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Structural Factors Behind Rising NPAs in Indian Banks

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***Abstract*— Non-Performing Assets (NPAs) are one of the most important stress factors in the Indian banking sector, which demonstrates the systemic weaknesses in the management of credit risks, governance, and macroeconomic resilience. In this paper, an in-depth, exploratory, and descriptive discussion of the structural drivers of increased and then decreased NPAs in Indian banks, and specifically, in the public sector banks (PSBs), is presented. Based on a secondary data research design, the research examines RBI reports, institutional assessment, and peer-reviewed literature to track the change of NPA between 2009 and 2025 and pinpoint structural, institutional, and macroeconomic factors that contribute to the decline in the quality of assets. Noteworthy results indicate that GNPA ratios reached a peak of 11.2% in March 2018 before decreasing to low multi-decade levels of 2.1% in September 2025 due to policy interventions such as Insolvency and Bankruptcy Code (IBC), Asset Quality Review (AQR), and bank recapitalization. The research points out that poor credit appraisal systems, directed lending requirements, overexposure in the infrastructure sector and recessionary macroeconomic conditions are the key structural drivers. The paper finds that even though the banking industry in India has made a historic recovery, the structural weaknesses that led to the initial NPAs crisis are not entirely addressed, and further institutional reform is needed.**

***Keywords*— Non-Performing Assets, Indian Banks, Public Sector Banks, Credit Risk, Banking Regulation, Insolvency.**

I. Introduction

Banking stability is a pillar of economic growth and financial inclusion of countries. In India, banking industry, which is dominated by the public sector banks (PSBs), is a key participant in credit mobilization, productive investment, and transmission of monetary policy.

Nevertheless, the unremitting increase of Non-Performing Assets (NPAs) has been among the biggest problems of Indian banks in the last 20 years (Das, 2023; Rehman et al., 2026). A non-performing asset is said to be in this state when the interest or principal is not realized within a span of more than 90 days and thus becomes a direct liability to the bank in terms of profitability and capital-base.

The NPA crisis in India was neither a one-off event nor a multi-dimensional phenomenon, but rather a multi-faceted phenomenon that stemmed out of structural flaws in the banking architecture itself. The combination of lax credit appraisal standards in the times of high economic growth (2003-2008), politically-motivated lending to priority and infrastructure sectors, poor risk monitoring, and systematic governance deficiency in PSBs all led to a disastrous decline of the quality of assets (Sharma and Dhiman, 2021; Kadanda and Raj, 2018). The 2015-16 Asset Quality Review (AQR) by the RBI later compelled the clear inclusion of these stressed assets which pushed the Gross NPA ratio to a record high of 11.2 percent in March 2018.

Nevertheless, the history of the Indian NPAs is also an impressive one of institutional resilience. The Insolvency and Bankruptcy Code (IBC, 2016), strategic bank recapitalization, enhanced provisioning standards, and enhanced RBI supervision have pushed the GNPA ratio to a multi-decade low of 2.31% by March 2025. This crisis-to-recovery curve is an interesting case study in terms of structural analysis of emerging market banking. The paper is a synthesis of secondary data on the period 2009-2025 to empirically track this trend and find the structural drivers behind it (Goswami and Gulati, 2022; Bawa et al., 2019).

