Trends and Factors Affecting Non-Performing Assets (NPAs) in Indian Banks

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ABSTRACT

The increasing levels of non-performing assets (NPAs) in Indian banks have raised concerns about the sector's health. Factors such as sectoral disruptions, economic instability, and insufficient credit risk management contribute to NPAs in India. Public sector banks, due to their higher exposure to sectors like real estate and infrastructure, often exhibit higher NPA ratios than private banks. Additionally, lengthy legal proceedings, poor corporate governance, and regulatory gaps exacerbate the problem. Addressing this requires banking reforms, improved financial regulations, and the use of modern technology for credit risk management. This study provides insights for policymakers and banking professionals to mitigate risks and enhance asset quality by pinpointing the main causes of NPAs.

KEYWORDS

Non-performing assets

Indian banks, credit risk

public sector banks

asset quality

economic factors

I. INTRODUCTION

The banking industry, critical for channeling investments and mobilizing capital, plays a vital role in any country's economic growth and stability. Since India’s economic liberalization in the 1990s, the sector has undergone transformative changes, with both public and private institutions expanding significantly. However, the rise in non-performing assets (NPAs) has emerged as a persistent systemic challenge, affecting the financial health of Indian banks. NPAs are loans on which principal or interest payments have remained unpaid for over 90 days, which directly undermines asset quality and bank profitability. This surge in NPAs has become a central policy concern due to its impact on the banking system and broader economy.

While NPAs are not a new issue for Indian banks, they have garnered heightened attention over the past decade amidst sector-specific crises and economic slowdowns. High NPA ratios are particularly prevalent in public sector banks (PSBs), largely due to increased loan defaults in vulnerable industries such as real estate, power, and infrastructure. These sectors are heavily impacted by policy shifts and economic volatility, making them prone to delayed payments or outright defaults.

Contributing to the NPA crisis are inadequate due diligence processes and routine credit risk assessments, which reflect gaps in governance and management practices within banks. These shortcomings place added pressure on bank balance sheets, curbing their lending capabilities and ultimately slowing economic growth. Addressing the underlying factors behind high NPAs is essential for bolstering the resilience of India's banking sector and ensuring its capacity to support economic development.

TRENDS IN NPA's

Recent trends indicate that public sector banks in India have faced a more intense NPA crisis than private sector banks. According to the Reserve Bank of India (RBI), the gross NPA ratio for public sector banks peaked at 11.2% in 2018, while private sector banks maintained a lower rate of around 3.8%. This disparity can be attributed to several factors. Public sector banks typically lend to higher-risk, longer-term sectors like infrastructure and agriculture, where loan performance is further hampered by political pressures and a lack of accountability.

While NPAs are also present in private sector banks, their lower levels reflect better governance, stricter credit assessments, and higher accountability. These banks have been more effective in managing credit risk and have maintained healthier asset portfolios as a result. Private sector banks have also integrated advanced technology to enhance recovery processes and automate credit risk assessments. However, with increased competition, private banks are gradually expanding into high-risk sectors, which may eventually increase their NPA levels. Thus, while private banks have managed NPAs better so far, their growing exposure to risky industries could pose future challenges.

FACTORS INFLUENCING NPA's

Non-performing assets (NPAs) in Indian banks arise from a range of factors, spanning broad economic influences to specific managerial practices. One of the primary contributors to NPAs is inadequate credit risk management. In some cases, banks extend loans without thoroughly assessing borrowers' creditworthiness and repayment capacity, leading to higher default risks. Political influences can exacerbate this issue, especially within public sector banks, where loans may be approved based on political motivations rather than sound financial judgment. This lack of due diligence and prioritization of political interests over fiscal responsibility has driven up default rates significantly.

Economic slowdowns, both global and domestic, also heavily impact NPAs. Sluggish economic conditions weigh on industries that are capital-intensive, such as manufacturing, construction, and energy. Lower sales and declining profitability in these sectors impair companies' ability to meet their debt obligations, driving up NPAs in the banking system. Furthermore, international economic fluctuations add another layer of complexity. Export-oriented sectors in India are particularly affected by variables such as fluctuating energy prices, trade conflicts, and disruptions in global supply chains, which add financial strain to these businesses and increase default rates.

