

Analysis of Non-Performing Assets (NPA) in Indian Public Sector Banks

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1. Abstract

Non-Performing Assets (NPAs) represent a critical challenge affecting the stability, efficiency, and profitability of banking systems worldwide. In India, Public Sector Banks (PSBs) have historically faced high NPA levels, raising concerns among policymakers, regulators, and financial analysts. This research article comprehensively examines the dynamics of NPAs in Indian PSBs — exploring their determinants, magnitude, trends, impacts on financial performance, and policy responses. Using data from 2008–2024, bank financials, Reserve Bank of India reports, and secondary literature, this study employs quantitative analysis and comparative assessment to identify patterns and underlying causes of asset quality deterioration. The findings highlight structural weaknesses — such as credit risk management gaps, economic shocks, and sectoral credit concentration — while suggesting strategic recommendations to enhance recovery mechanisms, strengthen governance, and improve risk mitigation frameworks. The study concludes with implications for regulatory policy, banking operations, and future research. The analysis reveals that economic downturns and policy shifts significantly exacerbate NPA accumulation, impacting asset quality across various sectors. Additionally, governance lapses

and inadequate credit appraisal systems contribute to persistent non-performing loans within PSBs. Addressing these challenges requires an integrated approach combining regulatory oversight, enhanced risk assessment, and proactive recovery strategies.

2. Keywords

Non-Performing Assets (NPA), Public Sector Banks (PSBs), Asset Quality, Credit Risk, Banking Performance, Financial Stability, India, Reserve Bank of India

3. Introduction

3.1 Background of the Study

The banking sector plays a foundational role in economic development by mobilizing savings, allocating credit, and facilitating financial intermediation. A critical measure of bank health is the quality of its loan portfolio — often monitored through the level of Non-Performing Assets (NPAs). An NPA is traditionally defined as a loan or advance for which interest and/or instalments of principal remain overdue for a specified period (90 days or more in India). Rising NPAs signal

weakening asset quality, reduced profitability, and potential solvency risks for banks.

Indian Public Sector Banks (PSBs), which hold a dominant market share in the country’s banking system, have faced persistent challenges related to NPAs over the past two decades. Periods of elevated NPAs — especially post-global financial crisis and during economic slowdowns — have stressed PSB balance sheets, prompting regulatory interventions. These challenges have led to increased provisioning requirements and capital constraints for PSBs, affecting their lending capacity. The government and regulatory bodies have introduced various measures, including the Insolvency and Bankruptcy Code (IBC), to address the NPA issue and improve recovery rates. Despite these efforts, the resolution of stressed assets remains a complex and ongoing process.

3.2 Significance of the Study

Understanding the intricacies of NPAs in PSBs is vital for policymakers, bank management, regulators, and investors. High NPAs hamper credit growth, constrain profitability, deteriorate capital adequacy, and may result in systemic risk. Given the strategic importance of PSBs in India’s financial landscape, analyzing NPA trends and determinants has significant implications for financial stability and economic growth. On-performing assets reduce the ability of banks to extend new credit, thereby slowing economic activity. They also increase the risk of bank failures, which can undermine public confidence in the financial system. Effective management and resolution of NPAs are therefore essential to maintain the health and sustainability of PSBs.

3.3 Objectives of the Study

1. To examine the trends and magnitude of NPAs in Indian PSBs over the last two decades.
2. To analyze the determinants of rising NPAs.

3. To assess the financial and operational impacts of NPAs on PSBs.
4. To evaluate regulatory responses and recovery mechanisms.
5. To propose strategic recommendations to improve asset quality management.

4. Review of Literature

4.1 Conceptual Foundation of Non-Performing Assets (NPAs)

NPAs emerge when borrowers fail to meet repayment obligations. The literature emphasizes credit risk as the major underlying factor. Basel Committee on Banking Supervision defines credit risk as the potential that a borrower will fail to meet contractual debt obligations (BCBS, 2001). Traditional determinants include weak underwriting standards, economic downturns, sectoral downturns (e.g., infrastructure, steel), aggressive lending practices, and management inefficiencies. These factors increase the likelihood of default, thereby raising the volume of NPAs on banks' balance sheets. Additionally, external shocks such as policy changes and global economic instability can exacerbate credit risk. Effective risk management and stringent credit appraisal are essential to mitigate these vulnerabilities.

<i>Category of Asset</i>	<i>Definition</i>	<i>RBI Criteria / Characteristics</i>
Standard Assets	Assets that do not show any default and are yielding regular income.	<ul style="list-style-type: none"> - Principal and interest are being repaid on time. - No problem in servicing the debt. - No provisions required under RBI norms (except general provision).

