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A Comparative Evaluation of Gross Non-Performing Assets of Listed Public Sector and Private Sector Banks in India: An Empirical Study

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Abstract:
Non-Performing Assets (NPAs) are one of the major factors which ascertain the financial health and asset quality of banks. A high level of NPAs has a negative impact on profitability, liquidity, lending capability and financial stability. Over the past decade, significant reforms have taken place in the Indian banking sector, leading to enhanced credit monitoring, recovery procedures, and regulatory oversight. Nevertheless, there is continued variation in performance of Public Sector Banks (PSBs) and Private Sector Banks (PVBs) on asset quality and Credit Risk Management. The aim of the present study is to assess and compare the Gross Non-Performing Assets (Gross NPA %) of selected Public Sector Bank and Private Sector Bank in India during 2019-20 and 2023-24.

The study has been done on secondary data obtained from published annual report and financial statement of ten leading banks of the country which include five Public Sector Banks (State Bank of India, Canara Bank, Punjab National Bank, Karnataka Bank and Bank of Baroda) and five Private Sector Banks (ICICI Bank, HDFC Bank, Axis Bank, Kotak Mahindra Bank and IndusInd Bank). To explore the trend and variability of Gross NPAs, descriptive statistics were used. The asset quality performance of the two banking sectors was compared through the Independent t test.

The results indicated a higher Gross NPA ratio in the Public Sector Banks during the entire period under study than the corresponding of Private Sector Banks. The results of Independent t test showed that there is statistically significant difference between Gross NPA percentage of the two groups ($p < 0.001$) thus suggesting that the Private Sector Banks displayed better Asset Quality and Credit Risk Management. The study is important in the literature because it brings up to date comparative evidence on the performance of NPAs in the banks post major banking reforms and emphasizes on the need for enhancing credit appraisal, monitoring and recovery mechanism in the Public Sector Banks.

Keywords: Non-Performing Assets, Gross NPA, PS Banks, Private Sector Banks, Asset Quality, Credit Risk Management, Independent Sample t test, Indian Banking.

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Introduction

The banking sector is one of the most important sectors contributing to the economic development of a country, which involves mobilization of savings, facilitation of investment, credit to the productive sector, and industrial, commercial and agricultural activities. The efficient banking system plays an important role in ensuring the smooth operation of financial markets, also in the creation of economic stability, financial inclusion, employment and sustainable economic growth. The role played by banks as financial intermediaries in transferring funds from surplus units to deficit units is also very significant with regard to capital formation and the development of the nation. Therefore, financial stability and efficiency are key considerations for sustaining trust in the financial system among banks.

The quality of the bank's loan portfolio is one of the crucial financial indicators of the bank's health, which is typically measured by the proportion of Non-Performing Assets (NPAs). Non-Performing Asset (NPA) is a loan or advances where the principal or interest has not been paid by the borrower within the time frame as given by the Reserve Bank of India (RBI). In the light of the prudential norms of the RBI, a loan account is said to be a Non-Performing Asset if the interest or the principal is overdue for 90 days. In the eyes of the bank, NPAs are viewed as a key indicator of asset quality as they directly affect its profitability, liquidity, capital adequacy, and financial performance. A progressive rise in NPAs will impact the bank's lending potential, lower interest income, decrease the capital base, and have a negative impact on the operational efficiency of the bank.

It's not just banks that are impacted by the accumulation of NPAs. Stressed assets have a detrimental impact on credit availability for productive sectors, investment, borrowing rates and on economic growth generally. Hence, the effective management of NPAs has emerged as one of the top priorities of commercial banks, financial regulators, financial policy makers and governmental authorities. In the past decade, the Reserve Bank of India and the Government of India have implemented various policy measures to bolster asset quality, such as introducing tougher prudential norms, tightening provisioning norms, boosting credit monitoring, implementing digital loan tracking and enacting several legal changes to expedite the recovery process for default loans.

Indian banks can be classified into the following categories: Public Sector Banks (PSBs), Private Sector Banks (PVBs), Foreign Banks, Regional Rural Banks, Small Finance Banks and Payments Banks. Of these, PS banks and PS banks have the major share of banking assets, deposits and advances in the country. While both are governed by the Reserve Bank of India, they have significantly varied in terms of their ownership, governance, autonomy, credit appraisal process, technology adoption and risk management processes.