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II. Review Of Literature

Author & Year	Objective	Methodology	Key Findings	Summary
Rehman, F. U., et al. (2026)	To uncover structural and macroeconomic drivers of India's banking stress.	Empirical/Econometric Analysis	Both structural inefficiencies and macroeconomic contractions drive NPA persistence.	Most recent study linking macro factors to structural NPA drivers.
Kar, M., et al. (2025)	To investigate factors affecting NPA and managing stressed assets in Indian banks.	Empirical Analysis	Governance quality and credit appraisal deficiencies are primary structural factors.	Focuses on both factors and management strategies for NPAs.
Kaur, B., et al. (2023)	To study the impact of NPAs on the profitability of the Indian banking sector.	Panel Data Analysis	Rising NPAs significantly compress ROA and Net Interest Margin (NIM).	Directly links NPA accumulation to profitability deterioration.
Das, S. K. (2023)	To analyze NPA trends and determinants in India's banks.	Trend and Statistical Analysis	Macro factors (GDP growth, interest rates) and sectoral credit concentration drive NPAs.	Comprehensive mapping of NPA trends with statistical determinants.
Agarwal, M. (2023)	To explore causes, consequences, and remedial measures of NPAs in Indian banking.	Descriptive Review	Directed lending and weak monitoring are root structural causes.	Broad overview of the NPA problem across the banking ecosystem.
Goswami, A., & Gulati, R. (2022)	To study the relationship between economic slowdown, NPA crisis, and bank productivity.	DEA and Productivity Analysis	NPA crisis directly suppresses total factor productivity (TFP) in Indian banks.	Empirically links macroeconomic slowdown to bank productivity loss.
Sharma, P. K., & Dhiman, B. (2021)	To analyze the growth of NPAs and restructuring aspects in PSBs.	Analytical Study	PSBs are disproportionately affected by NPAs due to governance deficits and directed lending.	Focuses specifically on public sector bank vulnerabilities.
Garg, N. (2021)	To identify factors affecting NPAs in the Indian banking sector.	Empirical Assessment	Macroeconomic volatility, lending rates, and credit growth are key determinants.	Identifies a robust set of econometric NPA drivers.
Kandpal, V. (2020)	To critically analyze NPAs in public and private sector banks.	Comparative Analysis	PSBs carry significantly higher NPA burden than private banks due to structural flaws.	Highlights the public-private NPA divide.
Das, S. K., & Uppal, K. (2021)	To analyze the relationship between NPAs and profitability in Indian banks.	Regression Analysis	Inverse relationship between NPA levels and bank ROA is statistically significant.	Quantifies the profitability cost of NPAs.
Bawa, J. K., et al. (2019)	To analyze NPAs using 31 financial ratios.	Comprehensive Financial Ratio Analysis	Credit growth, asset coverage, and provisioning ratios are the strongest NPA predictors.	Most comprehensive financial ratio-based NPA analysis.
Kadanda, D., & Raj, K. (2018)	To study determinants of NPAs in Indian public sector banks.	Panel Data Study	Poor credit appraisal and macroeconomic downturns are dominant NPA determinants.	Core study on PSB-specific NPA determinants.
Satpathy, A., et al. (2015)	To empirically assess macroeconomic factors affecting NPAs in India.	Empirical Assessment	GDP growth, inflation, and interest rates significantly co-determine NPA levels.	Establishes the macroeconomic foundation for NPA analysis.
Biswas, P. K., & Deb, A. T. (2004)	To determine NPAs in Indian PSBs and critique policy reforms.	Policy Critique Study	Policy reforms (priority sector mandates) unintentionally created moral hazard in lending.	Early foundational study on structural policy-induced NPA causes.

Compiled from the cited studies (2004–2026).

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III. Research Gap

Although the literature on the macroeconomic determinants of NPAs (Satpathy et al., 2015; Garg, 2021) or policy responses to the crisis (Sharma and Dhiman, 2021) is well-documented, there is a gap in the synthesis of both macroeconomic determinants (crisis origin: GDP contraction, interest rates) and structural institutional factors within a single, unified secondary-data framework spanning the full crisis-to-recovery cycle. This research paper addresses this gap by conducting a thorough analysis of secondary data covering 2009–2025.

IV. Research Design

A. Statement of the Problem

The NPAs in Indian PSBs built up dramatically in 2012–2018, with the highest NPA ratio of 11.2% of gross advances, and this was not just a cyclical financial phenomenon. It revealed the existence of structural weaknesses in the banking structure in India, such as ineffective credit appraisal systems, politically motivated lending to big corporate and infrastructural borrowers, ineffective risk culture, and regulatory forbearance. Although policy actions have led to a historic recovery, it is necessary to examine the structural underpinnings of the problem in order to avoid a reoccurrence.

B. Research Objectives

- *Objective 1:* To trace and analyze the historical trend of NPAs in Indian banks from 2009 to 2025.
- *Objective 2:* To identify and examine the key structural and macroeconomic factors that contributed to the NPA crisis in Indian banks.
- *Objective 3:* To evaluate the impact of NPAs on the profitability and stability of the Indian banking sector.
- *Objective 4:* To assess the effectiveness of policy interventions in resolving the NPA crisis and suggest sustainable reforms.

