outweigh equity capital, it could indicate a riskier financial position as the bank may be overly leveraged, meaning it relies heavily on debt financing. The minimum requirement of CAR by BASEL 2 norms is 8 percent and by RBI is 9 percent.

In general, regulators often have guidelines or requirements regarding the capital adequacy ratio for banks. This ratio ensures that banks have enough capital to cover potential losses from their lending activities and other operations. So, there's no definitive answer to whether assets should be more than equity capital or vice versa, banks aim to maintain a healthy balance between the two to ensure financial stability and regulatory compliance.

$$\text{A = ASSET QUALITY} = \frac{NPA}{TOTAL\ LOANS} \times 100$$

It represent one of the important metric here NPA represent the amount of loan which is not generating any income to a bank. Basically NPA are one of the reasons of an bank to run in loss or to run in effectively.

It represent following thing for a bank.

Banks asset quality that is if a bank has a higher NPA that means the asset quality is not so good as the bank is un avail to make income from those loans.

Profitability, if a bank has a higher NPA then it make the bank in a position of doubt whether the bank will make a higher profitability or not.

Credit risk management, if NPA is low then it indicates that the bank is successful in giving loans to credit worthy people. Confidence to investors, if NPA is low then it gives investors the confidence that the bank is running effectively and efficiently symbolling a higher profit.

In over all we can say that the ratio gives the information of the loan quality , bank prefers to have this ratio low to ensure financial stability.

$$\text{M = MANAGEMENT QUALITY} = \frac{OPERATING\ EXPENSE}{AVERAGE\ ASSET} \times 100$$

For a bank this ratio gives the following information

This ratio helps the bank to know its efficiency in using its asset to generate income and manage its operation. It gives a sign of operational efficiency when the ratio is low as it indicates that bank is avail to generate income while controlling its operating expense .

Profitability, lower ratio indicates that the bank is utilizing less fund for operating expense in compare to its asset base which indicates higher profitability and can attract potential investors.

The bank with higher ratio can attract higher risk as having higher operating expense sometimes lead to less revenue generation to meet up there expense.

E=EARNING QUALITY= RETURN ON ASSET

Return on asset also known as ROA measures the banks bank capability to generate profit from its asset base.

Profitability, ROA measures the bank's capability to generate profits from its asset base or lineup . A higher ROA indicates that the bank is producing more profits relative to its total assets, while a lower ROA suggests lower profitability.

Efficiency, ROA reflects the efficiency of the bank's operations. A higher ROA suggests that the bank is using its assets efficiently and effectively to generate income, while a lower ROA may indicate inefficiencies in the utilization of assets base.

Risk Management, ROA provides insight into the bank's risk management practices. A higher ROA may indicate that the bank is effectively and efficiently managing its risks while producing profits, whereas a lower ROA may suggest higher risk-taking behavior.

$$\text{L=LIQUIDITY=}\frac{LIQUID\ ASSET}{SHORT\ TERM\ FUNDING\ AND\ DEPOSIT} \times 100$$

This ratio helps the bank to know its liquidity position .Its calculated by dividing the total asset held by a bank with short term funding and deposit.

Here's what this ratio indicates for a bank:

Liquidity Position: This ratio provides insight into the bank's ability to meet its short-term obligations using its liquid assets. Liquid assets typically include cash, cash equivalents, and other assets that can be quickly converted into cash without significant loss in value. A higher ratio indicates a stronger liquidity position, as the bank holds more liquid assets relative to its short-term funding and deposit obligations.

Risk Management: A higher ratio suggests that the bank has sufficient liquidity to cover its short-term funding needs, reducing the risk of liquidity crises or funding shortfalls. It indicates that the bank is managing liquidity risk effectively and is less vulnerable to disruptions in funding markets.

The present paper is structured into four sections including the present section. The Section II deals with the overview of selected public sector banks of India while Section III deals with the performance of public sector banks using CAMEL approach. The Section IV or the last section provides with the concluding remarks.

Overview of Public Sector Banks

Based on the average mean rankings of the listed banks over the five-year period, it's evident that Indian Bank consistently outperformed its peers, securing the top rank. Meanwhile, Central Bank of India consistently ranked lower, indicating comparatively weaker performance. Overall, these

rankings provide insights into the relative strengths and weaknesses of each bank in the given timeframe.

