

NPAs' Impact on Indian Banks: Public vs. Private Sector Performance

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doi.org/10.64643/IJIRTV12I8-190621-459

Abstract—Banks in the banking sector face various risks, including market risk, interest rate risk, liquidity risk, and borrower's risk—the most critical being the chance that borrowers won't repay their loans and advances.

Non-performing assets (NPAs) directly hurt banks' earning capacity and profitability by increasing provisioning costs and reducing interest income. High NPAs signal widespread credit defaults, eroding banks' net worth and overall performance.

India's banking sector achieved its lowest gross NPA ratio in 20 years at 2.31% by March 2025, down from a peak of 11.46% in 2018. Public sector banks (PSBs) held a higher gross NPA ratio of 2.58% compared to private banks' lower levels around 1.8-2.1%, though PSBs carry larger absolute NPA volumes exceeding ₹4 lakh crore.

PSBs remain more exposed to NPAs than private banks due to historical lending patterns and larger loan books, but both have improved through better recoveries and risk controls. Private banks saw rising NPA provisions in late 2024 quarters, yet overall sector credit costs fell to 0.41% in FY25, aiding profitability.

Effective NPA monitoring involves tighter credit assessments, higher provision coverage ratios (75-80% for PSBs), and strategies like recoveries to sustain a healthy sector. Reducing NPAs and operating costs remains key to boosting bank profitability across both public and private segments.

Keywords—

- Non-Performing Assets (NPAs)
- Public Sector Banks (PSBs)
- Private Sector Banks
- Gross NPA Ratio
- Net NPA
- Bank Profitability
- Credit Risk Management
- Provision Coverage Ratio
- Borrower's Risk

I. INTRODUCTION

The banking sector forms the backbone of a nation's financial system, handling key tasks like maturity transformation, liquidity provision, and risk

management. A strong banking system clearly mirrors the health of the overall economy and drives national development.

Banks channel funds to vital sectors such as agriculture, industry, housing, and personal needs, fueling growth across the board. Post-1991 liberalization, they shifted from expansion-focused goals—like branching out to rural areas and priority lending—to prioritizing asset quality and cautious credit extension amid rising NPAs.

India's banking originated in the late 18th century, with public and private sector banks at its core; nationalization in 1969 (14 banks) and 1980 (6 more) boosted branch networks, deposits, and loans, propelling India into the world's top ten economies. Today, beyond traditional deposit-taking and lending, banks offer innovative services like merchant banking, mutual funds, leasing, and modern facilities such as drafts, safe custody, and travelers' cheques.

Non-performing assets (NPAs), or bad loans, arise when borrowers fail to pay principal or interest for over 90 days past a quarter's end, as defined by the RBI. Skyrocketing NPAs signal credit failures that erode bank profitability, net worth, and asset value, posing risks not just to banks but the entire economy. Reforms since 1991 aimed to make banking more competitive and efficient, yet effective loan monitoring remains crucial to curb this persistent issue.

TYPES OF NON-PERFORMING ASSETS

Banks classify non-performing assets (NPAs) into gross and net categories, along with standard, sub-standard, doubtful, and loss types based on RBI guidelines.

Gross and Net NPAs

Gross NPAs represent the total value of all loans overdue as non-performing on the balance sheet date,

including sub-standard, doubtful, and loss assets, reflecting the overall quality of a bank's lending. The ratio is calculated as Gross NPAs divided by Gross Advances. Net NPAs subtract provisions made against these bad loans from gross NPAs, then divide by gross advances minus provisions, giving a clearer picture of the bank's actual exposure after safeguards.

Asset Classification

Standard assets are performing loans where borrowers pay principal and interest on time, carrying normal risk with no special provisions needed. Sub-standard assets become NPAs after remaining overdue for up to 12 months. Doubtful assets stay non-performing beyond 12 months (post-March 2005 rules), while loss assets are deemed irrecoverable by the bank.

1.3 POSSIBLE REASONS FOR NPAs

Banks face non-performing assets (NPAs) due to a range of factors, from internal mismanagement to external economic shocks, turning promising loans into bad debts.

Internal and Fraud-Related Causes

Diversification into unrelated businesses or outright fraud often leads to loan defaults as funds stray from intended uses. Lapses in due diligence during loan approvals expose banks to risky borrowers. Poor corporate governance, like mal-administration by willful defaulters, further erodes repayment capacity.

Economic and Market Pressures

Global crises, such as the 2008 financial meltdown, erode company profits and balance sheets, halting interest and principal payments. National slowdowns, like India's post-2011 economic dip, or sector-specific slumps in areas like telecom or infrastructure, amplify NPA growth. Unplanned expansions during boom times, followed by higher interest rates, strain over-leveraged firms.

Policy and Operational Hurdles

Government loan write-offs sap borrower morale, while policy paralysis delays projects, as seen in infrastructure. Intense competition in segments like telecom squeezes margins, and delays in land acquisition from social or environmental issues stall developments. Bad lending practices, including non-transparent approvals, compound these risks.

