An Evaluation of The Financial Performance of Indian Public Sector Banks: With Special Reference to Capital Adequacy and Asset Quality

ABSTRACT

Aims: This research focuses on two key dimensions of financial health: capital adequacy and asset quality. Capital adequacy, measured by Basel III norms, Debt to Equity Ratio (DER), and Leverage Ratio (LR), is pivotal in assessing a bank's resilience to financial shocks. Meanwhile, Asset Quality, indicated by metrics like Gross Non-Performing Assets (Gross NPA), Net NPA, and Total Investments to Total Assets (TITA), reflects a bank's risk management capabilities and the strength of its loan portfolio. This study aims to evaluate the financial performance of selected PSBs in India from 2019 to 2024. Through a detailed analysis of capital adequacy and asset quality ratios, the research provides insights into the banks' adaptation to regulatory demands, the impact of non-performing assets on their capital buffers, and their overall financial soundness.
Study design: The study employs quantitative methods
Place and Duration of Study: This study aims to evaluate the financial performance of selected Public Sector Banks in India from 2019 to 2024.
Methodology: The study evaluates the financial performance of five selected Public Sector Banks based on their Net Profit and employs quantitative methods using secondary data from annual reports of selected banks and Reserve Bank of India publications and money control.com.
Result: The analysis of Capital Adequacy and Asset Quality of Indian Public Sector Banks from 2019 to 2024 reveals a clear trajectory of improvement in both areas. Public sector banks have shown notable progress in bolstering their capital buffers, aligning with Basel III norms, and enhancing their capacity to absorb financial shocks. This has been evidenced by improvements in key ratios such as Basel III, Debt-to-equity ratio (DER), and Leverage Ratio (LR). Simultaneously, the significant decline in both Gross and Net Non-Performing Assets (NPAs) across all banks indicates better asset management, loan recovery, and provisioning strategies

Keywords: ***Financial Performance, Capital Adequacy, Asset Quality, Non-Performing Assets (NPAs), Basel III Compliance, Debt to Equity Ratio (DER), Leverage Ratio (LR), Gross NPA Ratio, Net NPA Ratio***

INTRODUCTION

The financial performance of public sector banks in India plays a pivotal role in ensuring the stability of the country's financial system. As the backbone of the Indian economy, these banks have undergone significant changes in their operational strategies and regulatory frameworks to adapt to evolving financial challenges. Capital adequacy and asset quality are two critical indicators that determine a bank's financial health, resilience to market fluctuations, and its capacity to absorb losses. In recent years, public sector banks have faced mounting pressures due to non-performing assets (NPAs) and the need for stronger capital buffers in alignment with international regulatory standards such as Basel III. A bank's capacity to withstand risks and economic fluctuations is largely determined by its capital adequacy, gauged by ratios such as the debt with equity ratio (DER) and ratio of leverage (LR). Similarly, asset quality, gauged by the Gross NPA, Net NPA, and Total Investments to Total Assets (TITA) ratios, reflects the overall soundness of a bank's loan portfolio and its efficiency in managing risks. With an emphasis on capital sufficiency and asset quality, this study examines the financial performance of a few Indian public sector banks between 2019 and 2024. Through a detailed examination of these ratios, this research provides insights into how public sector banks have adapted to regulatory challenges and improved their financial health.

I. Capital Adequacy

Capital adequacy refers to the ability to absorb potential losses and withstand financial shocks. It is a key indicator of financial health and ensures that banks maintain sufficient capital for their risk-weighted assets. Under Basel III, the main ratios used to assess capital adequacy are the Capital Adequacy ratio (CAR), the Debt Equity Ratio (DER), and the Leverage Ratio (LR). Higher capital adequacy helps banks manage losses from non-performing assets (NPAs) and navigate economic challenges without going bankrupt.

