



MAHARSHI DAYANAND UNIVERSITY, ROHTAK

(A State University under Haryana Act No. XXV of 1975)

NAAC Accredited 'A+' Grade

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DEPARTMENT OF ECONOMICS

No. Eco./2024/ 630

Dated: 30/08/2024

NOTICE

The Pre-submission seminar of the following student will be held on 04.09.2024 at 03:00PM in the Smart Class Room, Department of Economics, M.D. University, Rohtak.

Sr. No.	Name	Topic
1	Ms. Ananya Bhatia	A Comparative Study of NPA in Public and Private Sector Banks in India After Second-Generation Reforms

All the HODs/Faculty Members and Research Scholars of the Faculty of Social Sciences are cordially invited to attend the seminar.

Sd

Head (Rajesh Kumar)
Department of Economics
M.D. University, Rohtak

Endst. No. Eco./2024/F-241/

Dated: 30.08.2024

Copy of the above is forwarded to the following for information and necessary action:

1. Dean, Faculty of Social Sciences, M.D. University, Rohtak
2. HODs & Faculty members - Deptt. of Library and Information Science, Public Administration, Psychology, Political Science, Sociology, History, Defense Studies, Geography.
3. All Faculty members and research scholars of the Department of Economics.
4. The Supervisor of the candidate concerned.
5. Ph.D. Candidate (Concerned).
6. The Director, University Computer Centre, M.D. University, Rohtak with the request to upload the notice on the Department page for wide spread information.

(Rajesh Kumar)

Head

Department of Economics

Head,

Department of Economics

M.D. University, Rohtak

A COMPARATIVE STUDY OF NPA IN PUBLIC AND PRIVATE
SECTOR BANKS IN INDIA AFTER SECOND-GENERATION
REFORMS

Pre-Submission seminar

Summary Report

SUBMITTED TO DEPARTMENT OF ECONOMICS
MAHARSHI DAYANAND UNIVERSITY, ROHTAK

FOR THE AWARD OF DEGREE OF

DOCTOR IN PHILOSOPHY

IN

ECONOMICS



Under the Supervision of

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SUBMITTED BY

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D.O.R. 26.11.2019

DEPARTMENT OF ECONOMICS
MAHARSHI DAYANAND UNIVERSITY
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2024

INTRODUCTION

The financial sector in India gets its strength primarily from the banks. An efficient banking system is thus a basic need for a country like India. However, non-performing assets (NPAs) significantly hamper banking activities and have far-reaching impacts on the financial health of banks and the broader economy. When loans and advances issued by banks become non-performing, it indicates that borrowers have defaulted on their repayments, leading to a rise in NPAs. This scenario directly affects the profitability of banks as they need to set aside a significant portion of their profits as provisions to cover potential losses (Jayaraman and Bhuyan, 2020). High levels of NPAs strain banks' capital adequacy, limiting their ability to lend further and support economic activities (Lokare, 2014). Moreover, NPAs reduce banks' overall efficiency and productivity, as resources are diverted towards recovery efforts rather than growth initiatives (Kanoujiya and Rastogi, 2024). Additionally, the increasing burden of NPAs undermines investor confidence and can lead to tightening liquidity in the financial markets. In severe cases, a high NPA ratio can trigger a banking crisis, necessitating government intervention and bailout measures. Thus, managing NPAs is crucial for ensuring the stability and growth of the banking sector and the economy.

Definition of NPAs

According to the Reserve Bank of India (RBI) definition, "an asset, including a leased asset, is considered an NPA when it is no longer producing income for the bank". RBI defines the time frame (the duration for the interest/principle not paid) and changes it as and when required. The RBI has periodically adjusted this specific period: from four quarters ending March 31, 1993, to three quarters ending March 31, 1994, and subsequently to two quarters ending March 31, 1995. To align with international best practices and ensure transparency, the RBI further tightened the delinquency norm, requiring loans to be recognized as non-performing advances if overdue for 90 days, effective March 31, 2004.

As per RBI "A non-performing asset shall be a loan or an advance where-

- 1) Interest/instalment of principal remains overdue for more than 90 days in respect of a term loan.
- 2) The account remains "out of order" for more than 90 days in respect of an overdraft/cash credit.
- 3) The bill remains overdue for more than 90 days in the case of bills purchased and discounted.

4) Interest or installment of principal remains overdue for two harvest seasons but for a period not exceeding two half years in the case of an advance granted for agricultural purposes &

w.e.f. 30-09-2004, the following further amendments, were issued by the apex bank:

a) A loan granted for a short-duration crop will be treated as NPA if the installment of principal or interest remains overdue for two crop seasons.

b) A loan granted for a long-duration crop will be NPA if the installment of principal or interest remains overdue for one crop season.

Any amount to be received remains overdue for more than 90 days in respect of other accounts.”

Types of NPAs

There are two categories of NPAs: Gross NPA and Net NPA. These metrics are crucial indicators of a bank's financial health.