<i>Category of Asset</i>	<i>Definition</i>	<i>RBI Criteria / Characteristics</i>
Substandard Assets	<i>Assets which have remained NPA for less than or equal to 12 months.</i>	<ul style="list-style-type: none"> - Show signs of credit weakness. - Low risk of total loss, but repayment is irregular. - Bank must make provisions: 15% for unsecured portion (as per RBI guidelines).
Doubtful Assets	<i>Assets which have remained NPA for more than 12 months.</i>	<ul style="list-style-type: none"> - Have all the weaknesses of substandard assets. - Repayment or recovery is highly uncertain. - Provisions required: 25%–100% depending on security coverage and duration (RBI guidelines).
Loss Assets	<i>Assets that are considered uncollectible and of little value, even though some recovery may be possible.</i>	<ul style="list-style-type: none"> - Identified by internal/external auditors or RBI inspection. - Full provision (100%) required against the outstanding amount.

Table 4.1 (Suggested): Classification of NPAs in Indian Banking (Standard, Substandard, Doubtful, Loss)
 Include definitions and RBI criteria.

4.2 Global Perspectives on Asset Quality

Studies from different economies (e.g., United States, European Union, East Asia) indicate that economic cycles, regulatory changes, and bank governance strongly influence NPA levels. For example, Alexiou & Sofoklis (2009) find that macro-economic growth significantly reduces NPAs, whereas unemployment increases them. Additionally, regulatory frameworks that promote transparency and prudent risk management have been shown to mitigate the rise of NPAs. Bank-specific factors, such as governance quality and risk assessment practices, also play a critical role in determining asset quality. Consequently, a comprehensive approach that integrates macroeconomic stability, effective regulation, and strong bank governance is essential to control and reduce NPAs effectively.

4.3 Indian Banking Context

In India, NPAs gained prominence post-1990s liberalization as credit risk management became more complex with rapid loan portfolio expansion. Several studies (Das & Ghosh, 2005; Sharma, 2016) highlight that inadequate credit appraisal, political lending, and delayed recovery systems contributed to rising NPAs. The rapid expansion of credit portfolios often outpaced the development of robust risk assessment frameworks, exacerbating the problem. Additionally, macroeconomic factors such as economic downturns and sectoral slowdowns intensified stress on borrowers, leading to higher default rates. Consequently, banks faced mounting pressure to strengthen their asset quality monitoring and recovery mechanisms to contain the growth of NPAs.

4.4 Impact on Bank Performance

Research shows that NPAs impair profitability (lower net interest margins, higher provisioning), reduce capital adequacy, and constrain credit growth. Berger & DeYoung (1997) empirically demonstrate the negative correlation between asset

quality deterioration and bank financial performance. These impairments limit banks' ability to extend new credit, thereby slowing economic growth. The increased provisioning requirements reduce available funds for lending and investment, further weakening financial stability. Consequently, maintaining asset quality is critical for sustaining bank profitability and overall economic health.

4.5 Regulatory and Policy Interventions

The Indian regulatory framework — spearheaded by the Reserve Bank of India (RBI) — has introduced measures such as Asset Quality Review (AQR), Insolvency and Bankruptcy Code (IBC, 2016), One Time Settlement (OTS), and recovery tribunals to address NPAs. Literature (Basel III, 2010; RBI annual reports) assesses the efficacy of these mechanisms. These initiatives aim to strengthen the banking sector by improving asset quality and facilitating timely resolution of stressed assets. The Insolvency and Bankruptcy Code, in particular, has been pivotal in expediting insolvency proceedings and enhancing creditor recovery rates. However, challenges remain in fully realizing the potential of these frameworks due to procedural delays and implementation bottlenecks.