A. Capital Risk Adequacy Ratio

This ratio measures the strength of the bank by comparing its total capital to risk weighted assets. Total capital means Tier I (paid-up equity and reserves) and Tier II capital (long-term unsecured loans). A higher CRAR indicates greater resilience against insolvency. Risk-weighted assets are assigned varying risk weights; for example, government-rated securities have a weight of 0%, while AAA-rated foreign bank assets have a weight of 20%. Regulators set minimum CRAR requirements to manage risk, with Basel III requiring an 8% ratio and India mandating 9% for scheduled banks.

B. Debt Equity Ratio

This ratio signifies the distribution of debt and equity within a bank's overall financial structure, providing insight into the bank's leverage. This ratio is results from comparing total external liabilities to net worth. External liabilities encompass total borrowing, deposits, and other financial obligations, while net worth encompasses equity capital, reserves, and surplus. The highest debt equity ratio implies reduced safeguarding for the creditors and depositors within the banking system.

C. Leverage Ratio

Leverage is a financial concept that allows institutions to increase potential gains or losses on investments. Breuer (2000) defines leverage as a measure of sensitivity, showing how changes in asset value affect equity investments. The leverage ratio, calculated by dividing total assets by equity, reflects a bank's dependence on debt to finance its assets. A higher leverage indicates greater reliance on debt and increased risk.

II. Asset Quality

Asset quality is a symbol of a bank's loan portfolio health and its credit risk management. It is assessed using ratios like Gross Non-Performing Assets (Gross NPA), Net NPA, and Total Investments to Total Assets (TITA). High NPAs indicate issues in loan recovery, adversely affecting profitability and capital. Conversely, lower NPA levels reflect better risk management and stronger financial health. Asset quality, in conjunction with capital adequacy, is needed for assessing a bank's performance and adherence to regulatory standards like Basel III, which aids banks in preserving solvency and profitability in challenging economic times.

A. Gross NPA Ratio

By dividing Gross NPA by Gross advances, one can calculate the NPA ratio. It shows how well banks formulate and oversee lending rules, as well as the caliber of loans they issue. Greater gross non-performing assets (NPAs) of a bank are indicative of higher gross advances. Therefore, a bank with a high ratio must restructure delinquent loans and impose rigorous lending regulations.

B. Net NPA ratio

Net NPA divided by Net Advances yields the NPA ratio. It demonstrates the standard of loans issued by banks and their ability to create and monitor lending policies. A bank's larger gross non-performing assets (NPAs) indicate increased gross advances. Therefore, a bank with a high ratio must enforce strict lending guidelines and restructure past-due loans.

C . Total Investment to Total Advances Ratio

Total investments represent the money a bank has invested in financial products like stocks, bonds, and government securities. Total assets include all resources under the bank's control, such as loans, cash, and tangible assets. This ratio indicates how much of a bank's assets are allocated to investments, helping to evaluate the bank's asset quality in comparison to loans and other assets.

REVIEW OF LITERATURE

Several studies have delved into the financial performance of banks across different regions, employing various analytical frameworks to derive insightful conclusions. **Dr. Rajesh Kumar (2022)** conducted an in-

depth analysis of Punjab National Bank's (PNB) financial results over a decade, from 2011–12 to 2021–22. Utilizing asset quality and profitability ratios, the study aimed to evaluate PNB's performance, gathering data from secondary sources and employing ratio analysis as a primary tool. The findings highlighted a steady growth in the CASA ratio from 35.33% in 2012 to 44.54% in 2021, reflecting an improvement in the bank's financial health. However, the period from 2012 to 2018 saw a sharp increase in both Gross and Net Non-Performing Assets (NPAs), signaling challenges in asset quality. Encouragingly, the study observed a decline in NPAs over the last three years, marking a positive trend for the bank's financial stability. **K. Suresh (2023)** extended the comparative analysis to both public and private sector banks in India, focusing on their stability, liquidity, and profitability. The study involved six public and six private banks, selected based on their loan-to-deposit ratios, and utilized a T-test to assess differences between the two categories. Using data from annual reports and Reserve Bank of India records for the period 2017 to 2021, the findings revealed that although public sector banks had made significant progress, they continued to lag behind private sector banks in areas such as capital adequacy, management of bad loans, return on assets, and liquidity ratios. These differences underscore the structural and operational advantages often enjoyed by private banks, with implications for policymakers and financial institutions. Broadening the scope to Kenya, **Fardus Hassan Abdi (2024)** employed the CAMEL framework to analyze the financial performance of ten Kenyan commercial banks over a decade. The study focused on Return on Assets (ROA) as a key indicator and examined various influencing factors, including Capital Adequacy, Asset Quality, Management Efficiency, Earning Quality, Liquidity, Bank Size, and Operating Cost Efficiency. Using quantitative methods and multiple linear regression models, the study provided valuable insights into how these factors collectively impact ROA, offering a roadmap for improving efficiency and profitability in the banking sector.

