



EVALUATING FINANCIAL SOUNDNESS AND PERFORMANCE OF INDIAN PUBLIC SECTOR BANKS USING THE CAMEL FRAMEWORK: A COMPARATIVE ANALYSIS

Mr. D. Praveen Kumar¹, Mr. V. Venkata Rao²

¹MITS, School of Management, Deemed to be University

²Asst. Professor, School of Management. MITS. Deemed to be University

ABSTRACT

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The banking sector is a key component of economic development and financial stability. Measuring the performance of banks is essential for ensuring efficiency and sustainability. This study examines the financial soundness of selected Indian banks through the CAMEL framework. The framework evaluates banks based on Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and Liquidity. Secondary data obtained from published financial statements and annual reports are used for analysis. A comparative approach is adopted to assess the relative performance of the selected banks. The study identifies strengths and weaknesses across different CAMEL dimensions. The findings provide valuable insights into the operational and financial conditions of the banks. The results may assist regulators, investors, and bank management in making informed decisions. Overall, the study contributes to a better understanding of banking performance in the Indian financial system.

KEYWORDS: CAMEL Framework, Financial Performance, Financial Soundness, Indian Banks, Capital Adequacy, Asset Quality, Banking Sector.

2. INTRODUCTION

The banking industry plays a significant role in supporting economic activities and maintaining financial stability. Strong banking institutions contribute to efficient resource allocation and sustainable economic growth. In recent years, the Indian banking sector has experienced substantial changes due to technological advancements, regulatory reforms, and increased competition. These developments have made the evaluation of bank performance increasingly important. Financial soundness is a key indicator of a bank's ability to manage risks and achieve long-term sustainability. The CAMEL framework is widely recognized as an effective tool for assessing banking performance. It examines five critical dimensions: Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and Liquidity. Analyzing these factors provides a comprehensive understanding of a bank's operational and financial condition. This study compares the financial performance of selected Indian banks using the CAMEL framework. The findings are expected to provide valuable insights for investors, regulators, and banking professionals.

3. LITERATURE REVIEW

Shubha & Naresh Babu, 2024. In recent decades, the Indian banking industry has undergone significant structural and technological transformations, influenced by liberalization, globalization, digitization, and evolving regulatory.

Banoth & Sreeram ulu 2024 The banking sector comprises public sector banks (PSBs), private sector banks (PVBs), foreign banks, regional rural banks (RRBs), and small finance banks (SFBs), each contributing uniquely to the country's financial landscape.

Mahajan & Bhatia, 2024 Broader sectoral comparisons were conducted by Vijayalakshmi and Srinivasan (2023), who applied the CAMEL model to ten public and private sector banks, highlighting performance gaps and operational inefficiencies.

Kantha Raju G., Shubha, A. & KS, N. (2024). Twelve public and private commercial banks seven from the public sector and five from the private sector—are assessed in this study using fifteen financial measures. The arithmetic mean is used to get the six-year average, which is then used to rank the banks according to their performance. Secondary data used in the study was taken from statistics tables kept by Indian banks. One-way ANOVA and descriptive statistics are used to analyze the CAMEL ratio means of public and private sector banks to see whether there is a significant difference between them. Among the banks taken into consideration, Bank of India came in last, while Kotak Bank came in third.

Pinalben G. Mistry et al. (2023). The study analysed five Small Finance Banks using CAMEL indicators during 2016–2021. The findings showed that most banks maintained satisfactory capital adequacy and earnings, but management efficiency varied among banks

Satyanarayana et al. (2023) The researchers analysed mergers and acquisitions in Indian banks and their impact on financial performance. The study concluded that mergers improved profitability and financial stability.

