

# **Gross and Net Non-Performing Assets of Public and Private Sector Banks in India: A Trend Analysis**

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## **Abstract:**

This study analyzes and compares the trend of Gross NPAs and Net NPAs of selected Public and Private Sector Banks in India over a period of ten years. The research is based on secondary data collected from annual reports and RBI publications. Statistical tools such as Mean, Standard Deviation, Coefficient of Variation, Trend Analysis, and One-Way ANOVA were used for analysis. The findings indicate that Public Sector Banks recorded higher NPA levels compared to Private Sector Banks during the study period. While NPAs increased during the middle years, a declining trend was observed in recent years, reflecting improvement in asset quality and recovery measures. The ANOVA results show that there is a statistically significant difference in NPAs among the selected banks. The study concludes that Private Sector Banks performed better in managing non-performing assets compared to Public Sector Banks.

## **1. Introduction:**

The banking sector plays a crucial role in the economic development of a country by mobilizing savings, allocating credit, and supporting productive investment. In India, banks form the backbone of the financial system and are central to economic growth, financial stability, and monetary transmission. The soundness of the banking sector largely depends on the quality of its assets, as poor asset quality can weaken banks' balance sheets and restrict their ability to perform their intermediation function effectively.

One of the most significant challenges faced by the Indian banking sector in recent years has been the accumulation of non-performing assets (NPAs). Non-performing assets represent loans and advances where the borrower has failed to repay interest or principal for a specified period, leading to deterioration in asset quality. A high level of NPAs adversely affects banks by blocking funds in unproductive assets, reducing interest income, increasing provisioning requirements, and exerting pressure on capital adequacy. Consequently, the magnitude and movement of NPAs serve as critical indicators of financial stress and asset quality in the banking system.

The Indian banking sector, particularly public sector banks, witnessed a sharp rise in NPAs during the past decade due to factors such as economic slowdown, inadequate credit appraisal, corporate governance issues, and sector-specific stress. In response, regulatory authorities introduced several measures, including asset quality reviews, the Insolvency and Bankruptcy Code (IBC), and banking sector reforms aimed at strengthening recovery mechanisms and improving credit discipline. These initiatives have influenced the trend of

gross and net NPAs over time, making it essential to examine changes in the stock of NPAs to understand the evolving asset quality scenario in Indian banking.

While existing studies have extensively examined the determinants and impact of NPAs using econometric models and profitability indicators, relatively fewer studies have focused on analysing the absolute magnitude of gross and net NPAs through a trend-based, secondary data approach. An analysis of NPA amounts provides valuable insights into the scale of stressed assets and the extent of balance-sheet pressure faced by banks. Such an approach is particularly useful for understanding asset quality stress without over-reliance on ratio-based performance measures.

In this context, the present study undertakes a secondary data-based and theoretical review of gross and net non-performing assets in Indian banks. The study analyses trends in the absolute amounts of GNPA and NNPA over a selected period to assess changes in asset quality and financial stress in the banking sector. By synthesising theoretical perspectives and secondary evidence, the study aims to contribute to the existing literature by providing a consolidated understanding of NPA trends and their implications for asset quality management in Indian banking.

## **2. Review of Literature**

(Rao and Reddy 2025), researcher find NPAs Status and Trends of the Select Public and Private Sector Banks in India. They use six selected public and private sector banks like SBI, PNB, BOB, HDFC, ICICI, AXIS. Using secondary data Researcher indicate that public sector banks habitually higher NPA level cause of weak credit system.

(Ramu et al 2024), researcher studied NPA and their impact on bank Profitability. Researcher compare two banks HDFC and ICICI. Using secondary data they find that HDFC banks maintain lower gross and NPA Ratio in compare to ICICI Bank. HDFC Bank demonstrates stronger asset quality and risk management than ICICI Bank, which is reflected in its consistently lower gross and net NPA ratios and more conservative provisioning over the last five years. Although ICICI Bank has improved, its relatively high NPAs and problematic asset ratio indicate further challenges in managing non-performing loans.

Singh (2013), researcher studied about Performance of non-performing assets in Indian Commercial Bank. Using Secondary data researcher compare Private sector bank and Public Sector Bank gross NPA and Net NPA data. In this study they conclude that the NPA of Public Sector bank have been increasing regularly year after year. In contrast, the private sector banks have been decreasing regularly year after year. The proportion of NPAs in public sector banks

is comparatively higher than that in private sector banks. There is a need to reduce and control NPAs to improve the efficiency and profitability of banks.