Meanwhile**, Reena Rani Bansal (2024)** conducted a CAMEL-based evaluation of four prominent banks: YES Bank, SBI, Lakshmi Vilas Bank (LVB), and DBS Bank India Ltd (DBIL) over the period 2009 to 2020. The findings highlighted significant challenges faced by YES Bank and LVB. YES Bank exhibited strong performance until 2017, but high NPAs and declining interest income led to negative profitability by 2020. Similarly, LVB's collapse was attributed to poor loan management and insufficient capital, emphasizing the critical importance of prudent financial practices and robust risk management**. R. Jimmi Carter (2024)** explored the financial performance of two major public sector banks, SBI and Indian Bank, over five financial years from 2017–18 to 2021–22. Using the CAMELS framework, the study assessed key dimensions like Capital Adequacy, Asset Quality, Management Efficiency, Earning Quality, Liquidity, and Sensitivity. The analysis revealed that Indian Bank marginally outperformed SBI in overall performance, although both banks demonstrated robust financial health. The study also emphasized the role of strong financial institutions in driving economic growth and stability, underscoring the need for sustained improvements in governance and operational efficiency.

Together, these studies offer a comprehensive perspective on the financial health of banks across regions and timeframes. They highlight the importance of efficient management, adherence to regulatory norms, effective asset quality monitoring, and robust risk mitigation strategies for fostering financial stability and sustainable growth in the banking sector.

OBJECTIVES

- To analyze the capital adequacy of Indian public sector banks based on Basel III, DER, and LR.
- To evaluate the asset quality of Public sector banks by analyzing Gross NPA, Net NPA, and TITA ratios.
- To assess the trends of Public Sector banks over the financial years 2019-2020 to 2023-2024.

METHODOLOGY

The study evaluates the financial performance of five selected Public Sector Banks based on their Net Profit. This research analyzes PSB performance using Capital Adequacy and asset quality ratios. This study adopts a quantitative research methodology using second-hand data sources from the annual reports of banks, RBI publications, and moneycontrol.com. The analysis focuses on key ratios like Basel III, DER, LR for capital adequacy, and Gross NPA, Net NPA, and TITA for asset quality, calculated over five years (2019-2024). Descriptive statistics such as the mean and standard deviation are used for comparison.

RESULTS AND DISCUSSION

I. Capital Adequacy

Table 1 : Capital Adequacy

BANK	RATIO	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	SD	AVERAGE
SBI	Basel III	13.06	13.74	13.83	14.68	14.28	0.61	13.91
	DER	1.35	1.64	1.52	1.50	1.58	0.10	1.51
	LR	17.03	17.86	17.80	16.84	16.38	0.63	17.18
BOB	Basel III	13.30	14.99	15.68	16.24	16.31	1.24	15.30
	DER	1.29	0.86	1.20	1.03	0.84	0.19	1.09
	LR	16.11	14.99	14.87	15.00	14.24	0.67	15.04
UB	Basel III	12.81	12.56	14.52	16.04	16.97	1.94	14.58
	DER	1.55	0.80	0.72	0.86	0.27	0.46	0.84
	LR	16.29	16.62	16.82	25.62	14.35	4.40	17.94
CB	Basel III	13.65	13.18	14.90	16.68	16.28	1.54	14.93
	DER	1.08	0.84	0.70	0.78	0.66	0.16	0.81
	LR	18.42	19.59	18.55	18.28	17.15	0.86	18.39
BOI	Basel III	13.10	14.93	16.51	16.28	16.96	1.56	15.55
	DER	0.90	0.71	0.48	1.10	1.17	0.28	0.87
	LR	14.99	15.88	13.32	13.82	13.24	1.14	14.25