Sudha Vepa and Meraj Banu (2021), Examining India's two biggest public and private sector banks over ten years is the study's main goal. Using the T Test, descriptive statistics, and correlation analysis, the research seeks to assess their financial success. The samples are chosen using a judgment sampling strategy because of the data's accessibility. The results show that the capital adequacy ratio is essential to preserving banks' long-term viability and safeguarding depositor interests. Public sector banks do better than private sector banks in preserving average asset quality and earning capacity stability. However, private sector bank

Singhal, P. K. (2020). This study aims to assess the financial status and performance of 21 Indian public sector banks over ten years and rate them based on their performance. The study found that 13 of the sample banks had a Capital Adequacy Ratio (CAR) over the RBI 's

Prajapat and Ojha (2020) The study examined the influence of CAMEL variables on profitability. Capital adequacy and liquidity significantly affected banking performance, while rising NPAs reduced profitability.

3. RESEARCH GAP

Although numerous studies have employed the CAMEL framework to assess the performance of Indian banks, most have focused on specific categories of banks or individual performance indicators. Limited research has provided a recent and comprehensive comparison of public and private sector banks by incorporating all five CAMEL dimensions simultaneously. Furthermore, rapid technological advancements, regulatory changes, and evolving market conditions have significantly altered the banking landscape, necessitating updated analysis. Existing studies also offer limited insights into the relative strengths and weaknesses of banks across individual CAMEL components. Therefore, there is a need for a contemporary comparative evaluation of selected Indian banks to better understand their financial soundness, efficiency, and overall performance.

4. OBJECTIVES OF THE STUDY

1. To assess the financial performance of selected Public Sector Banks in India using CAMEL and related financial ratios during 2016–2025.
2. To compare the profitability, liquidity, solvency, asset quality, and operational efficiency of the selected Public Sector Banks.

3. To identify significant differences in the financial performance of the selected Public Sector Banks and provide suitable recommendations for improvement.

5. RESEARCH METHODOLOGY

Research Design

The study adopts a descriptive and analytical research design to evaluate the financial performance of selected public sector banks in India.

Nature of Data

The study is based entirely on secondary data.

Sources of Data

The required data have been collected from:

- Annual Reports of selected Public Sector Banks. Publications of the Reserve Bank of India. Bank websites and financial statements Research articles, journals, and banking publications

Sample Selection

The study covers the following five selected Public Sector Banks:

1. State Bank of India
2. Indian Bank
3. Bank of Baroda
4. Union Bank of India
5. Central Bank of India

6. PERIOD OF STUDY

The study covers a period of 10 years from 2016 to 2025.

7. SCOPE OF THE STUDY

The study is confined to the analysis of selected public sector banks in India for the period 2016–2025. It evaluates their financial performance through capital adequacy, asset quality, profitability, liquidity, and operational efficiency indicators. The findings may assist bankers, investors, researchers, and policymakers in understanding the comparative financial health of public sector banks.

8. LIMITATION OF THE STUDY

This study examines only five selected public sector banks over the period 2016–2025 using secondary data sources. The analysis is restricted to financial ratios and descriptive statistics. Factors such as economic conditions, policy changes, customer perceptions, managerial practices, and technological developments are not included, which may influence overall performance outcomes.

9. FINANCIAL AND STATISTICAL TOOLS

The study employs financial ratio analysis and statistical techniques to evaluate bank performance. Financial tools include Capital Adequacy Ratio, Debt-Equity Ratio, NPA Ratios, ROA, ROE, Net Profit Margin, Current Ratio, Business per Employee, and Credit-Deposit Ratio. Statistical tools such as Mean, Standard Deviation, Coefficient of Variation, and CAGR are utilized.

10.DATA ANALYSIS

Table No: 1

A consolidated statement of the Capital Adequacy Ratio (CAR) of public sector Banks in India during the Period 2016 to 2025.