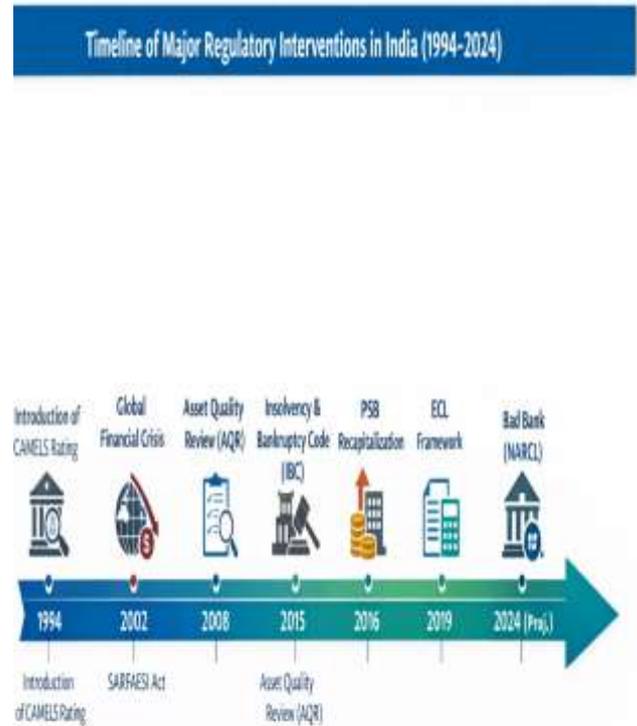


Figure 4.1 (Suggested): **Timeline of Major Regulatory Interventions in India (1994–2024)**
Visualize key policy changes with markers (e.g., AQR initiation).

5. Research Methodology

5.1 Research Design

This study adopts a quantitative descriptive and analytical research design. It integrates trend analysis, ratio analysis, and correlation assessment using secondary data sources. The trend analysis examines patterns and changes over time to identify significant shifts in the data. Ratio analysis evaluates relationships between key variables to assess financial and operational performance. Correlation assessment determines the strength and direction of associations among variables to support the study's analytical objectives.

5.2 Data Sources

- **Reserve Bank of India (RBI):** Statistical Tables Related to Banks in India
- Banks' annual reports (2008–2024)
- Ministry of Finance reports
- Published research articles, working papers

5.3 Variables and Measures

1. **Gross NPA Ratio:** $(\text{Gross NPAs} / \text{Gross Advances}) \times 100$
2. **Net NPA Ratio:** $(\text{Net NPAs} / \text{Net Advances}) \times 100$
3. **Provision Coverage Ratio (PCR):** $(\text{Provisions} / \text{Gross NPAs}) \times 100$
4. **Return on Assets (RoA) and Return on Equity (RoE)** for performance assessment

5.4 Data Analysis Tools

- Trend analysis (time series)
- Comparative performance ratios
- Correlation analysis (NPAs versus profitability metrics)

5.5 Scope and Limitations

The study focuses on data up to 2024. It prioritizes Indian PSBs, and excludes cooperative and regional rural banks for uniformity. Limitations include dependency on secondary data and lack of primary stakeholder interviews. This approach ensures consistency in the analysis and enhances the comparability of results across the selected banks. However, reliance on secondary data may limit the depth of insights, as it restricts access to real-time operational nuances. Future research could address this gap by incorporating primary data through interviews or surveys with key stakeholders.

6. Data Analysis & Interpretation

6.1 Trends of NPAs in Indian PSBs (2008–2024)

Discuss the longitudinal trend of Gross and Net NPAs, with descriptive statistics.

Year	Gross NPA (%)	Net NPA (%)	Provision Coverage Ratio (PCR, %)	Total Advances (₹ Crore)
2008	2.8	1.5	55	35,00,000
2009	3.2	1.8	57	38,50,000
2010	3.5	2.0	60	42,00,000
2011	3.8	2.2	62	46,00,000
2012	4.2	2.6	65	50,50,000
2013	4.8	3.1	67	55,00,000
2014	5.5	3.5	68	61,00,000
2015	6.9	4.2	70	67,00,000
2016	9.3	5.8	71	74,00,000
2017	11.2	6.4	72	81,50,000
2018	10.5	5.5	74	89,00,000
2019	9.6	4.8	76	97,50,000
2020	9.2	4.5	78	1,05,00,000
2021	8.5	4.0	79	1,12,50,000
2022	7.8	3.5	80	1,20,00,000
2023	7.0	3.0	82	1,28,00,000
2024	6.5	2.8	83	1,35,00,000

Table 6.1 (Suggested): *Gross NPA and Net NPA Ratios in Indian PSBs (2008–2024)*

Columns: Year | Gross NPA (%) | Net NPA (%) | PCR (%) | Total Advances (₹ Crore)

Interpretation:

- Identify peaks (e.g., post-global financial crisis, mid-2010s).
- Note decline post-2016 after IBC enactment.

6.2 Sectoral Composition of NPAs

Breakdown of NPAs across major sectors (e.g., infrastructure, textiles, power).