Source : Annual reports

Graph 1: Capital Adequacy

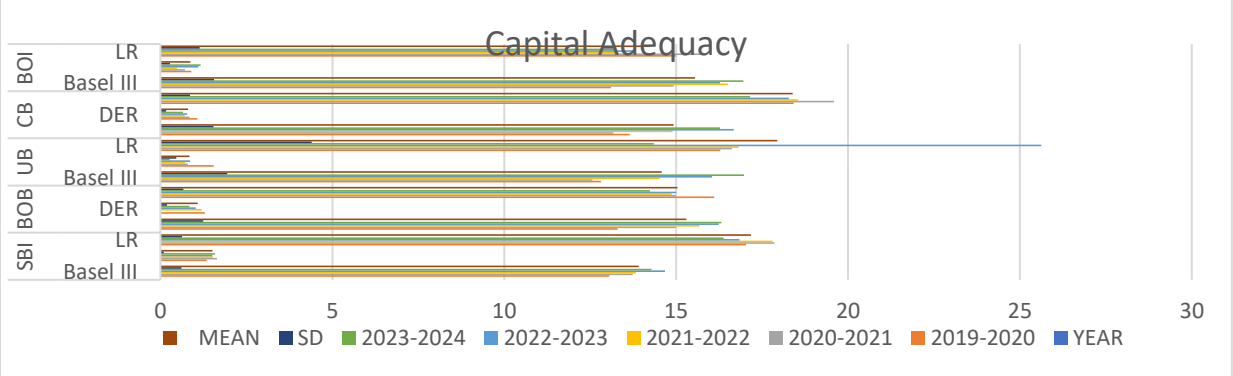

Table 1 displays the Capital Adequacy Ratios (Basel III, Debt Equity Ratio (DER), and Leverage Ratio (LR)) for the fiscal years 2019–2020 through 2023–2024 for five banks: SBI,BOB, UB, CB, and BOI. The Basel III Capital Adequacy Ratio of State Bank of India (SBI) improved steadily from 13.06% in 2019-2020 to 14.28% in 2023-2024, with an average of 13.91%. This consistent growth reflects strong risk management and regulatory compliance. Bank of Baroda (BOB) showed a significant increase in its capital adequacy ratio, rising from 13.30% in 2019-2020 to 16.31% in 2023-2024, with an average of 15.30%. This indicates improved asset quality and higher retained earnings. Union Bank's (UB) capital adequacy ratio rose sharply from 12.81% in 2019-2020 to 16.97% in 2023-2024, featuring a high standard deviation of 1.94%, which suggests volatility in capital levels. The peak ratio in 2023-2024 indicates effective recapitalization or strong profitability in recent years. Canara Bank (CB) exhibited a steady rise from 13.65% in 2019-2020 to 16.28% in 2023-2024, averaging 14.93%. This trend highlights consistent adherence to capital adequacy norms and risk management practices. Meanwhile, the Bank of India (BOI) saw a robust increase from 13.10% in 2019-2020 to 16.96% in 2023-2024, with an average of 15.55%. This growth suggests strong balance sheet management and improved internal capital generation. In terms of the Debt-to-Equity Ratio (DER), SBI's