Year	SBI	INDIAN	BOB	UB	CB
2016	13.12	13.2	13.17	10.56	11.08
2017	13.11	13.64	13.17	11.79	12.86
2018	12.6	12.55	12.13	11.5	13.22
2019	13	13.21	13.42	11.78	12
2020	13.13	14.12	13.3	12.81	13.65
2021	13.74	15.71	14.99	12.56	13.18
2022	13.83	16.53	15.84	14.52	14.9
2023	14.68	16.49	16.24	16.04	16.68
2024	14.28	16.44	16.31	16.97	16.28
2025	14.25	17.94	17.19	18.02	16.33
Mean	13.574	14.983	14.576	13.655	14.018
SD	0.65	1.76	1.65	2.44	1.84
CV	0.05	0.12	0.11	0.18	0.13
CAGR	0.01	0.03	0.03	0.06	0.04

Interpretation

The Capital Adequacy Ratio of all selected public sector banks remained in compliance with regulatory requirements throughout 2016–2025, indicating strong capital strength.

Indian Bank recorded the highest average CAR (14.983%), while SBI showed the greatest stability with the lowest CV (0.05). Union Bank achieved the highest growth rate, reflecting a significant improvement in capital adequacy.

Table No:02

A consolidated statement of the Debt-Equity Ratio of Public sector Banks in Indian India during the Period 2016 to 2025

Year	SBI	INDIAN	BOB	UB	CB
2016	2.24	0.22	0.83	1.35	0.85
2017	1.69	0.74	0.76	1.76	1.17
2018	1.65	1.07	1.44	1.82	1.09
2019	1.82	0.63	1.46	1.62	1.13
2020	1.36	0.94	1.3	1.55	1.09
2021	1.64	0.68	0.87	0.8	0.85
2022	1.52	0.39	1.21	0.73	0.7
2023	1.5	0.46	1.04	0.55	0.79
2024	1.58	0.4	0.84	0.28	0.66
2025	1.28	0.6	0.9	0.24	0.9
Mean	1.628	0.613	1.065	1.07	0.923
SD	0.253	0.247	0.253	0.585	0.175
CV	0.155	0.403	0.237	0.547	0.190
CAGR	-0.060	0.118	0.009	-0.175	0.006

Table No: 03

A consolidated statement of the Gross NPA Ratio of Public sector Banks in Indian India during the Period 2016 to 2025.

Year	SBI	INDIAN	BOB	UB	CAB
2016	6.71	6.84	10.56	9.04	9.74
2017	7.15	7.72	11.15	11.77	10
2018	11.55	7.66	13.21	11.67	12.44
2019	7.91	7.37	10.29	16.41	9.17
2020	6.41	7.15	10.05	15.58	8.57
2021	5.16	10.56	9.44	15.19	9.43
2022	4.09	9.05	8.24	12.04	7.91
2023	2.84	6.27	3.91	8	5.56
2024	2.27	4.1	2.99	4.95	4.36
2025	1.85	3.18	2.3	3.71	3.01

Mean	5.59	6.99	8.21	10.836	8.02
SD	2.83	2.04	3.59	4.15	2.73
CV	0.51	0.29	0.44	0.38	0.34
CAGR	-0.13	-0.08	-0.16	-0.09	-0.12

Interpretation

The Gross NPA ratios of all selected public sector banks showed a declining trend during 2016–2025, indicating significant improvement in asset quality and credit risk management. SBI recorded the lowest average GNPA ratio (5.59%), reflecting superior asset quality, while Indian Bank demonstrated the most consistent performance with the lowest

CV (0.29). Bank of Baroda achieved the highest improvement with a CAGR of –16%, reducing its GNPA ratio substantially over the period. Union Bank reported the highest average GNPA ratio (10.84%), indicating comparatively higher credit risk. Overall, the negative CAGR values confirm effective NPA management and strengthened financial health across the banks.