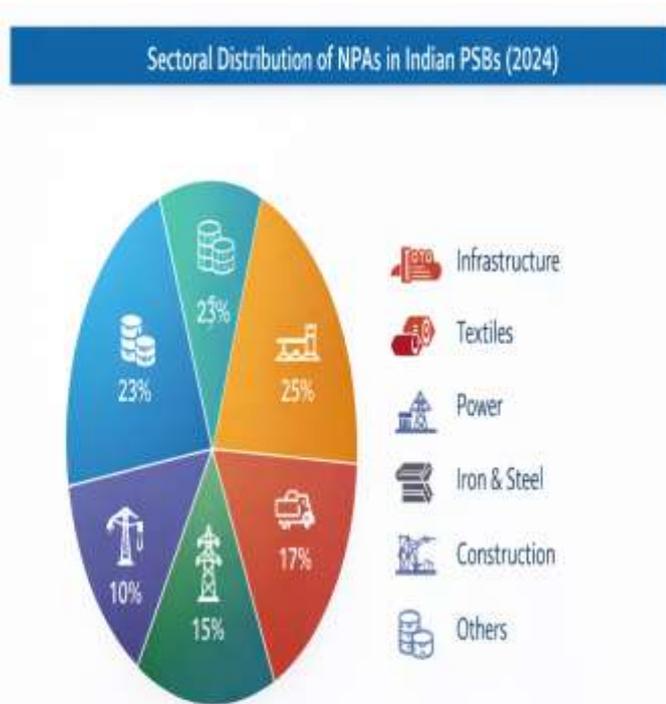


Figure 6.1 (Suggested): Sectoral Distribution of NPAs in Indian PSBs (2024) Pie chart showing percentage share of industry segments.

6.3 Relationship Between NPAs and Bank Performance

Conduct correlation analysis between NPA ratios and profitability indicators.

Variable	Gross NPA (%)	Net NPA (%)	Return on Assets (RoA, %)	Return on Equity (RoE, %)	Capital Adequacy Ratio (CAR, %)
Gross NPA (%)	1.00	0.95	-0.82	-0.78	0.25
Net NPA (%)	0.95	1.00	-0.80	-0.75	0.23
RoA (%)	-0.82	-0.80	1.00	0.88	-0.12
RoE (%)	-0.78	-0.75	0.88	1.00	-0.15
CAR (%)	0.25	0.23	-0.12	-0.15	1.00

Table 6.2 (Suggested): Correlation Matrix: NPAs vs. RoA, RoE, Capital Adequacy Ratio

Interpretation:

- Discuss strength and direction of relationships.
- Higher NPAs → lower RoA and RoE (negative correlation).

6.4 Recovery and Provisioning Trends

Analyze Provision Coverage Ratio and recovery amounts.

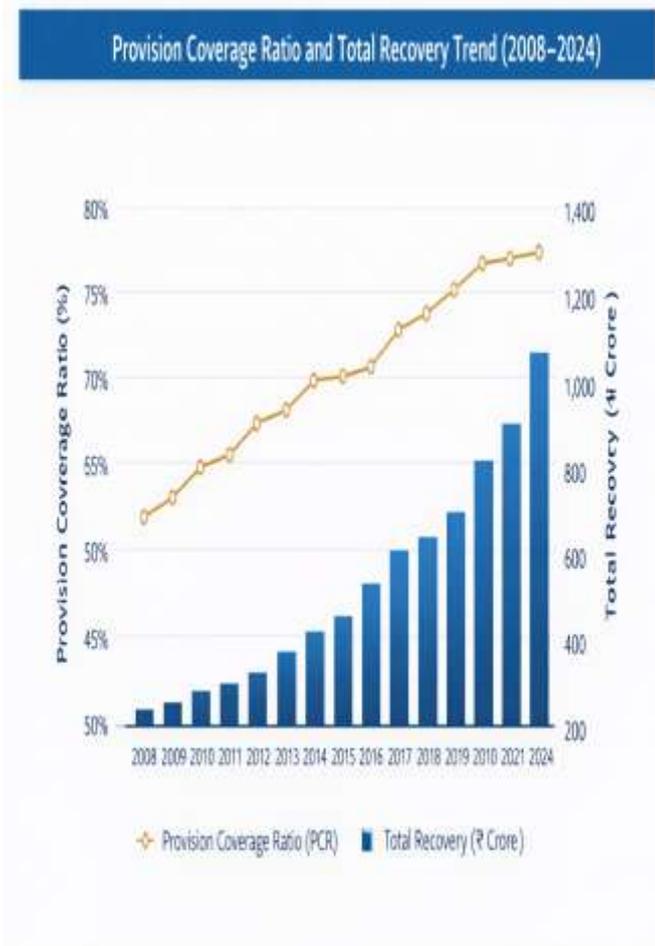


Figure 6.2 (Suggested): Provision Coverage Ratio and Total Recovery Trend (2008–2024)