DER fluctuated within a narrow range, peaking at 1.64 in 2020-2021 and stabilizing at 1.58 in 2023-2024. The low standard deviation of 0.10 indicates consistent leverage management. BOB experienced a decline from 1.29 in 2019-2020 to 0.84 in 2023-2024, with an average of 1.09, suggesting a reduction in reliance on debt and an improvement in financial stability. Union Bank's DER decreased significantly from 1.55 in 2019-2020 to 0.27 in 2023-2024, reflecting aggressive deleveraging and a reduction in financial risk. Canara Bank's DER also followed a steady decline from 1.08 in 2019-2020 to 0.66 in 2023-2024, averaging 0.81. This points to prudent financial practices and reduced dependence on borrowed funds. On the other hand, BOI's DER dropped initially but increased to 1.17 in 2023-2024, averaging 0.87, indicating dynamic debt management to balance growth and risk. The Leverage Ratio (LR) of SBI showed minor fluctuations, averaging 17.18%. There was a slight dip from 17.03 in 2019-2020 to 16.38 in 2023-2024, indicating stable capital adequacy despite growing asset size. BOB experienced a gradual decline in its LR from 16.11 in 2019-2020 to 14.24 in 2023-2024, averaging 15.04. This trend reflects better risk-weighted asset management but requires attention to maintain regulatory thresholds. Union Bank's LR peaked at 25.62 in 2022-2023 but fell sharply to 14.35 in 2023-2024, highlighting challenges in maintaining optimal leverage levels despite high capital adequacy. Canara Bank displayed stable LR from 18.42 in 2019-2020 to 17.15 in 2023-2024, averaging 18.39%, which indicates strong capital buffers to absorb potential losses. BOI saw a steady decline in LR from 14.99 in 2019-2020 to 13.24 in 2023-2024, averaging 14.25%. This may indicate increased lending or asset expansion, which warrants careful monitoring to sustain stability. The financial performance of these banks has improved significantly, showcasing effective regulatory measures and recapitalization efforts. However, Union Bank and Bank of India must address volatility in their leverage and capital ratios to ensure stability and align with long-term growth. These trends highlight the growing strength of the Indian banking sector and its key role in economic development.

II. Asset Quality

Table 2 : Asset Quality

s BANK	RATIO	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	SD	AVERAGES
SBI	Gross NPA	6.15	5.00	4.00	2.78	2.24	1.60	4.034
	Net NPA	2.23	1.50	1.02	0.67	0.57	0.69	1.198
	TITA	26.40	29.80	29.70	28.40	27.0	1.54	28.26
BOB	Gross NPA	9.40	8.87	6.61	4.00	3.00	2.845	6.376
	Net NPA	3.13	3.09	1.72	0.89	0.68	1.17	1.902
	TITA	23.00	22.00	24.71	24.85	23.32	1.20	23.57
UB	Gross NPA	14.15	13.74	11.11	7.53	4.70	4.072	10.24
	Net NPA	5.49	4.62	3.68	1.70	1.03	1.90	3.30
	TITA	27.6	30	29	26	24	2.38	27.32
CB	Gross NPA	8.21	8.93	7.51	5.35	4.23	1.99	6.84
	Net NPA	4.22	3.82	2.65	1.73	1.27	1.28	2.73
	TITA	24	22	22	23.30	24	1.0	23.06
BOI	Gross NPA	14.78	13.77	10.00	7.31	5.00	4.15	10.17
	Net NPA	3.88	3.35	2.34	1.66	1.22	1.11	2.49
	TITA	24	25.7	23.7	25	24	0.84	24.48