Table No:04

A consolidated statement of the Net NPA of Public sector Banks in India during the Period 2016 to 2025

Year	SBI	INDIAN	BOB	UB	CAB
2016	3.81	4.2	4.96	5.25	6.42
2017	3.71	4.39	4.72	6.57	6.33
2018	5.73	3.81	5.49	8.42	7.48
2019	3.01	3.75	3.33	6.85	5.37
2020	2.23	3.13	3.13	5.49	4.22
2021	1.5	3.37	3.09	4.62	3.82
2022	1.02	2.27	1.72	3.68	2.65
2023	0.67	0.9	0.89	1.7	1.73
2024	0.57	0.43	0.68	1.03	1.27
2025	0.47	0.19	0.58	0.63	0.7
Mean	2.27	2.64	2.86	4.424	4
SD	1.67	1.51	1.74	2.49	2.25
CV	0.73	0.57	0.61	0.56	0.56
CAGR	-0.21	-0.29	-0.21	-0.21	-0.22

Interpretation

The Net NPA ratios of all selected public sector banks show a consistent decline during the period 2016–2025, indicating significant improvement in asset quality and credit risk management. Among the banks, SBI recorded the lowest average Net NPA ratio (2.27%), reflecting stronger control over

stressed assets, while Union Bank and Canara Bank reported relatively higher averages. The negative CAGR values for all banks confirm a steady reduction in Net NPAs over the study period. Indian Bank exhibited the highest rate of decline (-29%), demonstrating remarkable improvement. The moderate coefficient of variation values indicates reasonable stability in Net NPA performance across the banks.

Table No:05

A consolidated statement of the Business per Employee of Public sector Banks in Indian India during the Period 2016 to 2025.

Year	SBI	INDIAN	BOB	UB	CAB
2016	15.36	15.27	18.41	17.19	14.89
2017	17.25	14.83	18.78	18.02	15.02
2018	17.53	18.18	18.52	18.55	15.39
2019	19.31	21.61	19.87	19.09	17.61
2020	22.34	24.44	19.42	20.55	18.73
2021	27.01	21.68	20.4	19.38	18.67
2022	31.87	24.72	22.97	22.54	20.59
2023	32.33	26.76	28.95	24.73	24.21
2024	37.95	29.85	32.24	27.58	27.18
2025	40.46	32.62	36.24	30.62	30.82
Mean	26.141	22.996	23.58	21.825	20.311
SD	8.642	5.586	6.173	4.257	5.167
CV	0.331	0.243	0.262	0.195	0.254
CAGR	0.114	0.088	0.078	0.066	0.084

Interpretation

The Business per Employee ratio of all selected public sector banks exhibited a steady upward trend during 2016–2025, indicating improved employee productivity and operational efficiency. SBI recorded the highest average business per employee (26.14), followed by Bank of Baroda and Indian Bank, reflecting their stronger business generation capacity. The positive CAGR values for all banks confirm continuous growth in productivity, with SBI registering the highest growth rate (11.4%). Union Bank reported the lowest coefficient of variation (0.195), indicating the most consistent performance over the study period. Overall, the results suggest that public sector banks significantly enhanced workforce efficiency and business mobilization during the period.

Table No: 06

A consolidated statement of the Credit-Deposit Ratio of Public sector Banks in Indian during the Period 2016 to 2025.

Year	SBI	INDIAN	BOB	UB	CAB
2016	84.55	72.38	66.86	78.02	67.68
2017	76.85	69.96	63.7	75.7	69.05
2018	71.49	75.16	72.28	70.69	72.74
2019	75.07	74.87	73.4	71.39	71.38
2020	71.75	76.04	72.96	69.9	69.1
2021	66.54	67.66	73.05	63.96	63.22
2022	67.5	65.55	74.33	64.04	64.78
2023	72.3	72.34	78.18	68.17	70.45
2024	75.35	74.83	80.32	71.3	70.99
2025	77.34	77.48	82.16	72.81	72.01
Mean	73.874	72.627	73.724	70.598	69.14
SD	4.955	3.654	5.345	4.250	2.959
CV	0.067	0.050	0.073	0.060	0.043
CAGR	-0.010	0.008	0.023	-0.008	0.007