### NPAs Classification

| Classification | NPA Status | Time Period     | Risk Level | Provisioning |
|----------------|------------|-----------------|------------|--------------|
| Standard Asset | Not NPA    | Regular payment | Low        | 0.4–1%       |
| Sub-standard   | NPA        | ≤ 12 months     | High       | 15–25%       |
| Doubtful       | NPA        | > 12 months     | Very High  | 25–100%      |
| Loss Asset     | NPA        | Irrecoverable   | Extreme    | 100%         |

## 3. Research Methodology

### 3.1 Research Objective

- To examine the trend in gross and net non-performing assets of selected Public and Private Sector Banks in India.
- To compare the trends in gross and net NPAs across selected Public and Private Sector Banks groups in India

### 3.2 Research Design

The study adopts a quantitative and descriptive research design to examine and compare the trends in Gross and Net Non-Performing Assets (NPAs) of selected Indian banks over the study period.

The study is based on secondary data.

Data relating to Gross NPA and Net NPA ratios were collected from:

- Annual Reports of selected banks
- Reserve Bank of India (RBI) publications
- Official bank websites

The data covers the period from 2015–16 to 2024–25.

### 3.3 Sample Selection

The study includes six major Indian banks:

Selected Public Sector Banks like

- SBI
- PNB
- Bank of Baroda

Selected Private Sector Banks like

- HDFC Bank
- ICICI Bank
- Axis Bank

These banks were selected based on Liabilities and Assets of public and private sector banks.

### 3.4 Tools and Techniques Used

To achieve the objectives of the study, the following statistical tools were applied:

#### Descriptive Statistics

- Mean
- Standard Deviation (SD)
- Coefficient of Variation (CV)

The data was analyzed using:

- MS Excel

### 3.5 Hypotheses of the Study

H0<sub>1</sub>: There is no significant difference in the trend of Gross NPAs between Public and Private Sector Banks in India.

H1<sub>1</sub>: There is a significant difference in the trend of Gross NPAs between Public and Private Sector Banks in India.

H0<sub>2</sub>: There is no significant difference in the trend of Net NPAs between Public and Private Sector Banks in India.

H2<sub>2</sub>: There is a significant difference in the trend of Net NPAs between Public and Private Sector Banks in India.

### 3.6 Period of Study

The study covers a period of ten years (2015–16 to 2024–25) to capture long-term trends and structural changes in asset quality.

### 3.7 Limitations of the Study

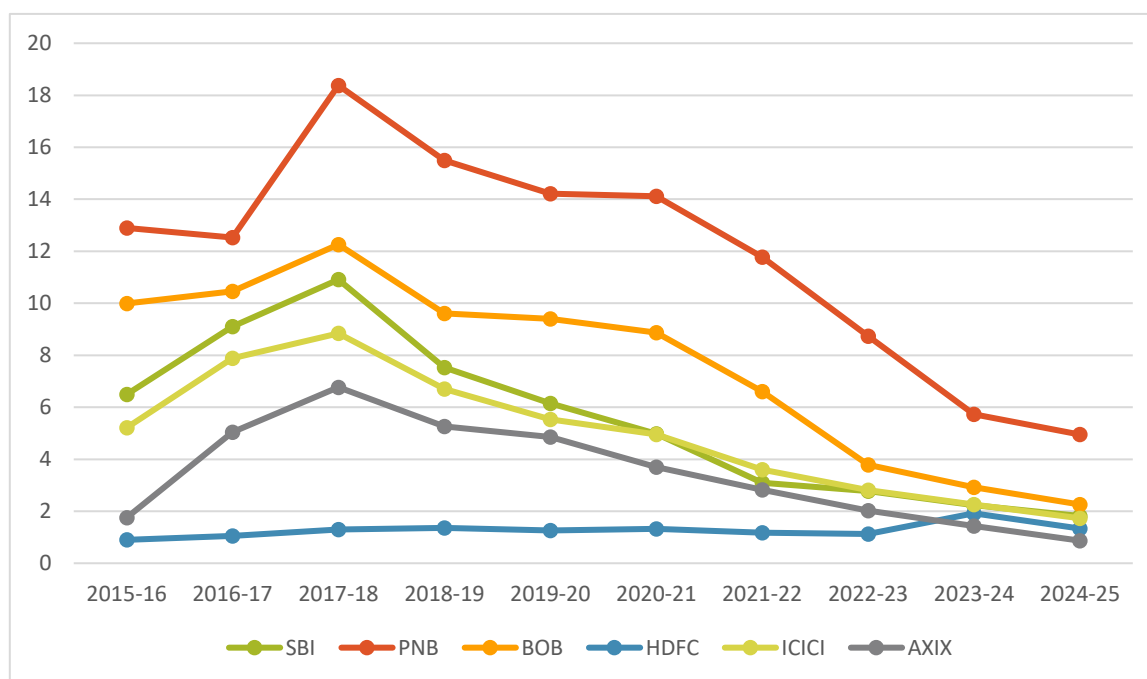
- The study is limited to selected banks only.
- The study is based only on secondary data.
- The analysis is confined to a 10-year period.