Table 1: Capital Adequacy Ratio of Selected Banks in India

SL.NO	Banks Name	2018-19	2019-20	2020-21	2021-22	2022-23	RANK
1	Bank of Baroda	13.4200	13.3000	14.9900	15.8400	16.2400	5
2	Bank of India	14.1900	13.1000	14.9300	17.0400	16.2800	2
3	Bank of Maharashtra	11.8600	13.5200	14.4900	16.4800	18.1400	4
4	Canara Bank	11.9000	13.6500	13.1800	14.9000	16.6800	6
5	Central Bank of India	9.6100	11.7200	14.8100	13.8400	14.1200	12
6	Indain Bank	13.2100	14.1200	15.7100	16.5300	16.4900	1
7	Indian overseas Bank	10.2100	10.7200	15.3200	13.8300	16.1000	11
8	Punjab and Sind Bank	10.7100	12.0900	17.0600	18.5400	17.1000	3
9	Punjab National Bank	9.7300	14.1400	14.3200	14.5000	15.5000	7
10	State Bank of India	12.7200	13.1300	13.7400	13.8500	14.6800	8
11	UCO Bank	10.7000	11.7000	13.7400	13.7400	16.5100	10
12	Union Bank of India	11.7800	12.8100	12.5600	14.5200	16.0400	9

Source: Own calculation

Table 2: Asset Quality Ratio of Selected Banks in India

SL.NO	Bank Name	2018-19	2019-20	2020-21	2021-22	2022-23	RANK
1	Bank of Baroda	0.0333	0.0313	0.0309	0.0172	0.0089	1
2	Bank of India	0.0561	0.0388	0.0335	0.0234	0.0166	5
3	Bank of Maharashtra	0.0552	0.0477	0.0248	0.0097	0.0025	4
4	Canara Bank	0.0537	0.0422	0.0382	0.0265	0.0173	6
5	Central Bank of India	0.0773	0.0763	0.0577	0.0397	0.0177	11
6	Indain Bank	0.0375	0.0313	0.0337	0.0227	0.0090	2
7	Indian overseas Bank	0.0011	0.0544	0.0358	0.0265	0.0183	3
8	Punjab and Sind Bank	0.0722	0.0802	0.0404	0.0274	0.0184	8
9	Punjab National Bank	0.0655	0.0577	0.0572	0.0479	0.0272	10
10	State Bank of India	0.3015	0.0223	0.0150	0.0102	0.0067	12
11	UCO Bank	0.1078	0.0545	0.0394	0.0270	0.0129	9
12	Union Bank of India	0.0685	0.0549	0.0462	0.0368	0.0170	7

Source: Own calculation

The data presented shows how different banks performed over the specified period based on their average mean rankings and percentage change. With the lowest average mean and a stable ranking, Indian Bank was the best performer, while State Bank of India showed a large percentage change that might indicate significant swings in its performance.

Table 3: Management Capability Ratio of selected Bank In India

SL.NO	Bank Name	2018-19	2019-20	2020-21	2021-22	2022-23	RANK
1	Bank of Baroda	0.015041	0.018647	0.017761	0.017849	0.017919	7
2	Bank of India	0.017327	0.016302	0.015676	0.016368	0.01804	4
3	Bank of Maharashtra	0.019219	0.018482	0.019506	0.018016	0.015742	8
4	Canara Bank	0.015953	0.016322	0.020599	0.016627	0.017477	6
5	Central Bank of India	0.036639	0.020145	0.018693	0.019207	0.022421	12
6	Indain Bank	0.015092	0.014998	0.022127	0.01684	0.017506	5
7	Indian overseas Bank	0.017879	0.020084	0.020802	0.019014	0.020947	11
8	Punjab and Sind Bank	0.015364	0.017739	0.022689	0.019699	0.019132	9
9	Punjab National Bank	0.014977	0.014914	0.019422	0.015728	0.017363	3
10	State Bank of India	0.019532	0.019699	0.01948	0.019617	0.01861	10
11	UCO Bank	0.013725	0.013413	0.01545	0.018331	0.019383	2
12	Union Bank of India	0.002668	0.014389	0.020668	0.016322	0.01777	1

Source: Own calculation

The information provided illustrates how different banks have performed over time, taking average mean rankings and percentage changes into account. While the Central Bank of India showed noticeable performance swings, the Union Bank of India continuously showed the best performance.

Table 4: Earnings Quality Ratio of selected Bank in india

SL.NO	Bank Name	2018-19	2019-20	2020-21	2021-22	2022-23	RANK
1	Bank of Baroda	0.94	0.76	1.07	8.46	14.36	3
2	Bank of India	-15.66	-7.88	5.47	0.07	0.08	7
3	Bank of Maharashtra	-109.56	4.09	5.02	9.35	18.4	12
4	Canara Bank	1.16	-6.78	5.05	9.85	16.03	4
5	Central Bank of India	-29.79	-6.07	-4.95	4.38	6.21	8
6	Indain Bank	1.97	3.94	11.88	10.52	12.61	2
7	Indian overseas Bank	-22.84	-52.78	4.9	7.43	8.3	11
8	Punjab and Sind Bank	-9.53	-17.7	-32.67	7.41	8.69	10
9	Punjab National Bank	-24.2	0.58	2.41	3.9	2.74	6
10	State Bank of India	0.39	6.95	8.86	12.33	16.75	1
11	UCO Bank	-37.75	-14.45	0.96	4.45	8.11	9
12	Union Bank of India	-12.15	-9.46	4.87	7.94	11.68	5

Source: Own calculation

The information shows the results of different banks over time. Throughout, the State Bank of India held the top spot, while the Indian Overseas Bank experienced sharp drops that may have been due to operational problems. The State Bank of India is the best performer overall.