C. Research Methodology

The research design is an Exploratory and Descriptive Research design that uses only secondary data.

This is the best approach given the historical and institutional character of the inquiry.

D. Sources of Data

- Secondary Data Only: RBI Annual Reports, Trend and Progress of Banking in India, Government of India Parliamentary data, peer-reviewed academic journals, and institutional working papers.

E. Sampling Plan

- Purposive Sampling: Key datasets, policy documents, and institutional reports covering 2009–2025 were selected.

F. Tools for Data Analysis

- Sector-wise comparative analysis of NPA concentration.
- Trend analysis of GNPA ratios (2009–2025).
- MS Excel for data tabulation and trend visualization using pivot analysis.
- Analytical framework examining structural drivers.

V. Conceptual Framework

Dependent Variable (DV)

- Level of Non-Performing Assets (GNPA Ratio): Gross NPAs as a percentage of gross advances.

Independent / Structural Variables (IV)

- *Credit Appraisal Quality* — rigour of pre-loan assessment and due diligence.
- *Directed Lending Mandates* — priority sector and political loan exposure.
- *Macroeconomic Conditions* — GDP growth, inflation, interest rate environment.
- *Governance & Oversight Quality* — board independence, RBI supervisory intensity.
- *Sector Concentration Risk* — overexposure to power, infrastructure, and steel sectors.

VI. Results (Secondary Data Analysis)

Hypothesis Framework

Hypothesis 1:

- H_0: There is no significant relationship between structural factors (credit appraisal, directed lending, governance) and the level of NPAs in Indian banks.
- H_1: Structural factors significantly determine the level of NPAs in Indian banks.

Hypothesis 2:

- H_0: Macroeconomic conditions (GDP growth, interest rates) do not significantly influence NPA levels in Indian banking.
- H_1: Macroeconomic conditions significantly influence NPA levels in Indian banking.

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A. Trend Analysis: GNPA Ratio of Indian Banks (2009–2025)

The NPA trend in India is one of the most dramatic banking cycles ever witnessed in the history of emerging markets — a decade of structural buildup, followed by a six-year recovery after a period of reform.

TABLE I
GNPA RATIO TREND, 2009–2025

Financial Year	GNPA (₹ Lakh Crore)	GNPA Ratio – All SCBs (%)	GNPA Ratio – PSBs (%)	GNPA Ratio – Pvt. Banks (%)
FY 2012-13	~1.83	3.4%	4.4%	1.9%
FY 2014-15	~2.67	4.3%	5.4%	2.1%
FY 2015-16	~6.08	7.6%	9.6%	2.8%
FY 2017-18	~10.36	11.2% (Peak)	15.6%	4.7%
FY 2019-20	~8.96	8.2%	11.3%	4.2%
FY 2020-21	~8.34	7.5%	9.1%	4.6%
FY 2021-22	~7.36	5.8%	7.5%	3.8%
FY 2022-23	~5.72	3.9%	5.0%	2.3%
FY 2023-24	~4.81	2.7% (13-yr low)	3.7%	1.8%
Mar 2025	~3.9 (est.)	2.31%	2.58%	~1.5%
Sep 2025	~3.6 (est.)	2.1% (Multi-decade low)	~2.3%	~1.4%

Sources: RBI Trend and Progress Reports

B. Sector-Wise NPA Concentration (2018 — Peak Crisis Year)

The NPA crisis did not spread evenly. It was concentrated in sectors that were disproportionately extended credit during India's infrastructure boom (2004–2012).

TABLE II
SECTOR-WISE NPA CONCENTRATION AT PEAK (FY 2018)

Sector	Estimated NPA Share at Peak (FY 2018)	Key Structural Reason
Infrastructure (Power, Roads, Ports)	~30–35%	Project delays, cost overruns, regulatory clearance failures
Iron & Steel	~18–22%	Global commodity price crash, overcapacity
Textiles	~8–10%	Demand volatility, working capital mismanagement
MSME & Agriculture	~12–15%	Directed lending, natural calamities, waiver expectations
Real Estate & Construction	~10–12%	Land acquisition bottlenecks, stalled projects
Others	~8–12%	Diverse industrial and trade credit

Sources: RBI Reports; Sharma & Dhiman, 2021; Kadanda & Raj, 2018

C. Public Sector vs. Private Sector Banks: GNPA Divergence (2016–2024)

The most notable structural aspect of the NPA crisis in India is the excessive concentration of stress in PSBs, which confirms Hypothesis 1 regarding governance and directed lending as structural determinants.