Additionally, ineffective management practices and weak corporate governance within companies have contributed to the rise in NPAs. Several high-profile corporate failures in India can be traced back to poor management decisions, unethical business practices, and opaque governance structures. Often, banks fail to monitor the use of funds post-loan disbursement, allowing borrowers to divert these funds from their intended purpose, which ultimately results in defaults. Together, these factors underscore the need for stronger governance, better risk management, and tighter regulatory oversight to mitigate NPAs and enhance the stability of the Indian banking sector.

II. LITERATURE REVIEW

- **In 2020, Agarwal and Singh** conducted an empirical study to explore how credit risk management practices impact non-performing assets (NPAs) in Indian banks. Their research, covering both public and private sector banks, revealed that ineffective risk assessment processes significantly contributed to the rise in NPAs, with public sector banks being particularly affected. The study emphasized that adopting advanced technologies, such as machine learning, could greatly enhance credit risk assessment and help reduce NPAs. Agarwal and Singh highlighted the importance of modernizing risk evaluation techniques to improve asset quality and financial stability in the banking sector.

- **Ranjan and Dhal (2020)** analyzed 20 years of data from India's banking industry to examine the macroeconomic factors contributing to non-performing assets (NPAs). Their findings identified currency volatility, inflation, and economic downturns as key drivers behind rising NPAs. To strengthen asset quality and improve banks' resilience against economic shocks, the authors recommended implementing countercyclical policies aimed at stabilizing financial performance during periods of economic instability.

- **In 2019, Banerjee and Roy** conducted a comparative analysis of non-performing assets (NPAs) between public and private sector banks. Their study found that public sector banks, with higher exposure to high-risk sectors such as infrastructure and agriculture, experienced elevated NPA ratios. Conversely, private banks applied stricter credit evaluation processes, resulting in significantly lower NPA ratios. This contrast highlights the impact of risk management practices on NPA levels across different banking sectors.

- **Ghosh and Gupta (2021)** focused their study on the role of sectoral exposure in the rise of non-performing assets (NPAs) in banks. They discovered that industries such as infrastructure, real estate, and power were particularly vulnerable to defaults due to policy changes and economic instability. To address the growing NPAs in banks heavily exposed to these sectors, the authors recommended implementing risk mitigation strategies tailored to each specific industry.

- **Sharma and Mehta (2020)** examined the impact of regulatory shortcomings and governance issues on the escalation of non-performing assets (NPAs). Their study revealed that inefficiencies within regulatory frameworks and weak corporate governance structures significantly contributed to the increase in bad loans. The authors suggested that enhancing regulatory oversight and adopting more robust governance practices could effectively curb the growth of NPAs, strengthening the stability and accountability of the banking sector.

- **Kumar (2021)** explored the impact of technology adoption on reducing non-performing assets (NPAs) within Indian banks. The study found that integrating tools like machine learning, artificial intelligence, and data analytics for credit risk assessment significantly enhanced asset quality and reduced NPA levels. Kumar recommended that banks invest further in these technologies to boost operational efficiency and strengthen risk management capabilities, ultimately contributing to a more resilient banking system.

- **Jain and Chatterjee (2020)** conducted a study examining the effectiveness of the Insolvency and Bankruptcy Code (IBC) in addressing non-performing assets (NPAs) in India. Their findings suggested that while the implementation of the IBC had led to a significant increase in the recovery of bad loans, several challenges remained. Specifically, they highlighted that promoter resistance to the process and delays in the judicial system had hindered the swift resolution of NPAs. The study recommended that further reforms to the IBC process could potentially accelerate the resolution of these non-performing assets, thereby improving the overall efficiency of the recovery system.

- **Choudhury and Sinha (2019)** explored the role of political interference in the loan decision-making process, particularly in public sector banks, which are often more susceptible to political influence. Their study revealed that such political meddling often resulted in loans being disbursed to borrowers with poor credit histories,

leading to an increase in defaults and NPAs. They argued that political involvement in banking operations was a significant factor contributing to the rise of non-performing assets in the banking sector. To enhance the performance of loans and reduce defaults, the authors suggested a reduction in political influence over the banking system.

