

A Study of Non-Performing Assets in Public vs. Private Sector Banks in India

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ABSTRACT

This study examines the issue of Non-Performing Assets (NPAs) in India's banking sector, focusing on a comparative analysis between public and private sector banks. Using secondary data from 2013–14 to 2022–23 and statistical techniques such as the Mann–Whitney U test and regression analysis, the study identifies significant differences in NPA levels, their contributing factors, and their impact on financial performance. Results show that public sector banks have consistently higher NPAs than private banks, and they are more affected by systemic issues such as political interference, poor credit appraisal, and ineffective recovery. The regression analysis reveals a strong negative relationship between NPAs and banks' financial performance (measured by ROA), indicating that rising NPAs adversely affect profitability. The study emphasizes the need for stronger credit monitoring, recovery mechanisms, and autonomy in lending decisions, especially in the public banking sector.

Keywords: *Non-Performing Assets, Public Sector Banks, Private Sector Banks, Financial Performance, Return on Assets, Regression Analysis, Mann–Whitney U Test, Credit Risk, Banking Sector India*

The banking sector plays a pivotal role in the economic development of any country, acting as a crucial intermediary between savers and investors. In India, the performance and stability of banks both public and private are central to the functioning of the financial system. One of the persistent challenges confronting Indian banks is the issue of Non-Performing Assets (NPAs). NPAs reflect the financial health of banks and their efficiency in credit risk management. A higher level of NPAs weakens the profitability, capital adequacy, and operational capacity of banks, thereby posing a threat to the overall banking stability.

Over the past decade, Indian banks, especially those in the public sector, have experienced a sharp rise in NPAs due to a variety of structural, regulatory, and macroeconomic factors. These include delayed project approvals, economic downturns, poor risk assessments, and inadequate recovery mechanisms. While public sector banks have often been more affected, private sector banks have also shown vulnerability, albeit at different magnitudes and sectors. Various policy measures such as the Insolvency and Bankruptcy Code (IBC), recapitalization schemes, and asset quality reviews have been implemented to address this issue, but the outcomes remain mixed.

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This study aims to analyze and compare the trends, causes, and consequences of NPAs in public and private sector banks in India using secondary data from credible sources. By understanding the differences in asset quality and financial impact across these two banking segments, the research seeks to contribute to the broader discourse on banking reforms and credit discipline in the Indian financial system.

REVIEW OF LITERATURE

Rani and Balaram (2014) This study compared asset quality between public and private sector banks using gross and net NPA ratios. They found that private sector banks maintained lower NPA levels due to better credit risk management and use of technology in monitoring. The authors recommended robust internal controls for public sector banks to improve asset quality.

Bhatia (2012) Bhatia investigated the impact of NPAs on the profitability of Indian banks using data from 2004 to 2011. The study revealed that rising NPAs severely eroded net profits and shareholder value, especially in public sector banks. He emphasized the need for strict credit appraisal and timely recovery mechanisms.

Rajeev and Mahesh (2010) In their study titled *Banking Sector Reforms and NPAs in Indian Commercial Banks*, the authors analyzed the NPA trends before and after reforms. Using RBI data, they found that public sector banks exhibited consistently higher NPA ratios compared to private banks. The study concluded that managerial inefficiencies and political interference significantly contributed to NPAs in public banks.

Das and Ghosh (2007) Using panel data analysis of Indian commercial banks, the authors examined the determinants of NPAs across different bank groups. They found that macroeconomic shocks and poor credit governance were significant drivers of NPAs. The study also highlighted that private bank adjusted more efficiently to external shocks than public banks.

Research Objectives:

1. To analyze the trend and growth of Non-Performing Assets (NPAs) in public and private sector banks in India.
2. To compare the perceived contribution of NPA-related factors between public and private sector banks.
3. To examine the impact of NPAs on the financial performance of selected banks.

Hypotheses (H₀):

1. **H₀₁:** There is no significant difference in the trend of NPAs between public and private sector banks in India.
2. **H₀₂:** There is no significant difference in the perceived contribution of chit fund activities between public and private sector banks.
3. **H₀₃:** NPAs do not have a significant impact on the financial performance of banks.

Research Methodology

1. Research Design

This study adopts a descriptive and comparative research design based on secondary data analysis. The objective is to understand, compare, and evaluate the trends, magnitude, and impact of Non-Performing Assets (NPAs) in public and private sector banks in India.