Public Sector Banks' NPAs have been comparatively more than that of the Private Sector Banks in the history. It has been cited due to a number of reasons such as heavy exposure to priority sector lending, infrastructure lending, corporate loans, legacy stressed loans and policy-driven credit expansion. Public Sector Banks can contribute to the development, by providing credit to the sectors which may carry higher credit risk but have significance for inclusive economic development. As such, they can be more prone to loan defaults in an economic downturn. Private Sector Banks, on the other hand, have generally been able to keep their Gross NPA ratios low with better credit appraisal processes, well-developed risk assessment models, technology-enabled monitoring systems, data analytics and efficient recovery practices. Their flexibility in operation and profitability has helped them to keep their asset quality relatively high throughout the years.

Structural reforms are in full swing in the Indian banking sector to make it more financially stable in the past decade and to clear the stressed asset issues. The introduction of the Insolvency and Bankruptcy Code (IBC), introduction of the Prudential Framework for Resolution of Stressed Assets, the Asset Quality Review (AQR), bank recapitalization initiatives, introduction of Basel III norms and the strengthening of the recovery mechanism have helped to significantly enhance the quality of banking assets. It has led to a steady improvement in Gross NPAs in the banking sector and strengthened the financial system. However, there remains a gap in the asset quality between PS Banks and PSF Banks, which needs to be analysed in a systematic manner.

In the recent years both the types of banks have shown improvement in their Gross NPA ratio, which is attributed to effective monitoring of loans, better provisions, improved recovery processes and the adoption of technology in CRM. Yet there are some doubts that the improvement has narrowed the disparity between the Public Sector Banks and private sector banks, and if there is still a disparity in the asset quality of the banks. The knowledge of such differences is important for policy makers, regulators, investors, bank management and all other stakeholders as it helps insight into the effectiveness of credit risk management practices adopted by different banking institutions.

In this backdrop, the present study conducts a comparative analysis of the Gross Non-Performing Assets of some selected Public Sector Banks and Private Sector Banks of India over the period of 6 years from 2019-20 to 2023-24. The study covers major 5 public sector banks such as State Bank of India, Canara Bank, Punjab National Bank, Karnataka Bank and Bank of Baroda and top five private sector banks ICICI Bank, HDFC Bank, Axis Bank, Kotak Mahindra Bank and IndusInd Bank. Secondary data has been gathered from published annual report and financial statement of the respective banks.The results will be useful in the ongoing body of literature related to banking performance as it gives the latest empirical evidence on asset quality following the recent banking reforms and bring some practical implications to enhance the stability of the Indian banking system through strengthening the credit risk management.

2. Literature Review

Berger and DeYoung (1997) did a pioneering study which explored the link between problem loans and cost efficiency among US commercial banks. Based on panel data analysis the authors hypothesized the relationship between operational efficiency and loan quality as follows: bad management hypothesis, bad luck hypothesis, skimping hypothesis and moral hazard hypothesis. Their empirical findings validated the bad management hypothesis, which suggests that the poor managerial practices and weak credit monitoring result in higher rate of NPLs. The study found that operational efficiency and the system of credit appraisal are crucial to enhance asset quality and lower credit risk.

Rajan and Dhal (2003) used scheduled commercial bank panel data to examine the determinants of NPA in PSU banks of India. The study revealed that macro-economic factors as well as the bank-specific factors had significant impact on the NPAs. The credit growth, the level of economic activity, the size of banks,

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and the deployment of loans in various sectors were found to be important indicators of asset quality. The authors noted that effective credit risk management, well-designed credit policies, and positive macroeconomic conditions are among the factors that help regulate NPAs in the banking sector.

Bardhan and Mukherjee (2016) found the NPAs of banks are influenced by some factors which varies from bank to bank using panel data estimation technique in Indian commercial banks. The research found that there are significant relationships between profitability, capital adequacy, operational efficiency and management quality with the level of NPA. Banks that have a superior financial performance and good management were observed to have lower NPAs. The authors have drawn conclusions that efficiency of the operations and enhanced internal control mechanisms are crucial to lower credit risk and enhance asset quality.

Bawa et al. (2019) analyzed the determinants of NPAs of Indian banks using a wide-ranging framework of 31 financial ratios and a method of moments technique, the Generalized Method of Moments (GMM). The study found that the ROA, the intermediation cost, asset growth, leverage and previous level of NPAs were all significantly related to the current level of NPAs. The results showed that financially efficient banks are more likely to manage the credit risk and to have better asset quality. The authors suggested the need for persistent monitoring of financial indicators for enhancing credit risk management.