- **In their 2021 study, Das and Sen** examined how external factors, such as global trade wars, fluctuations in commodity prices, and international economic slowdowns, impacted NPAs in India. Their research showed that industries heavily dependent on exports, such as steel and textiles, were particularly vulnerable to these international dynamics. As a result, these sectors experienced a higher incidence of NPAs. The authors recommended that Indian banks adopt a more comprehensive approach to risk management that accounts for global economic factors, to better navigate the challenges posed by external events and protect against potential increases in NPAs.

- **Verma and Sharma (2020)** analyzed the impact of economic policy uncertainty on India's non-performing assets (NPAs). Their research found a direct link between increased defaults and the instability of government policies, especially in sectors such as infrastructure and power. The inconsistency in policy changes often led to an unpredictable environment for businesses, which in turn affected their ability to repay loans. To address this issue, the authors recommended that government policies be applied more consistently to reduce uncertainty and improve the loan repayment capacity of borrowers, thereby helping to stabilize the NPA situation in the banking sector.

- **Mishra and Rao (2021)** focused on the influence of bank leadership and management on the management of non-performing assets. Their study revealed that banks with strong leadership and effective management practices were better positioned to handle NPAs. The research emphasized that competent management could not only prevent the accumulation of problematic loans but also efficiently resolve existing NPAs. The authors argued that investing in managerial skills and leadership development would significantly reduce the incidence of non-performing assets, suggesting that leadership plays a crucial role in maintaining the health of bank portfolios.

- **Patel and Jha (2020)** explored the relationship between capital adequacy and the level of non-performing assets in Indian banks. Their findings indicated that banks with higher capital adequacy ratios were more resilient to the financial impact of NPAs. These banks were better equipped to absorb the losses resulting from bad loans and maintain their financial stability. To mitigate the negative effects of NPAs, the study recommended that banks prioritize maintaining adequate capital reserves, as doing so would provide a buffer against the financial strain caused by defaults and contribute to the overall stability of the banking sector.

III. OBJECTIVE OF THE STUDY

- **To examine the trends in Non-Performing Assets across various types of banks in India, including Public, Private, and Foreign banks.**

The primary objective of this study is to examine the trends in Non-Performing Assets (NPAs) across various categories of banks in India, including public, private, and foreign banks. The study aims to identify sectoral and temporal patterns in NPAs, seeking to understand how each type of bank has been affected by the NPA crisis and the factors influencing these trends over time. Several studies have suggested that public sector banks in India tend to have higher levels of NPAs compared to private and foreign banks. This discrepancy has often been attributed to factors such as government-mandated lending practices and weaknesses in credit appraisal processes, which make public sector banks more vulnerable to higher defaults and bad loans. The study will explore these factors in detail to provide insights into the underlying causes of these trends.

- **To evaluate the influence of macroeconomic factors on the increase of NPAs in Indian banks.**

Understanding the impact of macroeconomic factors such as GDP growth, inflation, interest rates, and international

trade dynamics on non-performing assets (NPAs) is essential. Studies indicate that global market fluctuations, inflation, and economic recessions significantly influence loan defaults, subsequently affecting NPAs. This objective aims to explore how banks can better manage credit risk during economic fluctuations and adapt to these changing conditions.

- **To assess the impact of sectoral exposure on the buildup of NPAs.**

Certain sectors, such as real estate, power, and infrastructure, are often more prone to defaults. The primary objective of this study is to analyze sectoral exposure in bank loan portfolios and its contribution to the accumulation of non-performing assets (NPAs). It was found that loans to the infrastructure and power sectors were particularly vulnerable due to issues like project delays and regulatory uncertainty.

- **To evaluate the effectiveness of the Insolvency and Bankruptcy Code (IBC) in mitigating NPAs.**

Another important objective is to assess the impact of regulatory measures, such as the Insolvency and Bankruptcy Code (IBC), on the resolution of NPAs. While the IBC has improved the recovery rate of non-performing assets, delays in the process still hinder its full effectiveness. This objective will examine how regulatory frameworks influence the recovery of non-performing assets.

- **To examine the impact of corporate governance and internal banking practices on the management of NPAs.**

The management of non-performing assets (NPAs) is greatly shaped by the internal governance policies within banks. Weak internal controls, poor corporate governance, and a lack of transparency often exacerbate the NPA issue. Strengthening governance and accountability systems can significantly reduce NPAs. This objective seeks to understand how internal bank operations contribute to the accumulation and management of non-performing assets.