- **GROSS NPA (GNPA):** Gross NPA is defined as the aggregate amount of NPAs in a bank's portfolio, as per RBI guidelines. In other words, it is the total value of outstanding loans on which banks have not received interest income for more than 90 days. Gross NPA is an absolute measure that displays the quality of loan assets of the banks, which are further divided into sub-standard, doubtful, and loss assets.

Gross NPA ratio = Gross NPAs / Gross Advances

It is a relative measure and reflects the asset quality of the banks. The higher the ratio, the lower the quality of the asset.

- **NET NPA (NNPA):** Net NPAs refer to those Non-Performing Assets for which the bank has created provisions. The Net NPA provides a more accurate measure of the cost to banks. Net NPAs are calculated by deducting items like interest due but not recovered, the part payment received and kept in a suspense account and it shows the actual burden of banks.

Net NPAs = Gross NPAs -Deductions/Provisions

Deductions/provisions include:

- Provisions kept for NPA Accounts in accordance with asset categorization.
- Floating Provisions
- Claims for DICGC and ECGC received and kept pending adjustment
- Receipt of a part of a payment and holding in a suspense account or another account of a like nature

- The “balance in the Sundries Account (Interest Capitalization - Restructured Accounts) related to NPA Accounts.”

$$\text{Net NPA Ratio} = \text{NNPA} / \text{Gross Advances}$$

History of NPAs

The concept of NPA emerged in the 1990s, following the introduction of prudential standards in the banking sector. Previously, it was customary to debit interest from loan accounts regardless of their irregularity or lack of payment. However, this practice has shifted following the RBI's adoption of new standards that are consistent with international standards. Before this, the "Health Code System," introduced in 1985, on the recommendation of the Pendharkar Committee, 1981 recommended categorizing bank accounts into numerous codes (namely 1-satisfactory, 2-irregular, 3-Viable, 4-Non-viable, 5-Recalled, 6-Suit file Account, 7-Decreed Account, 8-Bad and doubtful asset) based on their status and any irregularities present. Advances with codes 5 to 8 were considered NPA.

To enhance the objectivity of the bad debt accounting system and replace subjective criteria with more scientific standards, the RBI introduced prudential norms in 1992. These norms were designed to align with international standards and ensure greater transparency. These norms required banks to recognize income from NPAs on a cash basis and classify assets as Standard, Substandard, Doubtful, or Loss based on their performance. Provisioning norms were also introduced to ensure banks set aside funds for potential losses, with higher provisions required as asset quality deteriorates. From 1999, provisions for standard assets were mandated to build reserves, and since 2010, the Provisioning Coverage Ratio (PCR) has been set at a minimum of 70% to provide a buffer against NPAs. The Revised Framework for Resolution of Stressed Assets, published in 2019, emphasized timely resolution or insolvency processes to mitigate risks associated with NPAs.

Categories of NPAs

Categories of NPAs refer to the classification of non-performing assets based on their duration and severity of delinquency. These categories help assess the asset quality and the necessary provisioning requirements. The primary categories are Standard, Substandard, Doubtful, and Loss Assets, each representing different levels of risk and potential recovery challenges.

- **Standard asset:** Standard assets are the ones in which the bank is receiving interest as well as the principal amount of the loan regularly from the customer and the arrears of interest and the principal amount of the loan do not exceed 90 days at the end of the

financial year. Standard assets are further divided into two categories: **Regular and Stressed accounts**. Regular accounts, as the name implies, are loans or advances where the borrower consistently meets their payment obligations, with no signs of financial distress. Moreover, Stressed accounts are those showing signs of potential or existing trouble. They are further categorized into Special Mention Accounts (SMAs) based on the duration of overdue payments:

- **SMA-0 (Special Mention Account-0):** Accounts where the principal or interest payment is overdue between 1 to 30 days. These accounts are showing early signs of stress but have not yet become non-performing.
- **SMA-1 (Special Mention Account-1):** Accounts where the principal or interest payment is overdue between 31 to 60 days. These accounts are experiencing more significant distress, indicating a higher risk of becoming non-performing if the situation is not addressed.
- **SMA-2 (Special Mention Account-2):** Accounts where the principal or interest payment is overdue between 61 to 90 days. These accounts are in serious distress and are closer to being classified as non-performing if corrective action is not taken promptly.

These SMA categories help banks and regulators identify potential problem areas early and implement preventive measures before the accounts deteriorate further into non-performing status.