Source : Annual reports

Graph 2: Asset Quality

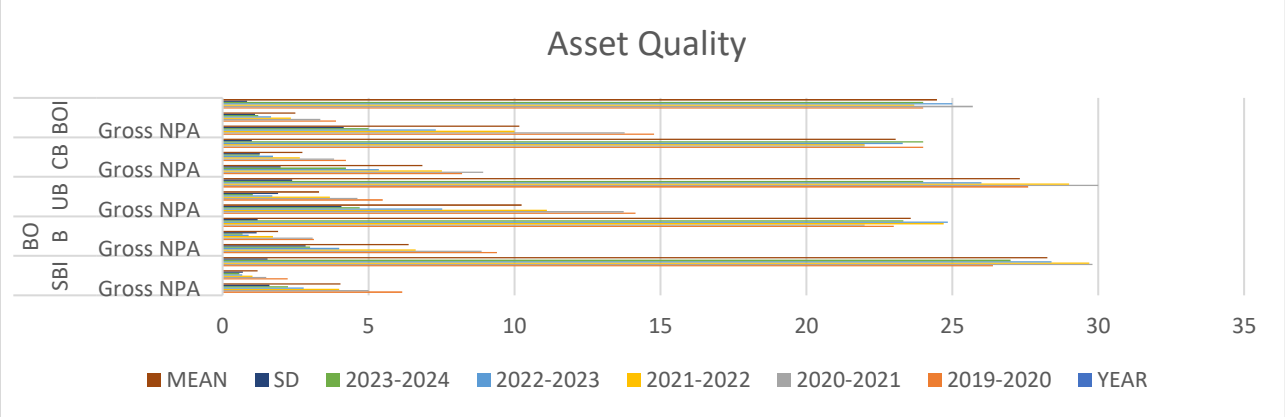

Table 2 evaluates the Gross Non-Performing Assets (Gross NPA), Net Non-Performing Assets (Net NPA), and Total Investment to Total Assets (TITA) for five leading Indian banks—SBI, BOB, UB, CB, and BOI—over the period from 2019 to 2024. SBI's Gross NPA decreased significantly from 6.15% in 2019-2020 to 2.24% in 2023-2024, with an average of 4.03%. This consistent decline reflects effective loan recovery mechanisms and improved credit monitoring. BOB's Gross NPA fell from 9.40% in 2019-2020 to 3.00% in 2020-2024, averaging 6.38%. This substantial improvement indicates enhanced risk management and asset quality initiatives. UB experienced a steep decline in Gross NPA from 14.15% to 4.70% (average 10.24%), highlighting aggressive efforts to resolve stressed assets, despite historically facing significant challenges with NPAs. CB's Gross NPA reduced from 8.21% in 2019-2020 to 4.23% in 2023-2024, averaging 6.84%. This trend suggests steady progress in managing bad loans and reducing credit risk. BOI saw a significant drop in Gross NPA from 14.78% in 2019-2020 to 5.00% in 2023-2024, with an average of 10.17%, underscoring robust recovery mechanisms and a focus on reducing stressed assets. For Net NPA, SBI's figures consistently declined from 2.23% in 2019-2020 to 0.57% in 2023-2024, averaging 1.20%. This indicates effective provisioning and improved recovery rates. BOB reduced its Net NPA from 3.13% in 2019-2020 to 0.68% in 2023-2024, with an average of 1.90%, demonstrating significant improvement in managing residual risks after provisioning. UB's Net NPA declined from 5.49% in 2019-2020 to 1.03% in 2023-2024, averaging 3.30%. Although this improvement is commendable, its historically higher Net NPA reflects past inefficiencies. CB's Net NPA showed a steady decrease from 4.22% in 2019-2020 to 1.27% in 2023-2024, averaging 2.73%, indicating consistent efforts in provisioning and asset management. BOI's Net NPA dropped significantly from 3.88% in 2019-2020 to 1.22% in 2023-2024, with an average of 2.49%, suggesting sustained enhancements in loan recovery and provisioning practices. The Total Investment to Total Assets (TITA) for SBI remained stable, averaging 28.26%, with slight fluctuations between 26.40% in 2019-2020 and 27.00% in 2023-2024. This shows a consistent allocation of assets towards investments. BOB's TITA was 23.00% in 2019-2020 and increased to 23.32% in 2023-2024, averaging 23.57%, reflecting a balanced approach to asset allocation and investment strategies. For UB, TITA decreased slightly from 27.6% in 2019-2020 to 24% in 2023-2024, averaging 27.32%. This decline suggests a reallocation of resources from investments to other productive areas, such as loans. CB's TITA saw a change from 27.6% in 2019-2020 to 24% in 2023-2024, with an average of 23.06%, indicating a stable investment strategy with minor year-on-year variations. BOI's TITA showed minimal variation, remaining at 24% from 2019-2020 to 2023-2024, with an average of 24.48%. This stability reflects a consistent focus on maintaining adequate investments to balance returns with liquidity. The ongoing improvement in asset quality metrics highlights the resilience of the Indian banking sector and its ability to manage credit risks. The declining NPA levels enhance profitability, boost investor confidence, and increase the capacity for credit expansion, aligning with the sector's role in supporting economic growth. However, it is crucial to maintain a continued focus on robust credit monitoring, risk assessment, and effective recovery mechanisms to ensure long-term stability and growth.