Table 5: Liquidity Ratio of selected Bank in India

SL.NO	Bank Name	2018-19	2019-20	2020-21	2021-22	2022-23	RANK
1	Bank of Baroda	0.4251	0.4192	0.3947	0.4192	0.3807	5
2	Bank of India	0.4655	0.4411	0.5004	0.4236	0.4313	4
3	Bank of Maharashtra	0.4895	0.4544	0.4658	0.4375	0.3734	6
4	Canara Bank	0.3658	0.3910	0.4354	0.4272	0.3905	11
5	Central Bank of India	0.5219	0.5691	0.5683	0.5658	0.5029	1
6	Indain Bank	0.3512	0.3657	0.4286	0.4287	0.3801	12
7	Indian overseas Bank	0.4396	0.4641	0.5255	0.5148	0.4400	3
8	Punjab and Sind Bank	0.3327	0.3806	0.4200	0.4755	0.4663	10
9	Punjab National Bank	0.4104	0.4496	0.4559	0.4404	0.4302	7
10	State Bank of India	0.4086	0.4004	0.4604	0.4630	0.4246	9
11	UCO Bank	0.5390	0.5632	0.5700	0.5490	0.4969	2
12	Union Bank of India	0.4066	0.4605	0.4502	0.4533	0.4039	8

Source: Own calculation

Based on percentage changes and average mean rankings, the data shows the performance trends of different banks. The two banks with the biggest percentage increases were UCO Bank and the Central Bank of India; Canara Bank showed a decrease depicted in Table 5.

Overall Performance of the Public Sector banks using CAMEL approach

The table 6 reveals that that BANK OF INDIA has came to be one of the best performer according to CAMEL parameters whereas central bank of India and State bank of India are the worst performer according the CAMEL method.

Table 6: Overall Performance of the Public sector banks

SL. NO	Bank Name	C	A	M	E	L	Mean	Geo mean	Rank
1	BANK OF INDIA	5	1	1	3	5	3	18	1
2	BANK OF BARODA	2	5	5	7	4	4.6	27.6	3
3	BANK OF MAHARASHTRA	4	4	4	12	6	6	36	4
4	CANARA BANK	6	6	6	4	11	6.6	39.6	6
5	CENTRAL BANK OF INDIA	12	11	11	8	1	8.6	51.6	11
6	INDIAN BANK	1	2	2	2	12	3.8	22.8	2
7	INDIAN OVERSEAS BANK	11	3	3	11	3	6.2	37.2	5
8	PUNJAB NATIONAL BANK	3	8	8	10	10	7.8	46.8	8
9	PUNJAB & SIND BANK	7	10	10	6	7	8	48	9
10	STATE BANK OF INDIA	8	12	12	1	9	8.4	50.4	10

11	UCO BANK	10	9	9	9	2	7.8	46.8	8
12	UNION BANK OF INDIA	9	7	7	5	8	7.2	43.2	7

Source: Own calculation

Combining Section II and III the results can be summarized as follows:

- Based on the average mean rankings of the listed banks over the five-year period, it's evident that Indian Bank consistently outperformed its peers, securing the top rank. Meanwhile, Central Bank of India consistently ranked lower, indicating comparatively weaker performance. Overall, these rankings provide insights into the relative strengths and weaknesses of each bank in the given timeframe.
- The data presented shows how different banks performed over the specified period based on their average mean rankings and percentage change. With the lowest average mean and a stable ranking, Indian Bank was the best performer, while State Bank of India showed a large percentage change that might indicate significant swings in its performance.
- The information shows the results of different banks over time. Throughout, the State Bank of India held the top spot, while the Indian Overseas Bank experienced sharp decline that may have been due to operational problems. The State Bank of India is the best performer in terms of overall performance.
- Based on percentage changes and average mean rankings, the data shows the performance trends of different banks. The two banks with the highest percentage increases were found to UCO Bank and the Central Bank of India while Canara Bank showed a decreasing trend.

Concluding Remarks

Given the information and facts presented, it is clear that Indian Bank ranked first in average mean rankings and continuously beat its competitors over the designated five-year period. This suggests that Indian Bank's performance is exceptionally stable and excellent. On the other hand, the Central Bank of India continuously received worse rankings, suggesting that it continues to face difficulties in its operations when compared to other banks. Even though State Bank of India's performance fluctuated significantly, as evidenced by a huge percentage shift, it did not continuously occupy the top spot in rankings. Therefore, the State Bank of India is not the top bank in the present situation, despite prior assumptions to the contrary. Indian Bank stands out as the top performer overall, exhibiting excellence and consistency in its performance over the given period. Furthermore, Indian Overseas Bank had significant declines in rankings, presumably as a result of operational problems.

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