Interpretation

The Credit–Deposit Ratio of the selected public sector banks remained relatively stable during 2016–2025, reflecting balanced lending and deposit mobilization activities. SBI recorded the highest average ratio (73.87%), closely followed by Bank of Baroda (73.72%) and Indian Bank (72.63%). Bank of Baroda achieved the highest positive CAGR (2.3%),

indicating stronger growth in credit deployment relative to deposits. In contrast, SBI and Union Bank registered marginal negative growth, suggesting a cautious lending approach. The low coefficient of variation values for all banks indicate high consistency and stability in maintaining credit–deposit levels. Overall, the results reveal sound liquidity management and efficient utilization of deposit resources across the banks.

Table No: 07

A consolidated statement of the Return on Assets (ROA) of public sector Banks in India during 2016 to 2025

Year	SBI	INDIAN	BOB	UB	CB
2016	0.42	0.35	-0.8	0.33	-0.51
2017	0.39	0.64	0.2	0.12	0.19
2018	-0.19	0.5	-0.34	-1.08	-0.68
2019	-0.02	0.11	0.06	-0.6	0.05
2020	0.37	0.24	0.05	-0.53	-0.31
2021	0.45	0.48	0.07	0.27	0.22
2022	0.64	0.59	0.57	0.44	0.46
2023	0.91	0.74	0.97	0.66	0.79
2024	0.99	1.02	1.12	0.98	0.98
2025	1.06	1.25	1.1	1.2	1.01
Mean	0.502	0.592	0.3	0.179	0.22
SD	0.391	0.328	0.603	0.686	0.569
CV	0.778	0.554	2.010	3.835	2.586
CAGR	0.108	0.152	-2.036	0.154	-2.079

The Return on Assets (ROA) of the selected public sector banks showed a notable improvement during 2016–2025, indicating enhanced profitability and more efficient utilization of assets. Indian Bank recorded the highest average ROA (0.592%), followed by SBI (0.502%), reflecting stronger earnings performance. Several banks experienced negative ROA values

in the initial years due to higher asset quality stress and provisioning requirements; however, profitability improved significantly in the later years. The rising ROA values from 2021 onwards demonstrate successful recovery and operational strengthening. The relatively high coefficient of variation for Bank of Baroda, Union Bank, and Canara Bank indicates

greater fluctuations in profitability. Overall, the findings reveal a positive trend in asset productivity and financial performance across the public sector banks during the study period. To perform ANOVA for ROA, the ROA values of the five public sector banks are treated as five groups with 10 observations each (2016–2025).

Hypotheses

- **H₀ (Null Hypothesis):** There is no significant difference in the mean ROA among the selected public sector banks.
- **H₁ (Alternative Hypothesis):** There is a significant difference in the mean ROA among the selected public sector banks.

Source of Variation	SS	df	MS	F
Between Groups	1.120	4	0.280	0.921
Within Groups	13.685	45	0.304	
Total	14.805	49		
Source of Variation	SS	df	MS	F

- Calculated F-value = 0.921
- Critical F-value (5% level, df = 4,45) ≈ 2.58

Decision

Since the calculated F-value (0.921) is less than the critical F-value (2.58), the null hypothesis is accepted.

Interpretation

The ANOVA results indicate that there is no statistically significant difference in the mean Return on Assets (ROA) among SBI, Indian Bank, Bank of Baroda, Union Bank, and Canara Bank during the period 2016–2025. Although individual banks exhibit variations in profitability over time, these differences are not significant at the 5% level. Therefore, the selected public sector banks demonstrate a broadly similar ROA performance during the study period.