FINDINGS

The study reveals a positive trend in the Basel III ratios across all banks, indicating an improvement in their capital adequacy ratios from 2019–2020 to 2023–2024. This suggests that banks have enhanced their ability to absorb risks and financial shocks. Additionally, the Debt to debt-equity ratio (DER) has shown a consistent decline for most banks, signifying improved financial leverage and a stronger capital base. Despite slight fluctuations, the Leverage Ratio (LR) has generally remained stable, indicating effective

management of total assets with the capital base. In terms of Asset Quality, there has been a significant reduction in Gross NPA across all banks, reflecting improved loan recovery and asset management processes in public sector banks. Similarly, Net NPA figures have decreased, highlighting better provisioning policies and a reduction in the burden of bad loans on the balance sheets. The TITA ratio has remained stable for all banks, indicating consistent allocation of total assets into liquid and secure investments. Furthermore, the bank-specific observations illustrate positive trends. State Bank of India (SBI) has demonstrated robust capital adequacy and steady improvement in asset quality, particularly in the reduction of Gross and Net NPA. Bank of Baroda (BOB) has exhibited significant improvements in Gross NPA and Net NPA, aligning with strong capital adequacy levels under Basel III. Despite volatility in its Leverage Ratio, Union Bank (UB) has achieved remarkable improvement in Gross and Net NPA, suggesting significant efforts in risk management. Canara Bank (CB) has consistently performed well in capital adequacy and experienced gradual improvement in asset quality, particularly in NPAs. Bank of India (BOI) has also shown notable reductions in Gross and Net NPA over the five years, indicating successful recovery strategies.

SUGGESTIONS

Public sector banks need to strengthen capital buffers to enhance resilience to financial shocks and maintain long-term stability, possibly through equity infusions or retained earnings. Enhanced NPA Management Strategies help to Implement more robust monitoring and early detection mechanisms. Use advanced analytics and AI-driven solutions for borrower risk assessment and recovery. Restructure non-performing loans through resolution frameworks. Leverage Digital Technologies for Asset Quality Management like using blockchain, AI, and machine learning to streamline risk management, optimize asset quality, and improve loan disbursal and recovery systems. Collaborate on sharing data for preventive measures. Proactive Regulatory Compliance like Align with evolving domestic and international regulatory frameworks, such as Basel III norms. Adapt capital allocation to regulatory updates and market developments. Continuous Capacity Building is investing in staff training and development, focusing on risk management, financial analysis, and technology adoption for sustained financial performance improvements.

CONCLUSION

In conclusion, the analysis of Capital Adequacy and Asset Quality of Indian Public Sector Banks from 2019 to 2024 reveals a clear trajectory of improvement in both areas. Public sector banks have shown notable progress in bolstering their capital buffers, aligning with Basel III norms, and enhancing their capacity to absorb financial shocks. This has been evidenced by improvements in key ratios such as Basel III, Debt-to-equity ratio (DER), and Leverage Ratio (LR). Simultaneously, the significant decline in both Gross and Net Non-Performing Assets (NPAs) across all banks indicates better asset management, loan recovery, and provisioning strategies. Moreover, the stability in the Total Investments to Total Assets (TITA) ratio demonstrates a consistent approach to asset allocation, contributing to overall financial health. While challenges remain, particularly in addressing the volatility in some leverage ratios, the study highlights a positive shift toward financial resilience and efficiency among public sector banks. This progress underscores the banks' capacity to adapt to regulatory changes and evolving financial landscapes, ensuring sustained stability in India's banking sector. To maintain and build upon these gains, public sector banks must continue strengthening capital buffers, adopting advanced technologies for asset quality management, and aligning with evolving regulatory frameworks. These measures will ensure long-term stability and a more robust response to future economic challenges.

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