Table 1. Analysis of Gross NPAs of Public Sector Banks and Private Sector Bank

Source: Bank Annual Financial Report

| Year    | SBI   | PNB   | BOB   | HDFC | ICICI | AXIX |
|---------|-------|-------|-------|------|-------|------|
| 2015-16 | 6.5   | 12.9  | 9.99  | 0.9  | 5.21  | 1.75 |
| 2016-17 | 9.11  | 12.53 | 10.46 | 1.05 | 7.89  | 5.04 |
| 2017-18 | 10.91 | 18.38 | 12.26 | 1.3  | 8.84  | 6.77 |
| 2018-19 | 7.53  | 15.5  | 9.61  | 1.36 | 6.7   | 5.26 |
| 2019-20 | 6.15  | 14.21 | 9.4   | 1.26 | 5.53  | 4.86 |
| 2020-21 | 4.98  | 14.12 | 8.87  | 1.32 | 4.96  | 3.7  |
| 2021-22 | 3.09  | 11.78 | 6.61  | 1.17 | 3.6   | 2.82 |
| 2022-23 | 2.78  | 8.74  | 3.79  | 1.12 | 2.81  | 2.02 |

|         |       |        |       |       |       |       |
|---------|-------|--------|-------|-------|-------|-------|
| 2023-24 | 2.24  | 5.73   | 2.92  | 1.92  | 2.26  | 1.43  |
| 2024-25 | 1.82  | 4.95   | 2.26  | 1.33  | 1.73  | 0.87  |
| Mean    | 5.511 | 11.884 | 7.617 | 1.273 | 4.953 | 3.452 |
| SD      | 3.08  | 4.26   | 3.50  | 0.27  | 2.39  | 1.97  |
| CV      | 55.92 | 35.81  | 45.98 | 21.20 | 48.18 | 57.08 |



**Fig 1. Gross NPA Ratio of Public Sector Banks and Private Sector Bank**

**Table 2. ANOVA – Gross NPA Ratio**

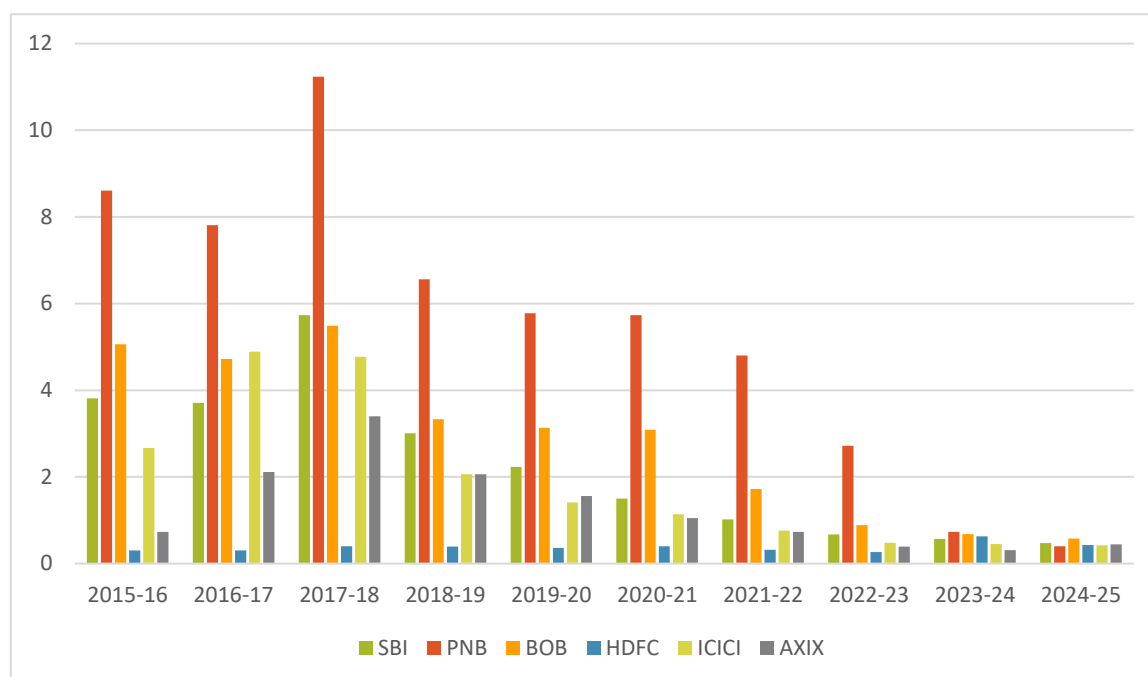
| Source of Variation | SS       | df | MS       | F        | P-value        | F crit  |
|---------------------|----------|----|----------|----------|----------------|---------|
| Between Groups      | 671.2229 | 5  | 134.2446 | 16.26362 | 0.000000000092 | 2.38607 |
| Within Groups       | 445.7315 | 54 | 8.254287 |          |                |         |
| Total               | 1116.954 | 59 |          |          |                |         |

The One-Way ANOVA results indicate that there is a statistically significant difference in Gross NPA levels among the selected banks ( $F(5,54) = 16.26$ ,  $p < 0.05$ ). Therefore, the null hypothesis stating that there is no significant difference in the trend of Gross NPAs between Public and Private Sector Banks in India is rejected.