A consolidated statement of the Return on Equity (ROE) of public sector Banks in India during the Period 2016 to 2025

Year	SBI	INDIAN	BOB	UB	CAB
2016	6.9	4.37	-13.42	5.9	-8.9
2017	5.57	8.19	3.43	2.37	3.33
2018	-2.99	6.82	-5.6	-20.91	-11.86
2019	-0.32	1.66	0.94	-11.13	0.96
2020	6.24	3.41	0.76	-8.58	-5.69
2021	8.04	7.82	1.08	4.51	4.35
2022	11.31	9.03	8.47	7.41	8.59
2023	15.33	11.01	14.36	10.77	14.41
2024	16.19	13.81	15.85	14.08	16.75
2025	16.07	15.76	14.3	15.92	17.04
SD	6.297	4.238	8.934	11.299	9.918
CV	1.308	1.932	0.450	0.180	0.393
CAGR	0.098	0.153	-2.007	0.117	-2.075
Mean	8.234	8.188	4.017	2.034	3.898

ANOVA for ROE

Hypotheses

- **H₀:** There is no significant difference in the mean ROE among the selected public sector banks.
- **H₁:** There is a significant difference in the mean ROE among the selected public sector banks.

Source of Variation	Sum of Squares (SS)	df	Mean Square (MS)	F-value
Between Groups	312.24	4	78.06	0.97
Within Groups	3634.65	45	80.77	
Total	3946.89	49		
Source of Variation	Sum of Squares (SS)	df	Mean Square (MS)	F-value

- Calculated F-value = 0.97
- Critical F-value (5% level, df = 4, 45) ≈ 2.58
- p-value ≈ 0.435

Decision

Since the calculated F-value (0.97) is less than the critical F-value (2.58) and the p-value is greater than 0.05, the null hypothesis is accepted.

The ANOVA results indicate no statistically significant difference in the mean ROE among SBI, Indian Bank, Bank of

Baroda, Union Bank, and Canara Bank during 2016–2025. Although variations exist in individual years, the overall shareholder return performance of the selected public sector banks does not differ significantly at the 5% level of significance.

Table No:07

A consolidated statement of the Net Profit Margin of Public sector Banks in India during the Period 2016 to 2025.

Year	SBI	INDIAN	BOB	UB	CAB
2016	5.19	3.95	-11	3.77	-5.75
2017	4.97	7.7	2.83	1.48	2.29
2018	-2.47	6.45	-4.83	-13.9	-8.76
2019	-0.25	1.53	0.77	-7.65	0.65
2020	4.79	3.05	0.63	-6.82	-3.94
2021	6.61	6.65	1	3.63	3.03
2022	10.02	8.62	8.94	6.5	6.61
2023	13.62	10.14	14.16	8.84	10.28
2024	13.08	12.7	14	11.78	11.4
2025	13.53	15.33	14.18	14.1	11.97
Mean	6.909	7.612	4.068	2.173	2.778
SD	5.359	4.079	8.163	8.594	6.969
CV	0.776	0.536	2.007	3.955	2.508

Inference of Net Profit Margin (2016–2025)

The Net Profit Margin (NPM) of the selected Public Sector Banks shows considerable variation during the study period. Among the banks, State Bank of India (SBI) recorded a mean NPM of **6.91%**, while Indian Bank achieved the highest average NPM of **7.61%**, indicating superior profitability performance. Bank of Baroda (BOB) reported a mean of **4.07%**, whereas Union Bank of India (UB) and Canara Bank (CAB) recorded lower averages of **2.17%** and **2.78%**, respectively.

The coefficient of variation (CV) indicates that Indian Bank exhibited the most consistent profitability (**CV = 0.536**), followed by SBI (**CV = 0.776**). Union Bank showed the highest

variability (**CV = 3.955**), indicating unstable profit margins during the period. The negative profit margins observed in several years, particularly during 2018–2020, reflect the impact of high NPAs and provisioning requirements. From 2021 onwards, all banks showed significant improvement in profitability, with strong double-digit margins recorded during 2023–2025.

Hypotheses

- **H₀:** There is no significant difference in the mean Net Profit Margin among the selected Public Sector Banks.
- **H₁:** There is a significant difference in the mean Net Profit Margin among the selected Public Sector Banks.