1.4 IMPACT OF NPAs

Non-performing assets (NPAs) create ripple effects across banks, businesses, and the broader economy, squeezing profits and stalling growth.

Profit and Funding Squeeze

Lenders see profit margins shrink as bad loans force higher provisions and lost interest income. This stress limits funds for new projects, hurting national economic expansion. Banks often hike interest rates to protect margins, making borrowing costlier for everyone.

Broader Economic Fallout

Funds get diverted from viable projects to rescue failing ones, while stuck investments fuel unemployment. In public sector banks, weak health cuts government dividends, straining budgets for social welfare and infrastructure with added political costs.

Systemic Strain

Investors suffer delayed or lost returns, and India's unique "balance sheet syndrome" leaves both banks and corporates with bloated bad debts, halting investment-driven growth. NPA disputes pile up in courts, overwhelming the judiciary.

1.5 STEPS TAKEN TO CHALLENGE NPAs

India has implemented numerous legal, financial, and policy reforms since the 1990s to tackle the persistent NPA challenge, starting with recommendations from the 1991 Narasimham Committee.

Early Recovery Mechanisms

Debt Recovery Tribunals (DRTs), established in 1993 under the Recovery of Debts Due to Banks Act, speed up case resolutions but face delays with insufficient numbers and backlogs exceeding 2-3 years. Lok Adalats from 2001 help recover small loans up to ₹5 lakh, keeping minor cases out of courts, while Compromise Settlements that year simplify recovery for advances below ₹10 crore, excluding fraud or willful defaults.

Key Legislative and Structural Reforms

The SARFAESI Act of 2002 empowers banks to seize and sell secured assets worth over ₹1 lakh without court intervention after issuing notice, allowing control over management or appointment of managers. Asset Reconstruction Companies (ARCs), boosted by recent RBI licenses post-SARFAESI

amendments, unlock value from stressed loans, bypassing slow court processes.

Restructuring and Resolution Frameworks

Corporate Debt Restructuring (2005) eases company burdens by lowering rates and extending repayment timelines. The 5/25 rule (2014) offers flexible long-term refinancing for infrastructure projects to match extended cash flows. Joint Lenders Forum (2014) coordinates public sector banks to prevent multiple lending to the same risky borrower.

Recent Strategies

Asset Quality Review (2015) mandates early classification and provisioning for stressed assets to safeguard banks. Sustainable Structuring of Stressed Assets (S4A, 2016) splits debt into sustainable portions and equity-like instruments for turnaround potential. Debates in 2017 pitted public ARCs (like the proposed PARA from the Economic Survey) against private ones, alongside "bad bank" ideas to offload PSB toxic assets and free up lending capacity.

II. LITERATURE REVIEW

Literature reviews on non-performing assets (NPAs) in Indian banks highlight their drag on profitability, liquidity, and overall economic health, often through comparative analyses of public and private sector banks.

Kharche and Gupta (2023)

Their study compares NPAs at Bank of Maharashtra (public) and ICICI Bank (private), showing both face major challenges from bad debts that erode liquidity and profitability. ICICI reported higher NPAs, linked to increased provisioning for loans, with fluctuations impacting bank performance over time.

Kaur (2023)

Focusing on public sector dominance amid globalization, her regression and ANOVA analysis reveals NPAs exert a negative, though sometimes non-significant, impact on return on net worth across selected banks with substandard, doubtful, and loss assets.

Mona (2020)

This research evaluates five-year secondary data on NPA ratios for public and private banks, explaining concepts like gross and net NPAs while comparing their trends to underscore asset quality differences.

Bhandari (2019)

Her comparative analysis concludes rising gross and net NPAs in commercial banks stifle lending, worsen amid market slowdowns, and harm economic growth by making banks cautious.

Arora and Goyal (2017)

They compare Axis Bank (private) and Punjab National Bank (public), revealing distinct NPA positions that affect operational efficiency in each sector.

III. STATEMENT OF PROBLEM

Banks rely mainly on interest from loans as their primary income source, making profitability the key measure of performance. Rising non-performing assets (NPAs) now pose the biggest threat, as unrecovered principal and interest turn good loans bad, directly slashing profits.

When banks fail to collect dues, NPAs erode earnings and tie up capital that could fund new lending. This creates a vicious cycle, weakening overall operations and competitiveness.

This study analyzes NPAs in public and private sector banks to uncover trends, causes, and impacts, highlighting why effective management is crucial for sustained profitability.

IV. RESEARCH OBJECTIVES

- To compare non-performing assets in public sector bank and private sector bank.
- To analyse and compare gross non-performing assets in public sector bank and private sector bank.
- To analyse and compare net non-performing assets in public sector bank and private sector bank.
- To analyse relationship between profit and non-performing assets in public sector bank and private sector bank.

V. RESEARCH METHODOLOGY

- Research Design

Descriptive research design.