**Table 3. Analysis of Net NPAs Ratio of Public Sector Banks and Private Sector Bank**

| Year    | SBI  | PNB   | BOB  | HDFC | ICICI | AXIS |
|---------|------|-------|------|------|-------|------|
| 2015-16 | 3.81 | 8.61  | 5.06 | 0.3  | 2.67  | 0.73 |
| 2016-17 | 3.71 | 7.81  | 4.72 | 0.3  | 4.89  | 2.11 |
| 2017-18 | 5.73 | 11.24 | 5.49 | 0.4  | 4.77  | 3.4  |
| 2018-19 | 3.01 | 6.56  | 3.33 | 0.39 | 2.06  | 2.06 |

|         |       |       |       |       |       |       |
|---------|-------|-------|-------|-------|-------|-------|
| 2019-20 | 2.23  | 5.78  | 3.13  | 0.36  | 1.41  | 1.56  |
| 2020-21 | 1.5   | 5.73  | 3.09  | 0.4   | 1.14  | 1.05  |
| 2021-22 | 1.02  | 4.8   | 1.72  | 0.32  | 0.76  | 0.73  |
| 2022-23 | 0.67  | 2.72  | 0.89  | 0.27  | 0.48  | 0.39  |
| 2023-24 | 0.57  | 0.73  | 0.68  | 0.63  | 0.45  | 0.31  |
| 2024-25 | 0.47  | 0.4   | 0.58  | 0.43  | 0.42  | 0.44  |
| Mean    | 2.272 | 5.438 | 2.869 | 0.38  | 1.905 | 1.278 |
| SD      | 1.75  | 3.43  | 1.84  | 0.10  | 1.70  | 0.99  |
| CV      | 77.37 | 63.15 | 64.36 | 27.00 | 89.60 | 78.10 |



**Fig. 2. Net NPA Ratio of Public Sector Banks and Private Sector Bank**

**Table 4. ANOVA – Net NPA Ratio**

| Source of Variation | SS       | Df | MS       | F        | P-value       | F crit  |
|---------------------|----------|----|----------|----------|---------------|---------|
| Between Groups      | 150.39   | 5  | 30.07801 | 8.123425 | 0.00000903511 | 2.38607 |
| Within Groups       | 199.9418 | 54 | 3.702626 |          |               |         |
| Total               | 350.3319 | 59 |          |          |               |         |

The One-Way ANOVA results indicate that there is a statistically significant difference in Net NPA among the selected banks during the study period ( $F(5,54) = 8.12, p < 0.05$ ). Since the calculated F value is greater than the critical value, the null hypothesis ( $H_{02}$ ) is rejected. Therefore, there exists a significant difference in the trend of Net NPAs among the selected banks.

## 4. Analysis and Interpretation

### 4.1 Analysis of Gross NPA

- PNB has the highest average Gross NPA (11.884%) indicating weaker asset quality.
- HDFC Bank has the lowest average Gross NPA (1.273%), showing strong credit management.
- Public sector banks (SBI, PNB, BOB) show higher NPAs compared to private sector banks (HDFC, ICICI, AXIS).

This indicates that private sector banks maintained better control over non-performing assets during the study period.

#### Trend Interpretation

Gross NPAs increased significantly up to 2017–18 and declined steadily thereafter. This decline indicates improvement in asset quality due to regulatory reforms, stricter provisioning norms, and recovery mechanisms.

### 4.2 Analysis of Net NPA

#### Descriptive Statistics

The Net NPA analysis shows:

- **PNB** again has the highest Net NPA.
- **HDFC** has the lowest Net NPA (0.38%).
- Private sector banks maintain lower Net NPAs than public sector banks.

This shows better provisioning and recovery management in private banks.

#### Trend Interpretation

Net NPAs peaked around 2017–18 and declined consistently thereafter. This suggests effective recovery measures and improved provisioning practices over time.

### 4.3 Overall Interpretation

The findings indicate that:

1. Public sector banks show higher Gross and Net NPAs compared to private sector banks.
2. PNB recorded the highest NPA levels among selected banks.
3. HDFC consistently maintained the lowest NPAs and highest stability.
4. Both Gross and Net NPAs showed a declining trend in recent years.
5. Statistical analysis (ANOVA) confirmed that the differences among banks are significant.

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