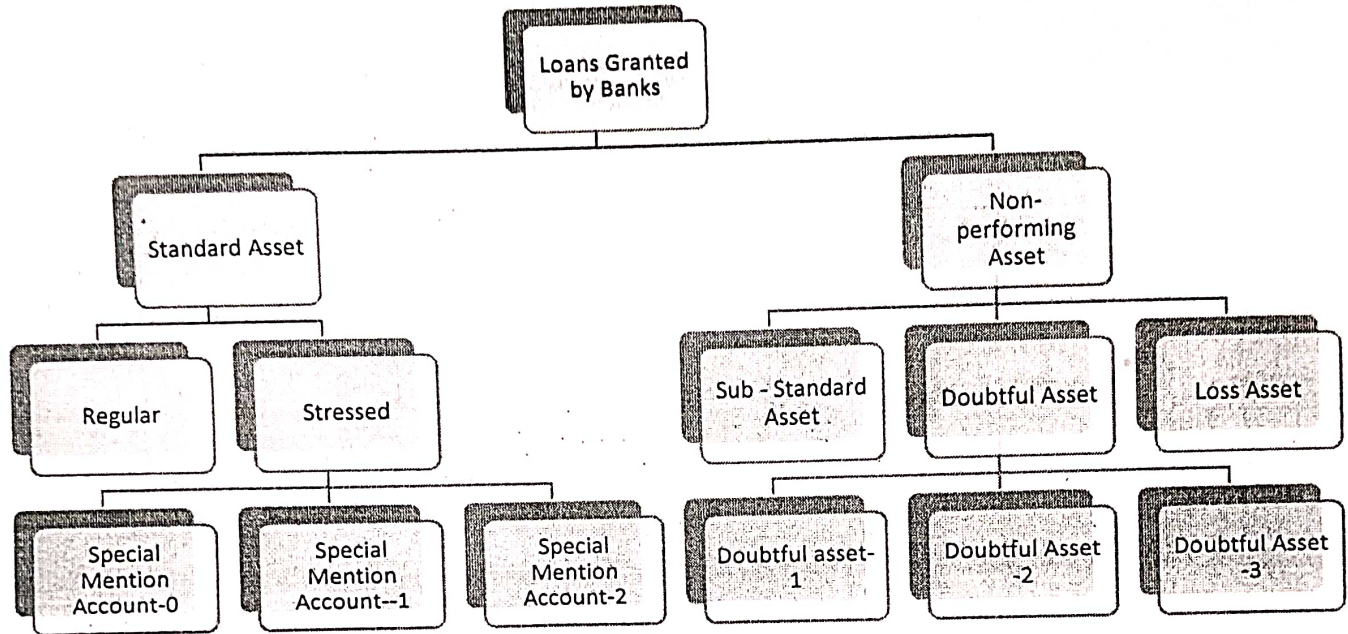
- If the asset fails to be in the category of standard asset that is an amount due more than 90 days then it is converted to NPA and NPAs are further classified into the following three categories namely substandard, Doubtful, and Loss Asset on the basis of the number of days account is in non-performing category.

1. Substandard asset: With effect from 31 March 2005, a sub-standard asset is one that has remained NPA for a period less than or equal to 12 months. In other words, such assets will have credit problems that undermine the debt's disposal and may lead to bank losses if deficiencies are not remedied on time.

2. Doubtful asset: With effect from 31 March 2005, an asset would be classified as doubtful if it has remained in the substandard category for 12 months. Doubtful assets are further classified into Doubtful asset-0, Doubtful asset-1, Doubtful Asset-2.

3. Loss Asset: Where loss has been identified by the bank or internal or external auditors or the RBI inspection but the amount has not been written off wholly. It is an asset identified by the bank auditors or by RBI inspection as a loss asset.

Fig 1: Categories of NPAs



Definition of Terms and Concepts

- **Restructured loans:** Restructured assets or loans are those that have had their payback duration extended, their interest rate cut, a portion of the loan converted to equity, new financing provided, or a combination of these actions. As a result, when a poor debt is restructured, it is restructured as a new loan. A restructured loan also reflects a bank's poor asset quality. This is because a restructured loan was either a prior non-performing asset (NPA) or was changed into a new loan. The borrower's ability to repay it in the future remains a risky issue.
- **Written-off Asset:** refers to loans or advances that a bank or financial institution has removed from its balance sheet because they are deemed uncollectible. This typically happens when the borrower is unable to repay the loan, and all recovery efforts have been exhausted. Although the asset is written off, the bank may still attempt to recover the amount through legal means or other channels, but it no longer expects to receive the full value of the loan

- **Stressed Assets:** are the sum of NPA, restructured loans, and written-off assets. As per RBI guidelines “stressed loans” mean loan exposures that are classified as non-performing assets (NPA) or as special mention accounts (SMA).¹
- **Priority Sector:** The Priority Sector refers to sectors that the government of India and the Reserve Bank of India (RBI) have identified as being crucial for the economic development of the country. Banks are required to allocate a specific portion (currently 40% of Adjusted Net Bank Credit (ANBC) for domestic scheduled commercial banks and foreign banks with 20 branches) of their lending (known as Priority Sector Lending or PSL) to these sectors to ensure that credit is available to sectors that are essential for socio-economic development. Some of the main sectors included in the Priority Sector are: **Agriculture (including allied activities), Micro, Small, and Medium Enterprises (MSMEs), Education, Housing, Export Credit, Social Infrastructure, Renewable Energy, Weaker Sections (including Scheduled Castes/Scheduled Tribes, minorities, etc.) and others.**
- **Non-Priority Sector:** Non-Priority Sector includes industries or sectors that do not fall under the Priority Sector Lending categories. These sectors typically represent commercial and industrial ventures that are not directly related to socio-economic development, and lending to these sectors is guided more by business considerations rather than developmental objectives.
- **Slippage Ratio:** The Slippage Ratio is defined as the amount of fresh accretion to NPAs during the year divided by the standard advances at the beginning of the year. This ratio indicates the proportion of standard loans that have deteriorated into non-performing assets over the year.