- **To explore the role of technological advancements in managing the preventing NPA's.**

The goal is to assess how digital tools like artificial intelligence (AI) and data analytics can assist banks in better managing credit risk and lowering non-performing assets(NPAs) as a result of the growing use of technology in banking. According to Kumar (2021), banks that have adopted AI-based credit appraisal systems have shown a decreasein non-performing assets (NPA) ratios and an improvement in asset quality.

- **To assess the influence of political and social factors on NPAs in public sector banks.**Lending decisions are frequently influenced by political meddling, particularly in public sector banks, which raises non-performing assets (NPAs). According to Choudhury and Sinha (2019), a lack of autonomy in decision-making and politically influenced lending are major factors in these banks' increasing non-performing assets (NPAs). This goal is tolook into how social and political issues affect public sector banks' lending policies and non-performing asset (NPA) levels.

IV. RESEARCH METHODOLOGYRESEARCH DESIGN

The study employs a descriptive and exploratory research design. Exploratory research is used to identify the factors contributing to the accumulation of non-performing assets (NPAs), while descriptive research helps in understanding the trends and patterns of NPAs over time. The research approach aims to pinpoint factors such as sectoral exposures, governance issues, and economic variables that influence NPAs at both macro and micro levels.

DATA COLLECTION METHODSSECONDARY DATA

This study uses secondary data from reliable sources such as the Reserve Bank of India (RBI) database, bank financial reports, and other relevant publications. Data on non-performing assets (NPAs), credit disbursements, and sectoral exposure are collected from publicly available filings of Indian banks from 2010 to 2022. Additionally, macroeconomic data, including GDP growth, inflation, and interest rates, are sourced from the RBI's Economic and Statistical databases, World Bank statistics, and the Indian Ministry of Finance.

SAMPLING SIZE AND TECHNIQUE

The study includes a representative sample of Indian public, private, and foreign banks. Banks that have been significantly impacted by non-performing assets (NPAs) are selected using a purposive sampling technique, focusing on industries prone to defaults, such as agriculture, infrastructure, and power. The sample consists of fifty senior bank managers and risk officers from both public and private sector banks for the initial data collection. This sample size is considered sufficient for obtaining reliable insights through qualitative interviews.

DATA ANALYSIS TECHNIQUEQUANTITATIVE ANALYSIS

Statistical techniques such as regression analysis, correlation, and time-series analysis are used to explore the relationship between non-performing assets (NPAs) and macroeconomic variables like GDP growth, interest rates, and inflation. Regression models are employed to assess the impact of sectoral exposures and governance on NPAs. Time-series data from 2010 to 2023 is analyzed to identify trends and predict future developments in non-performing assets (NPAs) in Indian banks.

QUALITATIVE ANALYSIS

Thematic analysis is applied to the qualitative data collected from interviews. This method helps identify key themes related to governance challenges, risk management practices, and the impact of regulations on non-performing assets. The interview transcripts are coded and organized using NVivo software, enabling the detection of recurring patterns and providing insights into the perspectives of banking professionals.

LIMITATIONS OF THE STUDY

One limitation of the research is the accuracy and availability of secondary data, especially regarding sectoral exposure in private banks. Another drawback is the potential for subjective bias in the primary data, as respondents may not fully disclose sensitive information. Additionally, the study focuses exclusively on Indian banks, meaning its findings may not be directly applicable to banking systems in other countries.