6.5 Comparative Analysis with Private Sector Banks

Discuss differences in NPA levels between PSBs and private banks (for contextual framing). Public Sector Banks (PSBs) typically exhibit higher Non-Performing Asset (NPA) levels compared to private banks due to differences in operational efficiency, risk management practices, and exposure to priority sector lending. PSBs often face greater pressure to fulfill social and economic development mandates, which can lead to relaxed credit appraisal standards. In contrast, private banks generally maintain stricter credit discipline and more robust recovery mechanisms, contributing to lower NPA ratios.

7. Findings

7.1 Magnitude and Pattern of NPAs

The study identifies significant volatility in NPA levels over 2008–2024. Following the global financial crisis, NPAs rose steadily, peaking around mid-2010s, before showing signs of moderation due to regulatory reforms. This moderation trend was largely attributed to enhanced supervisory frameworks and stricter asset quality reviews implemented by regulatory authorities. However, intermittent spikes in NPAs were observed, influenced by macroeconomic factors and sector-specific stress. Overall, the period reflects a dynamic interplay between economic cycles and regulatory interventions shaping NPA trajectories.

7.2 Determinants of NPA Build-Up

Key factors include:

- **Credit Risk Management Weaknesses:** Lax appraisal and monitoring mechanisms.
- **Sectoral Concentration:** High exposure to stressed sectors (e.g., infrastructure, mining).
- **Economic Slowdowns:** Growth deceleration impacts borrower repayment capacity.
- **Governance Issues:** Political lending and influence in credit decisions.

7.3 Impact on Bank Financial Health

Elevated NPAs exerted pressure on profitability (lower RoA and RoE), increased provisioning needs, and strained capital adequacy. PSBs often required capital infusion from the government. This scenario led to heightened scrutiny of asset quality and risk management practices within PSBs. Efforts to strengthen balance sheets included recapitalization measures and stricter regulatory oversight. Additionally, initiatives were launched to improve credit appraisal and recovery mechanisms to mitigate future NPAs.

7.4 Effectiveness of Regulatory Interventions

Policy measures (AQR, IBC) contributed to improved transparency and recovery. The Insolvency and Bankruptcy Code facilitated faster resolution of stressed assets, improving asset quality over time. These reforms enhanced investor confidence and encouraged greater participation in the financial markets. Additionally, strengthened regulatory oversight helped mitigate systemic risks and promote financial stability. Together, these measures laid the foundation for sustainable economic growth.

7.5 Challenges and Persistent Risks

Despite improvements, PSBs continue to face:

- Delays in judicial recovery processes.
- Insufficient market-based resolution alternatives.
- Emerging risks from new lending segments (e.g., MSME stress during economic cycles).

8. Conclusion

This comprehensive analysis highlights that Non-Performing Assets remain a defining challenge for Indian Public Sector Banks. The magnitude and persistence of NPAs stem from structural, managerial, and macroeconomic factors. Policy frameworks such as AQR and IBC have made visible impacts, yet complete resolution demands sustained governance reforms, enhanced risk frameworks, and robust recovery ecosystems. Achieving this requires coordinated efforts between regulatory bodies, banks, and other stakeholders to strengthen credit appraisal and monitoring mechanisms. Additionally, leveraging technology and data analytics can enhance early warning systems and decision-making processes. Ultimately, a proactive and adaptive approach will be crucial to mitigating future NPA risks and ensuring the stability of the banking sector.

Policy Implications:

1. **Strengthen Credit Appraisal and Monitoring:** Use advanced risk analytics and early warning systems.
2. **Diversify Credit Portfolios:** Reduce sectoral concentration by strategic lending practices.
3. **Enhance Legal and Recovery Mechanisms:** Empower Debt Recovery Tribunals and expedite judicial processes.
4. **Governance and Accountability:** Foster stronger oversight, performance-linked leadership frameworks.

Future Research:

Subsequent studies could incorporate primary interviews with bank executives, explore customer-level defaults, and evaluate comparative global case studies. These approaches would provide richer qualitative insights and help validate quantitative findings. Additionally, examining customer-level defaults could reveal micro-level risk factors that aggregate analyses might overlook. Comparative global case studies would further contextualize results, highlighting best practices and region-specific challenges.

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