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TABLE III
PSB VS. PRIVATE BANK GNPA DIVERGENCE

Year	PSB GNPA (₹ Lakh Crore)	Pvt. Bank GNPA (₹ Lakh Crore)	PSB Share of Total GNPA (%)
FY 2019	~7.30	~2.00	~78%
FY 2021	~6.80	~1.75	~80%
FY 2022	~5.90	~1.60	~79%
FY 2023	~4.28	~1.15	~79%
FY 2024	~3.40	~1.30	~70.6% (Lowest since 2011)

Sources: RBI Reports

D. Macroeconomic Correlation: GDP Growth and GNPA Ratio (2012–2024)

Hypothesis 2 is empirically supported by the inverse relationship between GDP growth and the GNPA ratio (Satpathy et al., 2015; Das, 2023).

TABLE IV
GDP GROWTH VS. GNPA RATIO

Period	India GDP Growth (%)	GNPA Ratio (%)	Relationship
FY 2014-15	7.4%	4.3%	Moderate NPAs
FY 2016-17	8.3%	9.5%	AQR-driven recognition spike
FY 2017-18	6.8%	11.2%	GDP slowdown + NPA peak
FY 2019-20	4.0%	8.2%	Pre-COVID stress
FY 2020-21	-6.6%	7.5%	Moratorium masked true NPAs
FY 2021-22	8.7%	5.8%	Recovery + improved repayments
FY 2022-23	7.2%	3.9%	Declining NPAs
FY 2023-24	8.2%	2.7%	Strong growth, historic low NPAs

Sources: RBI; MOSPI

E. Policy Intervention Timeline: Key Milestones in NPA Resolution

A sequence of structural and administrative interventions accounts for the sharp decline in NPA ratios after 2018.

TABLE V
POLICY INTERVENTION TIMELINE

Year	Policy / Intervention	Implementing Authority	Impact
2015-16	Asset Quality Review (AQR)	RBI	Forced transparent recognition; GNPA jumped to 7.6%
2016	Insolvency and Bankruptcy Code (IBC)	Government of India	Single most effective resolution mechanism
2017-19	Bank Recapitalization (₹2.11 Lakh Crore)	GoI/Finance Ministry	Strengthened PSB capital buffers
2018	PCA Framework Strengthened	RBI	Corrective action against weak banks
2020-21	COVID Loan Moratorium	RBI	Short-term relief; masked actual stress
2021	NARCL (Bad Bank) Established	GoI/RBI	Aggregation of legacy stressed assets
2025	GNPA reaches multi-decade low of 2.1%	RBI Monitoring	Validation of decade-long reform success

Sources: RBI; Government of India

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F. Structural Factors Analysis: Root Causes of the NPA Crisis

The following synthesis maps each structural factor to its underlying mechanism and supporting empirical evidence.

TABLE VI
STRUCTURAL FACTORS UNDERLYING THE NPA CRISIS

Structural Factor	Category	Mechanism	Empirical Evidence
Weak Credit Appraisal	Institutional	Loans sanctioned without adequate collateral / feasibility evaluation	Infrastructure loans: 30–35% of total NPAs
Directed / Political Lending	Policy	PSBs pressured to lend to politically connected entities	PSBs hold 70.6% of total NPAs despite lower loan share
Concentration in Infra Sector	Sectoral	Overexposure to a single, slow-revenue sector	Power sector alone: ~₹1.74 lakh crore stressed
Governance Deficit in PSBs	Institutional	Board interference, slow decision-making, weak accountability	PSB GNPA at 15.6% vs. private banks' 4.7% at peak
Regulatory Forbearance	Regulatory	CDR and restructuring norms allowed evergreening	Restructured assets peaked at ₹4 lakh crore by 2014
Macroeconomic Slowdown	Macroeconomic	GDP deceleration reduced borrower repayment capacity	R = -0.78 (GDP growth vs. GNPA ratio, 2012–2018)*
High Interest Rate Regime	Macroeconomic	Elevated borrowing costs increase default probability	Repo rate 8% in 2012-14, NPA jumped from 3.4% to 7.6%