$$\text{Slippage Ratio} = \frac{\text{Fresh accretion to NPAs during the year}}{\text{standard advances at the beginning of the year}}$$
- **Recovery Ratio:** The Recovery Ratio is defined as the reduction in Gross NPA (GNPA) during a given year, divided by the GNPA at the beginning of that year. It measures the effectiveness of a bank's efforts in recovering bad loans over the year.

$$\text{Recovery Ratio} = \frac{\text{Reduction in GNPA during the year}}{\text{GNPA at the beginning of the Year.}}$$

¹ Master Direction – Reserve Bank of India (Transfer of Loan Exposures) Directions, 2021.

RESEARCH GAP

Recognizing the severity of the NPA issue in the banking sector, extensive research has been conducted on the NPAs of Scheduled Banks. However, existing literature lacks a comprehensive comparative analysis of NPAs across public and private sector banks as a whole. While some studies have addressed the problem of NPA within specific public and private sector banks or particular regions of India, there is a paucity of research covering this topic broadly. Furthermore, existing studies are limited in scope and time span, and there has been no recent or updated research in this area. In this context, the present study aims to provide a detailed examination of the incidence of NPAs in both public and private sector banks.

RESEARCH OBJECTIVES

1. To study the NPA Trends of public and private sector banks in India.
2. To study the sector-wise distribution of NPA in public and private sector banks in India.
3. To analyze the performance of private and public sector banks in financial terms.
4. To study the management policies of the government and banks to control NPA.

RESEARCH METHODOLOGY

In alignment with the stated objectives, the current study relied on secondary sources extracted primarily from RBI publications namely "Trend and Progress of Banking in India" and "Statistical Tables Related to Banking in India." Moreover, the annual reports of banks were studied for the bank-wise data.

The study covers 23 years of data from 2000 to 2023, to ensure robust results. This timeframe was selected because RBI introduced second-generation reforms in 2000, and the year 2023 provides a comprehensive view of the current magnitude of the problem using the most recent data.

Banks in India are classified according to their ownership patterns into public sector banks (PSBs) or private sector banks (PVBs) and 12 PSBs and 21 PVBs operating in India were considered for the analysis.

Hypothesis Testing

To achieve the above objectives, the following hypotheses were formulated and tested:

H_{01} : There is no significant difference in the GNPA ratio of public and private banks from 2000-23.

H_{02} : There is no significant difference in the NNPA ratio of Public and Private banks from 2000-23.

H₀₃: There is no significant difference in the movement of the GNPA ratio of the banks within Public Sector Banks during 2000-2023.

H₀₄: There is no significant difference in the movement of the GNPA ratio of the banks within Private Sector Banks during 2000-2023.

H₀₅: There is no significant difference in the NPA of Priority and Non-priority sector in Public sector Banks.

H₀₆: There is no significant difference in the NPA of Priority and Non-priority sector in Private sector Banks.

H₀₇: There is no significant difference between the priority sector NPA of public and private sector banks.

H₀₈: There is no significant difference between in non-priority sector NPA of public and private sector banks.

Tools used for the study

Objective	Tools used
1. To study the NPA Trends of Public and Private sector banks in India.	For the trend analysis, a comparative study of Gross NPA (GNPA) and Net NPA (NNPA) was conducted using tables and graphs. Additionally, to test the hypothesis, the Mann-Whitney U Test and Kruskal-Wallis test were employed.
2. To study the sector-wise distribution of NPA in public and private sector banks in India.	NPAs were categorized into priority and non-priority sectors, with trends in each sector analyzed through graphs and charts. Additionally, a detailed breakdown of the priority sector, including Agriculture, MSME, and other sectors, was examined to observe trends within the priority sector. Furthermore, the hypothesis was tested using the Mann-Whitney U Test.
3. To analyze the performance of private and public sector banks in financial terms.	CAMEL Model (CAMEL model, which stands for Capital Adequacy, Asset Quality, Management, Earnings, and Liquidity) indicators were used.
4. To study the management policies of the government and banks to control NPA.	Preventive and Curative policies for NPA management were outlined, followed by an analysis of the impact of legal measures on NPAs, the recovery ratio, and the slippage ratio. This was done to assess the effectiveness of recovery mechanisms in both public and private sector banks.

FINDINGS

OBJECTIVE 1: TO STUDY THE NPA TRENDS OF PUBLIC AND PRIVATE SECTOR BANKS IN INDIA.

Data from 12 public and 21 private banks over the past 23 years, from 2000-01 to 2022-23, were collected to examine NPA trends. The study covers both bank group-wise and bank-wise analyses that provide detailed insights into NPAs. Moreover, trends in both Gross NPA and Net NPA are examined in absolute terms, as well as in percentage terms-specifically, Gross NPA as a percentage of Gross Advances (GNPA %) and Net NPA as a percentage of Net Advances (NNPA %). Based on the NPA trends in public and private banks, the period from 2000-01 to 2022-23 can be divided into three phases a) the First Phase of Declining NPAs: 2000-01 to 2007-08 b) the Second Phase of Mounting NPAs: 2008-09 to 2017-18 c) Phase of Improvement in NPAs: 2018-19 to 2022-23.