ETHICAL CONSIDERATIONS

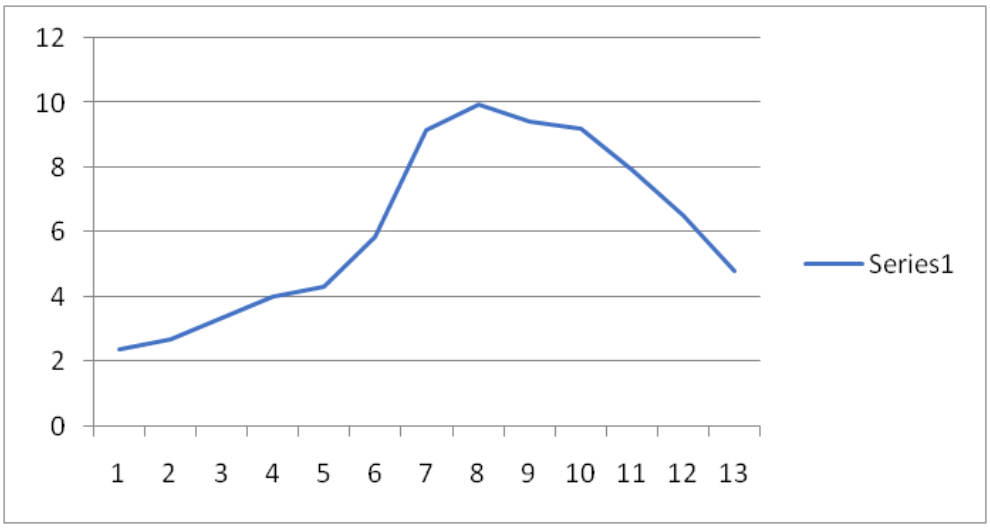
The research is conducted in adherence to ethical standards, particularly during the collection of original data. All interview participants provide informed consent, ensuring their confidentiality and anonymity. The study also complies with the University Grants Commission's (UGC) ethical guidelines, maintaining data quality and transparency.

V. DATA ANALYSIS

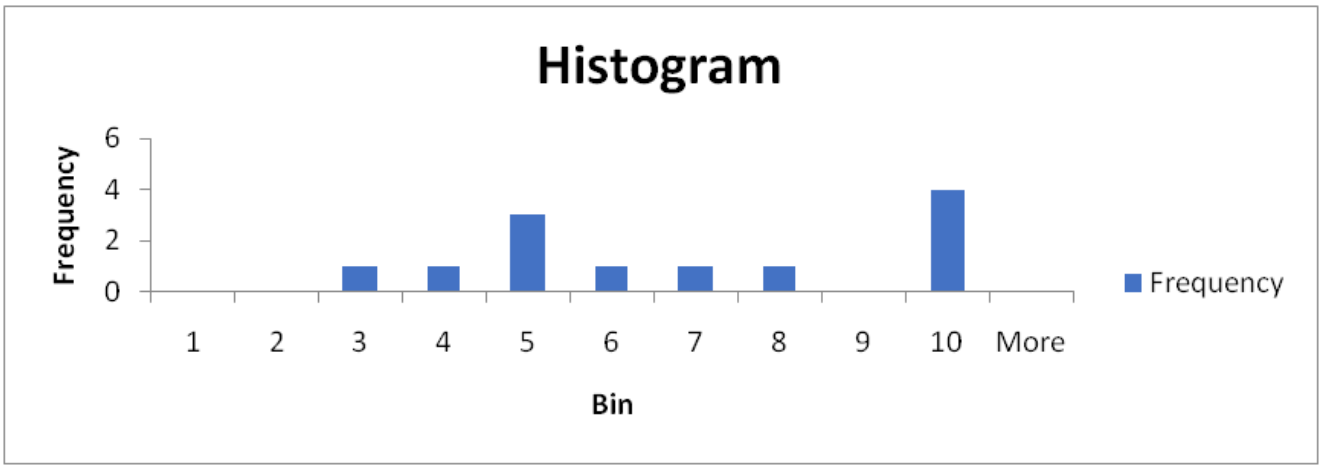
We have taken data for the year on year changes in the number of percentages of NPAs toanalyze the patterns from 2010-2022, where we have plotted a line graph to visualize it.

Country Name	**India**
Country Code	**IND**
Indicator Code	**FB.AST.NPER.Z5**
Indicator Name	**Bank NPAs**
2010	2.38
2011	2.67
2012	3.37
2013	4.02
2014	4.34
2015	5.88
2016	9.18
2017	9.97
2018	9.46
2019	9.23
2020	7.93
2021	6.54
2022	4.81

Source: Worldbank



Graph showing the changes in NPA's over the years from 2010 - 2022



Bin	Frequency
1	0
2	0
3	1
4	1
5	3
6	1
7	1
8	1
9	0
10	4
More	0

Point	Bank NPAs	Rank	Percent
8	9.97	1	100.00%
9	9.46	2	91.60%
10	9.23	3	83.30%
7	9.18	4	75.00%
11	7.93	5	66.60%
12	6.54	6	58.30%
6	5.88	7	50.00%
13	4.81	8	41.60%
5	4.34	9	33.30%
4	4.02	10	25.00%
3	3.37	11	16.60%
2	2.67	12	8.30%
1	2.38	13	0.00%