Brahmaiah (2019) has studied the factors behind the increase in NPAs of Public Sector Banks in India. According to the study, Public Sector Banks had relatively high stressed asset levels due to higher Priority Sector Lending, Infrastructure loans and Policy directed lending programmes. The research also pointed out that high NPAs recorded by the Public Sector Banks vis-à-vis the private banks could be attributed to their governance practices, recovery delays and weaker monitoring systems. The study suggested the need to improve the loan appraisal process and recovery mechanisms to improve asset quality.

Pramahender (2022) critically analyzed the problems of Non-Performing Assets in Indian banks and explained the effectiveness of the banking reforms took place recently. The study also noted that measures like the Insolvency and Bankruptcy Code (IBC), Asset Quality Review (AQR), tougher provisioning norms and digital monitoring systems have helped in improving asset recovery and lowering stressed assets. However, the NPAs of Public Sector Banks remain comparatively high due to inherited NPAs and issues pertaining to credit control in the banks. The study suggested more robust governance, better credit appraisal and better recovery to assure financial stability in the longer term.

Das (2023) studied the recent trend and factors associated with NPAs in Indian banking sector. The study pointed out that regulatory changes, technological development and digital credit monitoring systems, and robust provisions have contributed to substantially bring down Gross NPAs in Indian banks. Despite the similarities, there are still disparities between Private Sector Banks and PSOs since all banks have different governance, efficiencies, and practices related to credit risk. The study highlighted the need for ongoing risk assessment and technology based credit monitoring for continued asset quality improvement.

Mishra and Padhan (2024) studied the effect of macroeconomic indicators on NPA of banks in Indian Banking industry. The study also identified the advanced econometric techniques that are likely to influence the level of NPAs, including inflation, economic growth, unemployment, and interest rates. The results showed that the positive macroeconomic environment enhances the capacity of loan repayment

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and improves the asset quality, while the bad macroeconomic environment leads to an increase in credit risk and loan defaults. The authors recommended that risk management strategies at the bank level should be supported with a stable macroeconomic policy.

3.Objectives of the Study

1. To evaluate the Gross Non-Performing Assets (Gross NPA %) of selected Public Sector Banks and Private Sector Banks in India
2. To determine whether a statistically significant difference exists between Gross NPA percentages of Public Sector Banks and Private Sector Banks

4. Hypotheses

Hypothesis 1

H_0: There is no significant difference in Gross NPA (%) between selected Public Sector Banks and Private Sector Banks.

H_1: There is a significant difference in Gross NPA (%) between selected Public Sector Banks and Private Sector Banks.

5. Research Methodology

The present study is carried out using quantitative, descriptive, analytical and comparative research design to evaluate and compare the Gross Non-Performing Assets (Gross NPA %) of selected Public Sector Banks and Private Sector Banks in the country of India in the period 2019-20 to 2023-24. The study is conducted through secondary data sources that were available online, such as the published annual report, audited financial statements, investor presentations, the official websites of the selected banks and publications of the Reserve Bank of India (RBI). The sample consists of ten top commercial banks namely five Public Sector Banks (State Bank of India, Canara Bank, Punjab National Bank, Karnataka Bank, and Bank of Baroda) and five Private Sector Banks (ICICI Bank, HDFC Bank, Axis Bank, Kotak Mahindra Bank, and IndusInd Bank). The asset quality indicator used was gross NPA (%), which is defined as the Gross Non-Performing Assets (GNPA) in terms of Gross Advances. The data were analysed with descriptive statistics (Mean and Standard Deviation) to look at the trend and variability in Gross NPAs and Independent Samples t-test (Welch's t-test) was used to compare the mean Gross NPA (%) of Public Sector Banks and Private Sector Banks. The hypotheses have been tested at 5% level of significance ($\alpha = 0.05$) and the null hypothesis has been rejected at 5% level whenever the p-value has been less than 0.05. Data have been compiled and analysed in Microsoft Excel, with the data presented and interpreted to analyse the performance of the two banking sectors on asset quality.

6. Data Analysis and Interpretation

To evaluate and compare Gross Non-Performing Assets (Gross NPA %) during the five years 2019–20 to 2023–24, five Public Sector Banks (PSBs) (State Bank of India, Canara Bank, Punjab National Bank, Karnataka Bank, Bank of Baroda) and five Private Sector Banks (PSBs) (ICICI Bank, HDFC Bank, Axis

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Bank, Kotak Mahindra Bank, IndusInd Bank) were selected. The published Annual Reports and Audited Financial Statements of the respective banks were used for secondary data. The main measure of asset quality was gross NPA (%).