- **Public Sector Banks'** NPAs have demonstrated a clear pattern over the years. During the first phase, there was a significant decline in both Gross and Net NPAs, with Gross NPAs falling from ₹54,672 crore in 2000-01 to ₹46,918 crore in 2008-09, and Net NPAs decreasing from ₹27,977 crore to ₹21,155 crore. This reduction, driven by reforms such as Debt Recovery Tribunals and the SARFAESI Act, saw the Gross NPA ratio drop from 12.4% to 2.0% and the Net NPA ratio from 6.7% to 0.9%. However, In the second phase, the global financial crisis of 2008-09 reversed this trend, leading to a rise in NPAs. Further, the introduction of the Asset Quality Review (AQR) in 2015-16 Asset exposed discrepancies. Therefore, by 2016-17, Gross NPAs surged to ₹68,473 crore, and Net NPAs increased to ₹38,309 crore, with ratios climbing to 11.7% and 6.9%, respectively. In response, measures like the Insolvency and Bankruptcy Code (IBC) and recapitalization efforts were implemented during the third phase, resulting in a decline in Gross NPAs to ₹42,8197 crore and Net NPAs to ₹1,02,532 crore by 2022-23. The Gross NPA ratio fell to 5.0% and the Net NPA ratio to 1.2%, with minimal impact from the COVID-19 pandemic and a substantial reduction in NPAs due to extensive write-offs.
- During the first phase, **Private sector banks** saw a marked improvement in NPAs, with Gross NPAs decreasing from ₹5,963 crores to ₹9,256 crores and Net NPAs from ₹3,700 crores to ₹4,028 crores, driven by reforms like the SARFAESI Act and stronger economic growth. In the second phase, NPAs rose sharply, with Gross NPAs increasing from ₹15,554 crores to ₹1,29,335 crores and Net NPAs from 1.0% to 2.4%, influenced by the global financial crisis, aggressive lending, and the RBI's

Asset Quality Review. During the third phase, focused efforts reduced Gross NPAs from ₹1,83,604 crores to ₹1,25,214 crores and Net NPAs from ₹67,309 crores to ₹29,507 crores, with strategies like write-offs, improved recovery processes, and the IBC contributing to cleaner balance sheets.

- A comparative analysis of NPAs in public and private banks revealed that during the first phase, both sectors experienced a decline in NPA. Public banks initially had a higher NNPA percentage in 2000-01 (6.7%) compared to private banks (5.4%). However, over time, public banks made significant improvements, reducing their Net NPA to 1% by 2007-08, thereby closing the gap with private banks, which consistently maintained a steady 1% throughout the period. During the second phase, NPAs surged for both sectors due to economic challenges and policy shifts. Public banks faced a notable increase, peaking at 8% Net NPA in 2017-18, whereas private banks remained relatively stable at around 2-2.4% over the same period. However, third phase marked an improvement phase, with both public and private banks actively reducing NPAs. Public banks reduced Net NPA to 3.7% in 2019-20 and further to 2.2% by 2021-22, while private banks maintained consistently low levels around 1% throughout. The latest data in 2022-23 shows a significant drop in NPAs for both sectors, reflecting effective asset quality management strategies amidst economic recovery efforts.
- Mann-Whitney U-Test result was significant at 0.017 stating that there is a significant difference in the GNPA (%) of public and private sector banks during the period of 2000-01 to 2022-23. Similarly, for the NNPA (%), the sig. value came out to be 0.005 rejecting the null hypothesis and stating that there is a significant difference in the Net NPA (%) in public and private banks.
- Bank-wise analysis of GNPA in public sector banks revealed that the average NPA was highest for the Central Bank of India with GNPA at 10.36% followed by Indian Overseas Bank at 9.34%, Punjab and Sind Bank at 9.01%, Punjab National Bank at 8.39%, and UCO Bank at 8.73%. Notably, Canara Bank, State Bank of India, and Indian Bank consistently maintained lower GNPA ratios. The differences in GNP ratios among public sector banks in India can be attributed to various factors including lending practices, sectoral exposure, asset quality management, and the overall economic conditions impacting each bank.