Source of Variation	SS	df	MS
Between Groups	195.85	4	48.96
Within Groups	2559.74	45	56.88
Total	2755.59	49	

F-value = 48.96 / 56.88 = **0.86**

At **5% level of significance**, the critical F-value for (4,45) degrees of freedom is approximately **2.58**.

Since the calculated F-value (0.86) is less than the table value (2.58), the null hypothesis is accepted.

There is no statistically significant difference in the mean Net Profit Margin of the selected Public Sector Banks during the period 2016–2025. Although Indian Bank and SBI recorded higher average profitability than the other banks, the differences are not statistically significant enough. Hence, the profitability performance of the selected banks can be considered broadly similar over the study period.

Table No:07

A consolidated statement of the Current Ratios of Public sector Banks in India during the Period 2016 to 2025.

Year	SBI	INDIAN	BOB	UB	CB
2016	0.35	0.35	2.34	0.31	1.36
2017	0.36	0.39	2.84	0.3	1.08
2018	0.36	0.36	1.09	0.37	0.88
2019	0.41	0.33	0.98	0.36	1.11
2020	0.53	0.33	0.87	0.4	1.15
2021	0.57	0.39	1.08	0.41	2.13
2022	0.6	0.41	0.84	0.42	2.44
2023	0.4	0.36	0.61	0.38	1.52
2024	0.35	0.35	0.65	0.35	1.63
2025	0.4	0.35	0.73	0.35	1.63
Mean	0.433	0.362	1.203	0.365	1.493
SD	0.091	0.025	0.719	0.038	0.466
CV	0.211	0.070	0.598	0.103	0.312
CAGR	0.0149	0.000	-0.1214	0.0136	0.0203

The Current Ratio analysis of the selected Public Sector Banks reveals differences in their short-term liquidity positions during the study period. Canara Bank recorded the highest average Current Ratio (1.493), followed by Bank of Baroda (1.203), indicating relatively stronger liquidity positions. State Bank of India, Indian Bank, and Union Bank of India maintained lower average ratios of 0.433, 0.362, and 0.365, respectively.

The coefficient of variation (CV) indicates that Indian Bank exhibited the highest consistency in maintaining liquidity (CV = 0.070), followed by Union Bank (CV = 0.103) and SBI (CV = 0.211). Bank of Baroda showed comparatively higher fluctuations (CV = 0.598), reflecting significant changes in its liquidity position over the years. The CAGR values indicate positive growth in liquidity for SBI (1.49%), Union Bank (1.36%), and Canara Bank (2.03%), while Bank of Baroda recorded a negative CAGR (-12.14%), suggesting a declining liquidity trend.

Overall, Canara Bank maintained the strongest liquidity position during the study period, whereas Indian Bank demonstrated the most stable liquidity management.

11.FINDINGS OF THE STUDY

1. All selected Public Sector Banks maintained adequate capital levels throughout the study period, with Indian Bank recording the highest average CAR.
2. Gross NPA and Net NPA ratios declined significantly across all banks, indicating improved asset quality and credit risk management.
3. SBI exhibited the strongest asset quality with the lowest average GNPA and NNPA ratios.
4. Business per Employee increased steadily in all banks, reflecting enhanced operational efficiency and employee productivity.
5. Credit-Deposit Ratios remained stable, indicating balanced lending and deposit mobilization practices.
6. Profitability indicators (ROA, ROE, and Net Profit Margin) improved considerably after 2021, showing recovery from earlier financial stress.

7. Canara Bank maintained the strongest liquidity position, while Indian Bank demonstrated the most consistent liquidity management.
8. ANOVA results revealed no significant differences in ROA, ROE, and Net Profit Margin among the banks, indicating broadly similar profitability performance.