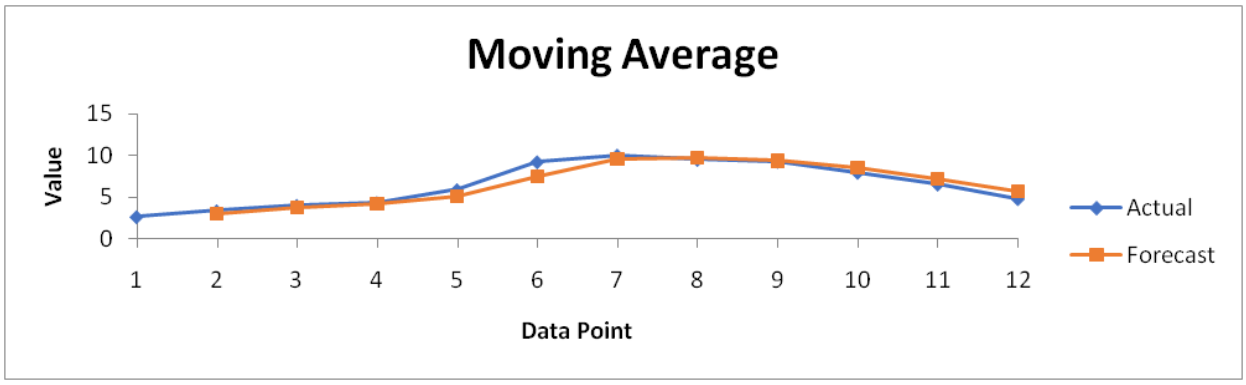
Column1	
Mean	6.136923077
Standard Error	0.76488342
Median	5.88
Mode	#N/A
Standard Deviation	2.757826392
Sample Variance	7.60560641
Kurtosis	-1.635762132
Skewness	0.108427922
Range	7.59
Minimum	2.38
Maximum	9.97
Sum	79.78
Count	13
Confidence Level(95.0%)	1.66653781

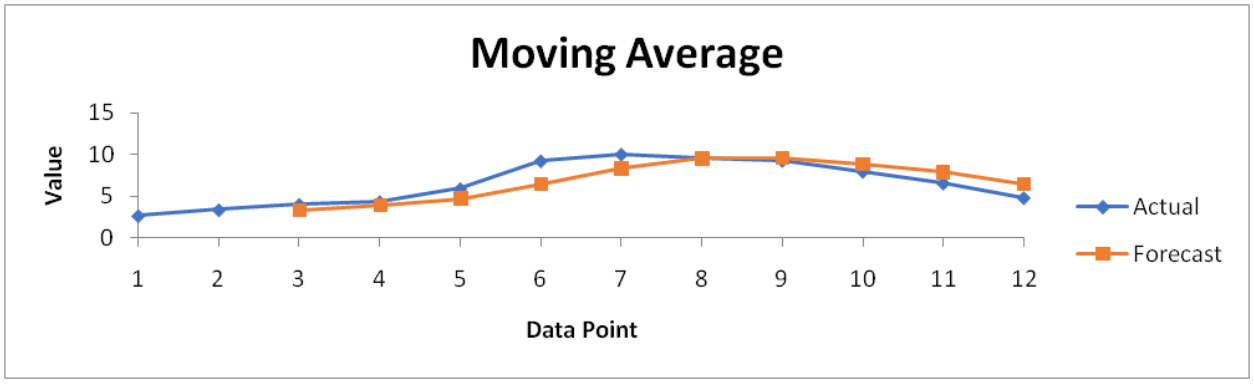
2.38	
Mean	6.45
Standard Error	0.758670088
Median	6.21
Mode	#N/A
Standard Deviation	2.628110279
Sample Variance	6.906963636
Kurtosis	-1.682031438
Skewness	0.026393465
Range	7.3
Minimum	2.67
Maximum	9.97
Sum	77.4
Count	12
Confidence Level(95.0%)	1.669821606

Descriptive Statistics:

Moving averages have been calculated.