- Kruskal-Wallis's test results showcase a p-value of 0.131 which is greater than the significance level of 0.05 and therefore, we fail to reject the null hypothesis. This means, there is no statistically significant difference in the GNPA ratios across the 12 public sector banks at the 5% significance level.
- Bank-wise analysis of the GNPA of Private banks revealed that IDBI Bank has the highest average GNPA ratio at 9.70%, followed by Dhanlaxmi Bank with a GNPA of 8.27%, while Nainital Bank and TamilNad Mercantile Bank have GNPA's of 5.48% and 5.70%, respectively. Conversely, HDFC Bank has the lowest GNPA at 1.46%, demonstrating superior asset quality. Kotak Mahindra Bank and Axis Bank also have low GNPA's at 2.18% and 2.58%, respectively, indicating effective management of non-performing assets. Interestingly, new Private sector banks were among the most efficient, as their NPAs were significantly lower compared to old private banks.
- Kruskal-Wallis's test results in case of private banks, showcase a p-value of 0.000 which is greater than the significance level of 0.05 and therefore, we reject the null hypothesis. This means, there is a statistically significant difference in the GNPA ratios across the 21 private sector banks at the 5% significance level.
- Further post hoc analysis revealed a significant difference in the following bank groups of private sector banks: HDFC and City Union Bank, HDFC and Tamilnad Mercantile Bank, HDFC and Karur Vyasa Bank, HDFC and South Indian Bank, HDFC and Federal Bank, HDFC and J and K Bank, HDFC and Nainital Bank, HDFC and DCB Bank, HDFC and IDBI Bank, HDFC and CSB Bank, HDFC and Karnataka Bank, HDFC and ICICI Bank, HDFC and Dhanlaxmi Bank, YES Bank and CSB Bank, YES Bank and Karnataka Bank, YES Bank and ICICI Bank, YES Bank and Dhanlaxmi Bank, Kotak Mahindra and ICICI Bank, Kotak Mahindra and Dhanlaxmi Bank, Axis Bank and ICICI Bank, Axis Bank and Dhanlaxmi Bank, IndusInd Bank and ICICI Bank, IndusInd Bank, and Dhanlaxmi Bank.

OBJECTIVE 2: TO STUDY THE SECTOR-WISE DISTRIBUTION OF NPA IN PUBLIC AND PRIVATE SECTOR BANKS IN INDIA

- Sector-wise distribution of NPA in public sector banks showed that the NPA ratio of the priority sector was recorded higher only during 2006-12 as compared to the non-priority sector during the study. The composition of NPA in terms of priority and non-

priority shows that the NPA problem in the public sector originates from the non-priority sector as compared to the priority sector.

- Sector-wise distribution of NPAs between the priority and non-priority sectors in private banks has varied over the years. However, the NPA ratio of the priority sector remained relatively lower and stable and the incidence of NPA falls more in the non-priority sector throughout the entire study.
- When considering bank groups, it is evident that NPA is more pronounced in the non-priority sector as compared to the priority sector in both public and private sector banks. Furthermore, the data reveals a minimal disparity between the priority and non-priority sector NPAs in public banks, whereas the data is highly skewed towards the non-priority sector in the case of private sector banks.
- Within the priority sectors, the proportion of NPAs highlights the significant share contributed by MSME (Micro, Small, and Medium Enterprises) sectors, followed by agriculture and other priority sectors in both public and private sector banks.
- Further, the Mann-Whitney U-test proved that there is no significant difference in the NPA of Priority and Non-priority sectors in Public Sector Banks. Since the significance value (p -value = 0.398) is greater than the chosen significance value (i.e. 0.05), we will fail to reject the null hypothesis. However, in the case of private banks, the significance value (p -value = 0.002) is less than the chosen significance value (i.e. 0.05), therefore, we will reject the null hypothesis, indicating that a significant difference exists in the NPA of Priority and Non-priority sectors in the Private Sector Banks.
- Mann-Whitney U test proved that the significance value (p -value = 0.000) is less than the chosen significance value (i.e. 0.05), we will reject the null hypothesis, indicating a significant difference between priority sector NPA of public and private sector banks. Moreover, in the case of the non-priority sector, the significance value (p -value = 0.004) is less than the chosen significance value (i.e. 0.05), we will reject the null hypothesis, indicating a significant difference between non-priority sector NPA of public and private sector banks.

OBJECTIVE 3: TO ANALYZE THE PERFORMANCE OF PRIVATE AND PUBLIC SECTOR BANKS IN FINANCIAL TERMS.

To assess the financial performance of banks, the CAMEL Model was utilized, incorporating the following indicators: Capital Adequacy Ratio (CAR) to assess capital adequacy, Net Non-Performing Asset to Net Advances Ratio (NNPA) for asset quality, Business Per Employee (BPE) and Profit Per Employee (PPE) to evaluate management efficiency, Return on Assets (ROA) for earnings, and Credit-Deposit Ratio (CDR) for liquidity. Based on the financial data of public and private sector banks from 2000 to 2023, here is a comparative analysis of each indicator:

- **Capital Adequacy Ratio (CAR):** Capital Adequacy Ratio (CAR) is a measure of a bank's financial strength, expressed as the ratio of its capital to its risk-weighted assets. Both public and private sector banks consistently maintained adequate capital ratios, with private banks showing slightly stronger figures, especially after 2011. By 2023, private banks had a CAR of 18.7%, higher than the 16.2% for public banks, reflecting a stronger buffer against potential losses. Moreover, private banks reflect a more proactive approach to capital preservation and risk management.
- **Net Non-Performing Assets (NNPA):** represents the portion of a bank's non-performing assets (NPAs) that remains after deducting provisions. Public sector banks consistently faced higher NPA challenges compared to private sector banks, particularly between 2016-2019, when public banks' NNPA soared to double digits. Private banks, on the other hand, maintained lower NPAs, indicating better asset quality and risk management. This comparison highlights the stronger asset quality management practices within private sector banks, especially during periods of economic distress.
- **Business per Employee (BPE):** measures the average amount of business (loans and deposits) handled by each employee of a bank. Private sector banks outperformed public sector banks in terms of business per employee, showing a clear efficiency advantage. In 2023, private banks reported a BPE of 1497.7 compared to 2204.2 for public banks, reflecting their ability to leverage manpower effectively.
- **Profit per Employee (PPE):** indicates the average profit generated by each employee of a bank. Similar to BPE, private banks demonstrated superior profitability per employee. While public banks struggled with negative PPE between 2016-2020, private banks consistently maintained positive growth, with a significant difference of 12.6 in 2023 compared to 11.9 for public banks.

- **Return on Assets (ROA):** ROA reflects how efficiently a bank uses its assets to generate profit, calculated as net income divided by total assets. Private sector banks generally reported stronger ROA figures, with public banks declining into the negative territory between 2016 and 2020. The rebound was more prominent for private banks, which reached a ROA of 1.3% in 2023, compared to 0.7% for public banks, indicating better profitability and asset utilization. This data highlights the stronger financial stability due to higher ROA and adaptability of private sector banks in weathering economic fluctuations. In contrast, public sector banks faced deeper challenges but showed signs of recovery in recent years.
- **Net Interest Income to Total Assets or Net Interest Margin (NIM):** measures the proportion of a bank's net interest income relative to its total assets, indicating how effectively the bank is generating income from its assets through interest. Public sector banks struggled with a declining NII to Total Assets ratio over the years, private sector banks exhibited consistent growth, reflecting their stronger financial performance and ability to generate income from their assets. By 2023, private banks' ratio stood at 3.9%, outperforming the 2.7% of public banks.
- **Credit-Deposit Ratio (C-D Ratio):** shows the proportion of a bank's deposits that are given out as loans, indicating how well the bank is utilizing its deposits. The credit-deposit ratio showed that private sector banks had a more aggressive lending approach, consistently surpassing public banks after 2016. In 2023, private banks had a ratio of 81.3%, compared to 69.1% for public banks, indicating better credit growth relative to deposits.

This comparative analysis shows that while both public and private sector banks have faced challenges, private banks have generally exhibited stronger financial performance.

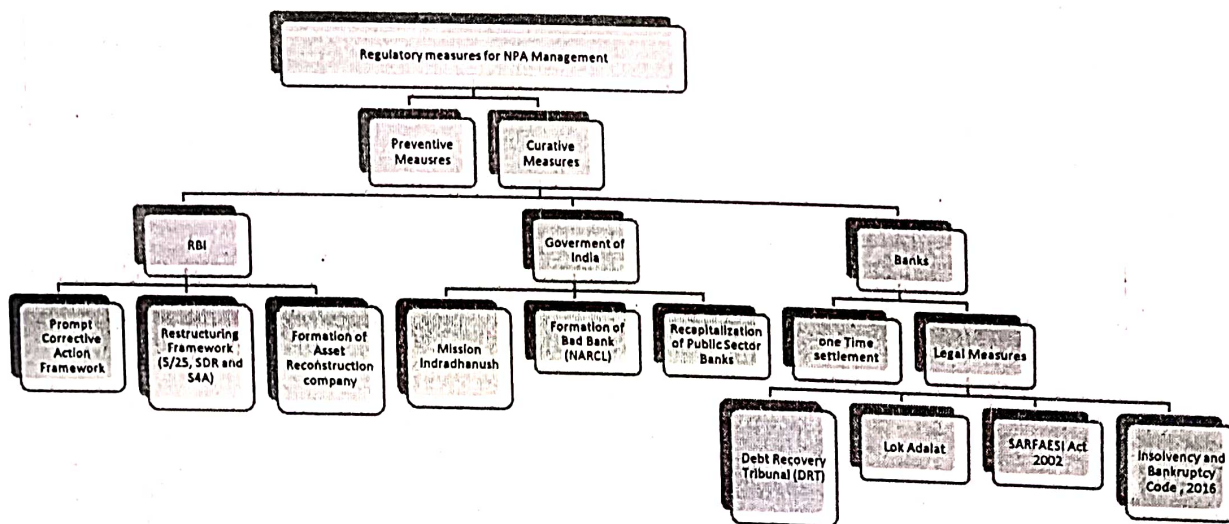
OBJECTIVE 4: TO STUDY THE MANAGEMENT POLICIES OF THE GOVERNMENT AND BANKS TO CONTROL NPA.

- There are two types of regulatory measures for NPA management: **Preventive and Curative.**
- **Preventive measures** are those strategies and actions taken by banks, regulators, and the government to reduce the likelihood of loans turning into NPAs. These measures include stringent credit appraisal systems, risk-based lending, continuous monitoring of borrowers, and the introduction of prudential norms such as capital adequacy

requirements. Other preventive initiatives include setting up early warning systems, ensuring timely loan recovery, Prompt Corrective Action, and encouraging financial discipline among borrowers. Preventive measures aim to minimize the risk of loans becoming stressed assets by improving the overall quality of lending practices.