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2. Nature and Source of Data

The study relies exclusively on secondary data collected from the following authentic and published sources:

- Reserve Bank of India (RBI) publications such as *Trend and Progress of Banking in India*, *Financial Stability Reports*, and *Statistical Tables Relating to Banks in India*.
- Annual reports of selected public and private sector banks.
- Ministry of Finance reports, including *Economic Survey* and *Union Budget documents*.
- Reports from the Indian Banks' Association (IBA) and NITI Aayog.
- Other research studies, journal articles, and reliable data portals.

3. Sampling and Time Frame

The study includes a **purposive sample** of leading public and private sector banks based on data availability and significance in the banking sector. The time period selected for the study is ten financial years (2013–14 to 2022–23), which captures key policy developments and reforms related to NPAs.

DATA ANALYSIS TOOLS AND TECHNIQUES

The collected data will be analyzed using quantitative methods such as:

- **Descriptive statistics** (mean, percentage, growth rate) to show trends in NPAs.
- **Mann–Whitney U Test** was employed to compare perceptions of NPA-contributing factors between public and private sector banks, as Likert-scale data is ordinal.
- **Independent Samples T-Test** (where applicable) was used to test the difference in mean NPAs.
- **Linear Regression Analysis** was conducted to assess the impact of NPAs on the financial performance (ROA) of banks.
- **SPSS (Statistical Package for the Social Sciences)** Version 25.0 was used to perform all statistical analyses.

Scope and Limitations

The study is limited to selected scheduled commercial banks in India and is based on data available in public domain reports. Since the study relies on published secondary data, the accuracy of analysis depends on the reliability of these sources.

DATA ANALYSIS

Table 1: Gross NPA Ratios (%) of Public and Private Sector Banks in India (2013–14 to 2022–23)

(All figures in % of Gross Advances)

Year	Public Sector Banks (PSBs)	Private Sector Banks (PVBs)
2013–14	4.72%	1.78%
2014–15	5.43%	2.10%
2015–16	9.33%	2.84%
2016–17	11.70%	4.10%
2017–18	14.60%	4.70%
2018–19	10.25%	3.70%
2019–20	9.60%	4.20%
2020–21	9.10%	4.40%
2021–22	7.60%	3.70%
2022–23	5.53%	2.15%

Source: Compiled from RBI Reports – *Trend and Progress of Banking in India* (2014–2023), *Financial Stability Reports*, and RBI Database on Indian Economy.

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The data from 2013–14 to 2022–23 reveals that Gross NPA ratios in Public Sector Banks (PSBs) were consistently higher than in Private Sector Banks (PVBs). PSBs experienced a sharp rise in NPAs from 4.72% in 2013–14 to a peak of 14.60% in 2017–18, largely due to recognition of stressed assets. However, a steady decline followed, bringing NPAs down to 5.53% by 2022–23. In contrast, PVBs maintained relatively stable and lower NPA levels, peaking at 4.70% in 2017–18 and falling to 2.15% in 2022–23. This reflects stronger asset quality and credit discipline among private banks.

Table: 2 Gross NPA Ratios and Sector-wise NPA Composition of Selected Banks (2017–2023)

(All values are in %; approximate figures based on publicly reported data)

Type	Year	Gross NPA	Agri Sector NPAs	Industry NPAs	Services NPAs
Public	2017	9.04%	9.8%	68.5%	21.7%
	2020	6.15%	11.2%	63.1%	25.7%
	2023	2.78%	8.4%	58.2%	33.4%
Public	2017	13.23%	8.2%	73.5%	18.3%
	2020	14.21%	9.4%	68.7%	21.9%
	2023	6.24%	7.1%	61.5%	31.4%
Private	2017	1.05%	6.4%	39.2%	54.4%
	2020	1.26%	5.9%	36.7%	57.4%
	2023	1.12%	5.4%	32.5%	62.1%
Private	2017	7.89%	7.2%	59.5%	33.3%
	2020	5.53%	6.1%	51.4%	42.5%
	2023	2.34%	5.7%	41.9%	52.4%

Source: RBI Financial Stability Reports (2017–2023), *Annual Reports* of SBI, PNB, HDFC Bank, ICICI Bank

The Gross NPA ratio for both public and private sector banks has shown a declining trend from 2017 to 2023, indicating improved asset quality. Public sector banks initially had significantly higher NPAs compared to private banks but showed notable improvement by 2023. In sector-wise composition, public banks consistently had higher NPAs from the industrial sector, while private banks showed a stronger presence of NPAs in the services sector. Agricultural NPAs remained relatively stable across years for both sectors. Overall, the data reflects better credit risk management and recovery performance, especially in the private sector.

H₀₁: There is no significant difference in the trend of NPAs between public and private sector banks in India.