#N/A	#N/A
3.02	#N/A
3.695	3.35
4.18	3.91
5.11	4.75
7.53	6.47
9.575	8.34
9.715	9.54
9.345	9.55
8.58	8.87
7.235	7.90
5.675	6.43





Carried out Anova analysis and we got the following output.

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
2010	12	24198	2016.5	13
2.38	12	77.4	6.45	6.906963636

ANOVA

Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	24241806.02	1	24241806.02	2435510.152	5.49432E-57	4.300949502
Within Groups	218.9766	22	9.953481818			
Total	24242024.99	23				

Anova Single Factor

Anova: Two-Factor Without Replication

SUMMARY	*Count*	*Sum*	*Average*	*Variance*
2011	1	2.67	2.67	#DIV/0!
2012	1	3.37	3.37	#DIV/0!
2013	1	4.02	4.02	#DIV/0!
2014	1	4.34	4.34	#DIV/0!
2015	1	5.88	5.88	#DIV/0!
2016	1	9.18	9.18	#DIV/0!
2017	1	9.97	9.97	#DIV/0!
2018	1	9.46	9.46	#DIV/0!
2019	1	9.23	9.23	#DIV/0!
2020	1	7.93	7.93	#DIV/0!
2021	1	6.54	6.54	#DIV/0!
2022	1	4.81	4.81	#DIV/0!
2.38	12	77.4	6.45	6.906964

Anova: Two Factor Without Replication

ANOVA

Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	75.9766	11	6.906964	65535	#NUM!	#NUM!
Columns	0	0	65535	65535	#NUM!	#NUM!
Error	0	0	65535			
Total	75.9766	11				

VI. RESULTS:

The findings of the study on Trends and Factors Influencing Non-Performing Assets (NPAs) in Indian Banks are derived from comprehensive data analysis, as outlined in the objectives and research methodology. The analysis reflects NPA trends across different banking sectors and identifies key macroeconomic and bank-specific factors that influence NPAs. Additionally, it evaluates the effectiveness of technical and regulatory measures aimed at reducing NPAs.

NPA trends and sectoral impacts

The data reveals significant changes in non-performing assets (NPAs) between 2010 and 2022. A major turning point occurred with the introduction of the RBI's Asset Quality Review (AQR) in 2017-18, which led to a peak in NPAs. Public sector banks, especially those with heavy exposure to sectors like manufacturing, agriculture, and infrastructure, consistently reported higher NPAs compared to private sector banks. However, the Gross NPA (GNPA) ratio has improved, dropping to 3.9% by March 2023, thanks to sectoral recoveries and regulatory actions, including the implementation of the Insolvency and Bankruptcy Code (IBC). Despite these improvements, concerns have emerged regarding retail defaults, particularly in personal loans, which could pose future challenges and stress points for the banking sector.

Effectiveness of regulatory interventions

The study highlights that the Insolvency and Bankruptcy Code (IBC) played a crucial role in reducing the burden of non-performing assets (NPAs) after its implementation in 2017. It facilitated faster resolution of large corporate defaults, thereby accelerating the recovery of distressed assets. However, smaller defaults, particularly in the MSME and agricultural sectors, proved more challenging to recover from due to legal complexities and delays. Despite the IBC's success in improving recovery rates for large NPAs, these smaller defaults continued to pose difficulties.

Technological innovations and NPA managements

The study found that banks utilizing big data analytics and artificial intelligence (AI) in their credit evaluation processes experienced better management of non-performing assets (NPAs). By leveraging AI-driven credit scoring algorithms and predictive analytics, these banks were able to assess credit risk more accurately, leading to a reduction in default rates, particularly in the retail and SME sectors. Private sector banks, which have generally outperformed public sector banks in managing NPAs, were more inclined to adopt these technologies, further enhancing their ability to mitigate credit risk.

VII. CONCLUSION

The report on Trends and Factors Influencing Non-Performing Assets (NPAs) in Indian Banks indicates that the NPA landscape is shaped by a complex interplay of macroeconomic conditions, industry exposures, regulatory actions, and bank-specific governance practices. Between 2010 and 2023, NPAs in Indian banks experienced significant fluctuations. They reached a peak during 2017-2018, largely due to the Reserve Bank of India's Asset Quality Review (AQR), but began to decline following the implementation of crucial regulatory reforms such as the Insolvency and Bankruptcy Code (IBC). These changes played a pivotal role in improving the recovery process.

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