- **Curative measures**, on the other hand, focus on addressing the problem after it has occurred, i.e., once the asset has already become non-performing. These measures include various recovery mechanisms, legal frameworks, and restructuring tools designed to help banks recover dues and manage NPAs. Examples of curative measures include the use of Debt Recovery Tribunals (DRTs), Lok Adalat, the Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act (SARFAESI Act), Insolvency and Bankruptcy Code (IBC). These initiatives aim to cure the problem by facilitating quicker resolution, restructuring, or liquidation of stressed assets, thereby improving the asset quality of banks.

Fig 2: Regulatory Measures for NPA Management



Source: Author Compilation

- The Debt Recovery Tribunal (DRT), introduced in 1993-94, appears to have had a more pronounced effect on public sector banks compared to private sector banks when analyzing the NPA data from 1996-97 to 2001-02. Public sector banks focused on legal mechanisms (like DRT) and improving governance to reduce NPAs, while

private banks used technology and proactive management. This led to different levels of success in managing and lowering NPAs in the two sectors.

- **Lok Adalats, introduced in 2001**, had a significant and consistent impact on reducing NPAs, improving recovery ratios, and lowering slippage ratios, particularly for public sector banks. Public banks saw a steady decline in Gross NPAs from 11.1% in 2001-02 to 7.8% in 2005-06, alongside a rise in recovery ratios from 19.5% in 2000 to 48.2% in 2006. Their slippage ratio also showed a continuous decrease, dropping from 4.2% in 2000 to 1.5% in 2006, indicating strong effectiveness in curbing fresh NPAs. In contrast, private sector banks experienced a more erratic pattern, with initial increases in NPAs and slippages, but eventually, their recovery ratios surged from 22.6% in 2000 to 69.1% in 2004, stabilizing by 2006. **While Lok Adalats helped both sectors, the effect was more immediate and sustained for public banks, with private banks taking longer to achieve consistent improvements.** The differential impact of Lok Adalats on NPAs and recovery ratios between public and private banks stems from public banks' systematic adoption of Lok Adalats as a primary recovery tool, while private banks relied on diverse recovery methods, leading to a delayed but eventual improvement in recovery performance. Public banks' regulatory oversight and focused strategies allowed for quicker gains compared to the gradual progress seen in private banks.
- **The SARFAESI Act, implemented in 2002**, allowed banks to seize and sell defaulters' assets without court intervention. The SARFAESI Act had a profound impact on reducing NPAs, enhancing recovery ratios, and lowering slippage ratios for both public and private sector banks. Public banks saw a sharp drop in NPAs from 12.4% in 2000-01 to 2.2% by 2007-08, while private banks reduced their NPAs from 8.4% to 2.4% over the same period. Recovery ratios improved markedly for both sectors, with public banks rising from 19.5% in 2000 to 53.2% in 2007, and private banks experiencing a peak recovery of 69.1% in 2004 before stabilizing at 43.7% by 2007. Slippage ratios also steadily declined after SARFAESI, with public banks reducing from 3.1% in 2003 to 1.4% by 2007, and private banks dropping from 7% in 2002 to 1.4% by 2007. **The Act proved particularly effective for public banks, which saw more consistent improvements across all metrics.** The differences in NPA recovery, reduction, and slippage between public and private banks after the SARFAESI Act stem from public banks' more consistent recovery strategies and

stronger regulatory oversight, while private banks' varied approaches and initial aggressive lending led to slower adaptation and less uniform results. Public banks' centralized management and structured protocols enabled more effective utilization of the Act's provisions.

- The Insolvency and Bankruptcy Code (IBC) of 2016 had a substantial impact on the NPA, recovery ratio, and slippage ratio of both public and private sector banks. Public sector banks saw their NPAs peak at 14.6% in 2017-18, followed by a reduction to 5.0% by 2022-23, while private banks' NPAs peaked at 5.5% in 2019-20 before declining to 2.3% by 2022-23. Recovery ratios for public banks initially dropped post-IBC, reaching 23.4% in 2016, but improved gradually to 15.3% by 2023, whereas private banks saw a more consistent recovery improvement, rising from 40.5% in 2016 to 45.3% by 2022. Slippage ratios for public banks spiked sharply to 17.2% in 2016 but declined steadily to 2% by 2023, reflecting improved asset quality, while private banks experienced a more moderate fluctuation, stabilizing at 2.1% by 2023. **The IBC's implementation had a more pronounced positive impact on public sector banks, particularly in stabilizing NPAs and reducing slippages, while private banks also benefited from enhanced recovery mechanisms.** The differences in the impact of the IBC on public and private sector banks are primarily due to public banks' higher initial NPAs and need for more significant operational restructuring, while private banks faced less severe asset quality issues and maintained steadier recovery strategies. Public banks leveraged the IBC for larger gains after a more tumultuous transition, while private banks experienced moderate fluctuations.

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