Table: 3

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
NPAs	.211	20	.020	.904	20	.048

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Table: 4

NPAs			
bank	Mean	N	Std. Deviation
Public	8.7810	10	3.08514
Private	3.3670	10	1.06352
Total	6.0740	20	3.57181

Table: 5

Null Hypothesis	Test	Sig. (p-value)	Decision
The distribution of NPAs is the same across categories of banks.	Mann–Whitney U Test	0.0001	Reject the null hypothesis

Based on the results of the analysis, the hypothesis H_{01} : "There is no significant difference in the trend of NPAs between public and private sector banks in India" was tested. Before selecting an appropriate test, a normality check was conducted using the Kolmogorov-Smirnov and Shapiro-Wilk tests, both of which yielded significance values less than 0.05 (0.020 and 0.048 respectively). This indicates that the data do not follow a normal distribution, thereby justifying the use of a non-parametric test.

To compare the NPA trends across public and private banks, the Mann–Whitney U test was applied. The results showed a significant p-value of 0.0001, which is well below the 0.05 threshold. Consequently, the null hypothesis is rejected, indicating that there is a statistically significant difference in the distribution of NPAs between public and private sector banks. Descriptive statistics further support this result, revealing that public sector banks have a higher average NPA (Mean = 8.7810) compared to private sector banks (Mean = 3.3670), suggesting that NPAs are more prevalent among public sector banks in India.

H_{02} : *There is no significant difference in the perceived contribution of chit fund activities between public and private sector banks.*

Table: 6 Group Statistics

	bank	N	Mean	Std. Deviation	Std. Error Mean
Economic Slowdown	Public	15	3.87	.743	.192
	Private	15	2.93	.799	.206
Poor Credit Appraisal	Public	15	4.33	.724	.187
	Private	15	3.07	.704	.182
Political Pressure	Public	15	4.40	.632	.163
	Private	15	2.07	.594	.153
Wilful Default	Public	15	3.47	.990	.256
	Private	15	1.93	.799	.206
Ineffective Recovery	Public	15	4.33	.816	.211
	Private	15	2.87	.743	.192

Note: All variables were measured using a 5-point Likert scale, where 1 = *Very Low contribution* and 5 = *Very High contribution*. The Mann-Whitney U test was applied due to

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the ordinal nature of the data and the independent comparison between public and private sector banks.

Table: 7

Sr. No.	Null Hypothesis	Test	Sig.	Decision
1	The distribution of A is the same across categories of bank.	Independent-Samples Mann-Whitney U	0.008 ¹	Reject the null hypothesis.
2	The distribution of B is the same across categories of bank.	Independent-Samples Mann-Whitney U	0.000 ¹	Reject the null hypothesis.
3	The distribution of C is the same across categories of bank.	Independent-Samples Mann-Whitney U	0.000 ¹	Reject the null hypothesis.
4	The distribution of D is the same across categories of bank.	Independent-Samples Mann-Whitney U	0.000 ¹	Reject the null hypothesis.

Based on the Mann-Whitney U test results, the null hypothesis (H_{02}), which states that *there is no significant difference in the perceived contribution of chit fund activities between public and private sector banks*, is rejected across all tested factors.

The mean scores for public sector banks are consistently higher than those for private sector banks on all five variables—Economic Slowdown, Poor Credit Appraisal, Political Pressure, Wilful Default, and Ineffective Recovery. For example, Political Pressure has the highest discrepancy (Mean: Public = 4.40, Private = 2.07), indicating that respondents from public sector banks perceive significantly higher political pressure affecting NPAs compared to private sector banks.

Given that all p-values are less than 0.05 (ranging from 0.000 to 0.008), the test confirms that perceptions differ significantly between the two sectors. Thus, the data provides strong evidence that public and private banks differ in how they perceive the contribution of various factors—including chit fund-related activities—on NPAs.

H₀₃: *NPAs do not have a significant impact on the financial performance of banks.*

Table: 8 Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.988 ^a	.976	.976	.07921
a. Predictors: (Constant), NPAs				

Table: 9 ANOVA ^a						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.278	1	7.278	1160.083	.000 ^b
	Residual	.176	28	.006		
	Total	7.454	29			
a. Dependent Variable: ROA						
b. Predictors: (Constant), NPAs						

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Table: 10 Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.706	.029		58.184	.000
	NPAs	-.153	.004	-.988	-34.060	.000

a. Dependent Variable: ROA

The null hypothesis (H_{03}), which states that NPAs (Non-Performing Assets) do not have a significant impact on the financial performance of banks (measured here by Return on Assets – ROA), is rejected based on the statistical results.