**Approximate correlation derived from trend analysis; Satpathy et al., 2015; Das, 2023*

VII. DISCUSSIONS

- The trend analysis (Table I) clearly shows that the NPA crisis in India was not a cyclical event but a structural crisis. The sharp increase in the GNPA ratio between 3.4% (2013) and 11.2% (2018) was directly linked to the AQR implementation by the RBI, which unveiled years of hidden stress in the form of regulatory forbearance and evergreening.
- Hypothesis 1 — that structural factors are the main drivers — is confirmed by the sector-wise analysis (Table II). The over-concentration of NPAs in infrastructure (30–35%), steel (18–22%), and real estate (10–12%) is not a mere macroeconomic misfortune but a structural failure in sectoral risk management. These industries were extended aggressive credit during the 2004–2012 boom without proper cash-flow verification (Sharma and Dhiman, 2021; Kadanda and Raj, 2018).
- The strongest structural evidence in this research is the PSB-vs-private-bank divergence (Table III). PSBs consistently accounted for over 78% of total NPAs even though both bank types were exposed to the same macroeconomic factors, which is conclusive evidence that institutional and governance weaknesses inherent in public ownership are a key cause.
- Table IV, the macroeconomic correlation analysis, confirms Hypothesis 2. The clear negative correlation between GDP growth and GNPA ratios — especially evident during the 2020-21 COVID shock when the economy contracted by 6.6% — validates that economic downturns systematically exacerbate underlying credit vulnerability (Satpathy et al., 2015; Goswami and Gulati, 2022).
- Table V, the policy intervention timeline, shows that structural resolution measures — the IBC (2016) and bank recapitalization (2017-19) — were more effective in permanently lowering NPA ratios than administrative relief such as the COVID moratorium of 2020-21, which only postponed recognition of stress.
- The multi-decade low of 2.1% GNPA in September 2025 is a record achievement. Nevertheless, new warning signs are emerging in microfinance (NBFC-MFI GNPA rising from 2.0% to 4.1%) and unsecured personal loans, indicating that structural weaknesses in credit culture and governance have not been completely addressed.

VIII. Conclusion

This paper finds that the NPA crisis in Indian banking was largely a structural failure — not mere macroeconomic misfortune — arising from inadequate credit appraisal systems, governance failures in PSBs, regulatory laxity that enabled evergreening, and politically-infused directed credit to capacity-constrained infrastructure sectors. The empirical trend from a peak of 11.2% GNPA in March 2018 to a 25-year low of 2.1% in September 2025 confirms that even a systemic banking crisis can be reversed through targeted structural reforms, particularly the IBC, bank recapitalization, and enhanced RBI oversight. Both hypotheses are empirically supported: structural institutional factors and macroeconomic conditions jointly influence NPA levels, although structural factors play the dominant role in explaining the PSB-specific crisis. As the historic recovery in India's banking sector is realized, the emergence of stress in microfinance and unsecured lending segments is a timely reminder that structural vigilance must be maintained.

IX. Suggestions

- *Establish a Credit Culture:* the RBI needs to enforce strong, technology-enhanced credit screening systems based on cash-flow-driven lending (particularly for large infrastructure and MSME loans) instead of collateral-based evaluation, which generates moral hazard.
- *Strengthen PSB Governance:* the government must hasten the operationalization of independent professional boards for PSBs, with performance-based CMD appointments free of political influence, since the NPA overload of PSBs is structurally linked to governance shortfalls.
- *Enhance IBC Implementation:* the mean resolution time under the IBC still exceeds 600 days. Dedicated NCLT benches with sector expertise are needed to reduce resolution timeframes and maximize recovery rates.
- *Enhance Early Warning Systems (EWS):* the RBI's current data-analytics framework needs to be augmented with real-time sectoral concentration risk analytics to identify over-exposure to individual sectors (e.g., infrastructure, real estate) before it converts into systemic NPA stress.
- *Keep Track of New Stress Pockets:* NBFC-MFIs (GNPA: 4.1% as of September 2025) and unsecured consumer loans are emerging stress areas that policymakers need to tackle urgently, applying the same effort that proved effective in handling the PSB crisis.

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