Descriptive statistics such as Mean and Standard Deviation were first calculated to obtain general information about the average level of Gross NPAs and the variation of these selected banks. After this, an Independent Samples t-test (Welch's t-test) was used to ascertain if there is any statistically significant difference between the Gross NPA performance of Public Sector Banks and Private Sector Banks.

Table 1: Descriptive Statistics of Gross NPA (%)

Bank Type	Bank	Mean Gross NPA (%)	SD
Public Sector	Canara Bank	6.2	2.38
	State Bank of India	3.66	1.69
	Punjab National Bank	9.98	4.64
	Karnataka Bank	4	0.74
	Bank of Baroda	5.66	3.06
	Overall Mean - Public Sector	6.52	3.49
Private Sector	ICICI Bank	4.14	2.42
	HDFC Bank	1.11	0.14
	Axis Bank	2.69	1.4
	Kotak Mahindra Bank	2.03	0.7
	IndusInd Bank	2.38	0.54
	Overall Mean - Private Sector	2.61	1.67

The descriptive statistics shows that during the study period; the selected Public Sector Banks have shown significantly higher Gross NPA (%) as compared to the selected Private Sector Banks. Punjab National Bank had the highest average Gross NPA at 9.98% followed by Canara Bank (6.20%) and Bank of Baroda (5.66%) while State Bank of India (3.66%) and Karnataka Bank (4.00%) had relatively lower NPA levels in the group. On the other hand, Private Sector Banks had the highest average Gross NPAs (GNPAs) of 4.14% for ICICI, 2.69% for Axis, 2.38% for IndusInd, 2.03% for Kotak Mahindra and 1.11% for HDFC Bank. The average Gross NPA (Mean = 6.52%, SD = 3.49) of the Public Sector Banks was significantly high compared to the Private Sector Banks (Mean = 2.61%, SD = 1.67) which suggests that the Private Sector Banks had better asset quality, lower credit risk and more consistent NPA management during the period under study.

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Table 2: Independent Samples t-test for Gross NPA (%)

Hypothesis	Test	t-value	p-value
H_0: No significant difference in Gross NPA (%) between Public and Private Sector Banks	Independent Samples t-test (Welch)	5.048	0.000

Independent Samples t test (Welch) shows that there exists a significant difference between the Gross NPA (%) of the selected Public Sector Banks and Private Sector Banks ($t = 5.048$, $p = 0.000$). The p-value is below the 5% level of significance ($p < 0.05$) and thus the null hypothesis is rejected and the alternative hypothesis accepted. This finding is in line with the fact that the Gross NPA level of the PSBs has been found to be different from the Private Sector Banks during the study period. The Public Sector Banks have recorded the higher Gross NPA as compared to Private Sector Banks, which indicates that asset quality is comparatively weaker and the credit risk is also high in the former banks, while the latter banks have maintained comparatively lower Gross NPA, indicating comparatively good credit appraisal, monitoring of loans and credit risk management practices.

7.Conclusion

According to the comparative analysis, the selected Private Sector Banks have performed better than selected Public Sector Banks in terms of asset quality in study period 2019–20 to 2023–24. Public Sector Banks had a much higher average Gross NPA ratio as compared to Private Sector Banks, indicating higher credit risk and more stressed assets. The result of Independent Sample t-test also showed that there was a statistically significant difference between the Gross NPA (%) in the two banking sectors ($p < 0.05$), thus rejecting the null hypothesis. The results indicate that Private Sector Banks have been more effective in managing their loan portfolios to keep them healthy by using robust credit appraisal systems, monitoring borrowers, implementing recovery action plans in time and appropriate credit risk management.

In spite of a fall in Gross NPA value in both banking segments, it was observed that the Gross NPA value of Public Sector Banks remained high as compared to Private Sector Banks throughout the study period. The positive impact of banking reform, increased norms regarding provisioning, better recovery, and better loan monitoring explain the improvement in asset quality. The results, however, show that further strengthening of the credit evaluation process, using more sophisticated risk management techniques, better post-disbursement monitoring and recovery measures are needed to lower the number of stressed assets and increase the financial stability of Public Sector Banks.

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