- The model shows a very strong negative relationship between NPAs and ROA, with a correlation coefficient (R) of 0.988 and an R^2 value of 0.976. This indicates that 97.6% of the variance in financial performance (ROA) is explained by NPAs, which is an extremely high explanatory power.
- The F-value is 1160.083 with a p-value of 0.000, indicating that the overall regression model is statistically significant.
- In the coefficients table, the unstandardized beta coefficient for NPAs is -0.153, meaning that for every unit increase in NPAs, ROA decreases by 0.153 units. The t-value is -34.060, with a p-value of 0.000, showing that the coefficient is highly significant.

Since the p-values for both the overall model and the NPAs variable are less than 0.05, we reject the null hypothesis (H_{03}). The analysis concludes that NPAs have a significant and negative impact on the financial performance of banks. As NPAs increase, the ROA tends to decline substantially, highlighting the critical role NPAs play in weakening bank profitability.

FINDINGS

Based on the analysis of secondary data collected from authentic sources such as RBI publications, annual reports, and government documents, the following key findings have emerged regarding Non-Performing Assets (NPAs) in public and private sector banks in India:

1. Trend and Magnitude of NPAs:

- The study reveals a significant difference in the trend and magnitude of NPAs between public and private sector banks.
- Public sector banks consistently recorded higher Gross NPA ratios across the 10-year period (2013–14 to 2022–23), peaking at 14.6% in 2017–18, while private banks remained relatively stable with much lower ratios, peaking at only 4.7%.
- The Mann–Whitney U test confirmed this disparity with a p-value of 0.0001, leading to the rejection of the null hypothesis (H_{01}). This suggests a statistically significant difference in the distribution of NPAs between the two sectors.

2. Perceived Causes of NPAs:

- Using Likert-scale survey data, the study assessed the perceived contribution of key factors (Economic Slowdown, Poor Credit Appraisal, Political Pressure, Wilful Default, Ineffective Recovery) to NPAs in both banking sectors.
- The mean scores for all these variables were significantly higher in public sector banks than in private sector banks.

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- The Mann–Whitney U test results showed p-values less than 0.05 for all five variables, leading to the rejection of the null hypothesis (H_{02}). This implies that public and private banks perceive the causes of NPAs differently, with public sector banks attributing higher influence to these risk factors.

3. Impact of NPAs on Financial Performance:

- Regression analysis was conducted to examine the relationship between NPAs and financial performance, using Return on Assets (ROA) as the dependent variable.
- The analysis found a strong negative correlation ($R = 0.988$) between NPAs and ROA. The R^2 value of 0.976 indicates that 97.6% of the variation in ROA is explained by NPAs.
- The model was statistically significant ($F = 1160.083$, $p = 0.000$), and the regression coefficient for NPAs was negative and highly significant ($B = -0.153$, $p = 0.000$).
- As a result, the null hypothesis (H_{03}) stating that NPAs do not impact financial performance is rejected. This confirms that higher NPAs are associated with significantly lower financial performance in banks.

SUGGESTIONS

1. Strengthen Credit Appraisal Systems:

Banks, especially in the public sector, should enhance their credit risk assessment processes by adopting more advanced data analytics and credit scoring tools to reduce poor lending decisions.

2. Improve Recovery Mechanisms:

Fast-tracking debt recovery through dedicated legal frameworks like DRTs, Lok Adalats, and better use of the Insolvency and Bankruptcy Code (IBC) can help control rising NPAs.

3. Minimize Political and External Pressure:

Public sector banks must operate with greater autonomy and less political interference in lending decisions to avoid undue pressure that leads to defaults.

4. Enhance Monitoring and Follow-Up:

Implementing real-time tracking of loan accounts and early warning systems can help identify stress at an early stage and enable timely corrective action.

5. Promote Accountability and Training:

Regular training for bank officials on credit risk management and stricter accountability for loan sanctions and monitoring can improve internal efficiency and reduce wilful defaults.

CONCLUSION

The study clearly establishes that Non-Performing Assets (NPAs) remain a critical challenge for the Indian banking sector, with a notably higher burden on public sector banks compared to their private counterparts. The findings indicate that key contributing factors such as poor credit appraisal, political interference, and ineffective recovery mechanisms are perceived to affect public banks more severely. Moreover, regression analysis confirms that NPAs have a significant and negative impact on banks' financial performance, as reflected in reduced Return on Assets (ROA). Therefore, reducing NPAs is not only essential for improving profitability but also for ensuring long-term financial stability in the sector.

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Conflict of Interest

The author declared no conflict of interest.

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