12.SUGGESTIONS

1. Banks should continue strengthening capital adequacy to meet future regulatory and economic challenges.
2. Greater focus should be placed on reducing residual NPAs through effective credit monitoring and recovery mechanisms.
3. Banks should adopt advanced risk-management and credit appraisal systems to prevent future asset-quality deterioration.
4. Continuous employee training and digital transformation initiatives should be encouraged to improve operational efficiency.
5. Banks should maintain an optimal balance between lending and deposit mobilization to ensure sustainable growth.
6. Institutions with relatively lower profitability should focus on cost control, income diversification, and operational efficiency.
7. Liquidity management practices should be strengthened to ensure adequate short-term solvency.
8. Regular monitoring of key financial indicators is essential to sustain long-term financial stability and competitiveness.

13.CONCLUSION

The study reveals that the selected Public Sector Banks have shown significant improvement in capital adequacy, asset quality, profitability, productivity, and liquidity during 2016–2025. The consistent decline in NPAs, improvement in profitability indicators, and strengthening capital positions indicate enhanced financial health and resilience. Among the banks, Indian Bank and SBI performed strongly across several parameters, while all banks demonstrated positive progress in operational efficiency and risk management. Overall, the Indian

public sector banking sector exhibited substantial recovery and sustainable growth during the study period.

REFERENCE

1. Shubha, A., & Naresh Babu, K. S. (2024). Comparative performance evaluation of selected public and private sector banks: CAMELS model approach in the Indian context – A longitudinal study. *International Journal of Banking and Finance Studies*, 6(2), 112-126.
2. Sreeramulu, D. (2024). Evaluation of the financial performance of public and private sector banks: CAMELS principles. *Asian Journal of Banking and Economic Studies*, 7(3), 78-91.
3. Mahajan, P., & Bhatia, S. (2024). Performance analysis of small finance banks in India using the CAMELS model. *International Journal of Banking and Economic Review*, 9(2), 67-81.
4. kantha Raju , G., Shubha, A., & KS, N. (2024). Comparative performance evaluation of selected public and private sector banks: CAMELS model approach in Indian context-a longitudinal study. *Educational Administration: Theory and Practice*, 30(5), 7232-7244.
5. Mistry, P. G., Suthar, K. S., & Dalvadi, Y. M. (2023). A Study of Financial Performance Measurement of Small Finance Banks in India Using the CAMEL Model. *Research Review International Journal of Multidisciplinary*.
6. Satyanarayana, K. T. S. S., Rao, A. N., & Surya, K. J. (2023). Capital Structure Dynamics and Financial Performance in Indian Banks.
7. Banu, M., & Vepa, S. (2021). A Financial Performance of Indian Banks Using CAMELS Rating System. *Journal of Contemporary Issues in Business and Government*, 27(1), 2135–2153.
8. Bansal, R. R., & Singh, N. P. (2024). Analysing the financial performance of commercial banks in India: CAMEL model on YES Bank & SBI and Lakshmi Vilas Bank & DBS Bank India Ltd. *Indian Journal of Financial and Economic Policy*, 5(4), 100-115.
9. Khatri, D. D. K. (2018). Camels Rating System for Banks a Magnifying Lens – an Empirical Study in India. *International Journal of Tourism & Hotel Business Management (IJTHBM) SciTech Central Inc., USA*, 1(1), 15–27.
10. Hari Krishna Karri, Kishore Meghani & Bharti Meghani Mishra, 2015. A Comparative Study on Financial Performance of Public Sector Banks in India: An Analysis on Camel Model, *Arabian Journal of Business and Management Review* Volume 4 (No: 8).
11. Chaudhuri, B. (2018). A Comparative Analysis of SBI and ICICI: CAMEL Approach. *International Journal of Research in Management, Economics and Commerce*, 151-156
12. Subbalakshmi, S., Grihalakshmi, S., & Manikandan, M. (2018). Financial Ratio Analysis of SBI (2009-2016). *ICTACT Journal on Management Studies*, 698-704.