- Sources of data

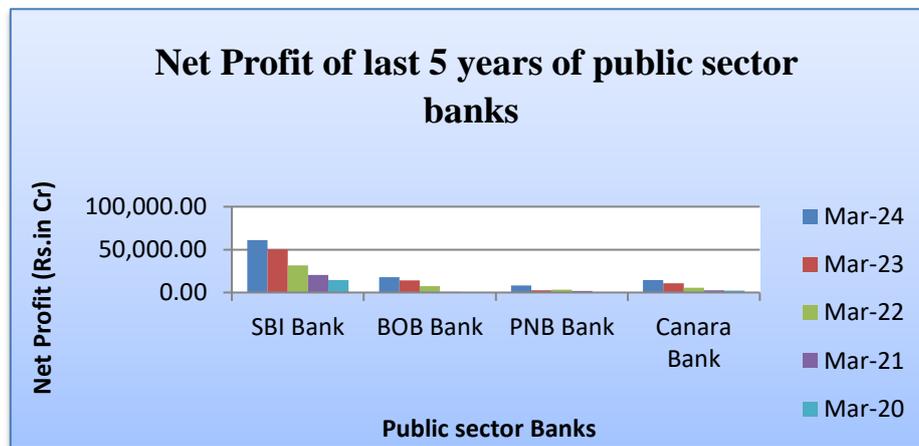
In this study I used secondary sources of data to analyse and compare non-performing assets in public sector bank and private sector bank.

- Population of study
In this study population includes the all public sector and private sector banks in India.
 - Sample unit & size
- In this study I used total 5 years (March 2020 to March 2024) financial data of public sector bank and private sector bank.

VI. DATA ANALYSIS AND INTERPRETATION

➤ Data of Net Profit of Public Sector Banks

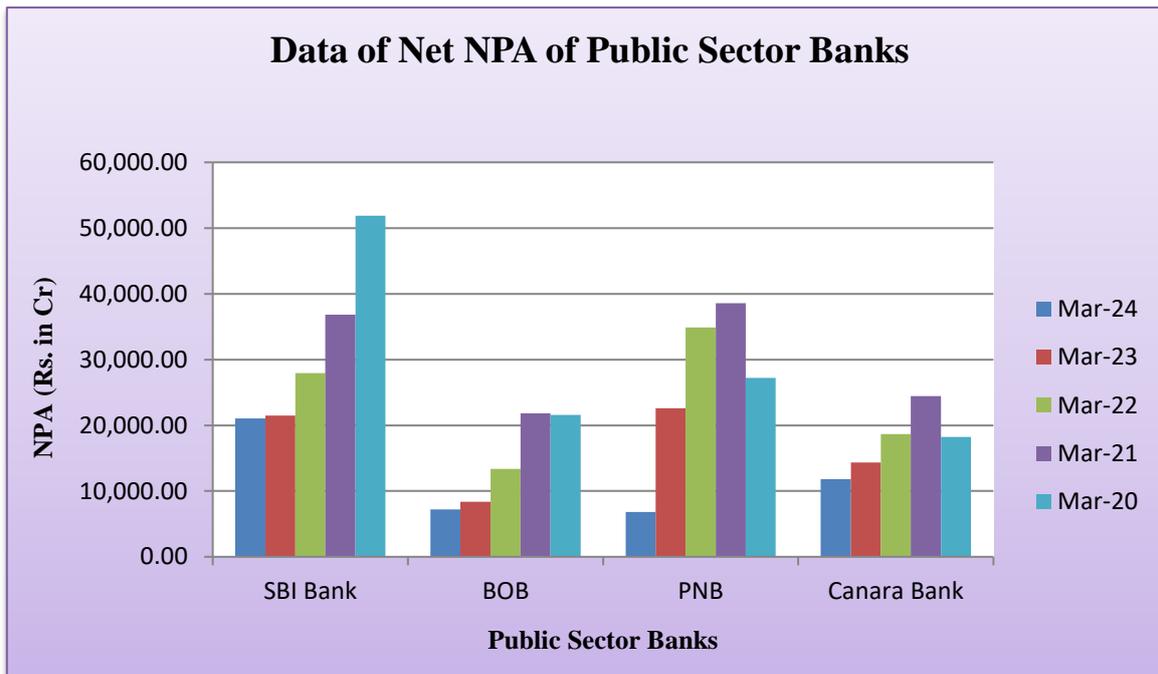
Bank Name	Mar-2024 Rs. (Cr.)	Mar-2023 Rs. (Cr.)	Mar-2022 Rs. (Cr.)	Mar-2021 Rs. (Cr.)	Mar-2020 Rs. (Cr.)
SBI	61,076.62	50,232.45	31,675.98	20,410.47	14,488.11
BOB	17,788.78	14,109.62	7,272.28	828.96	546.19
PNB	8,244.62	2,507.20	3,456.96	2,021.62	336.19
Canara Bank	14,554.32	10,603.76	5,678.41	2,557.58	2,235.72



- The Public Sector Bank’s Net Profit has shown steady increase over the last 5 years. Reflecting strong financial management. The bank’s ability to adapt to changing market conditions has led to a notable rise in net profit over the past 5 years.

➤ Data of Net NPA of Public Sector Banks

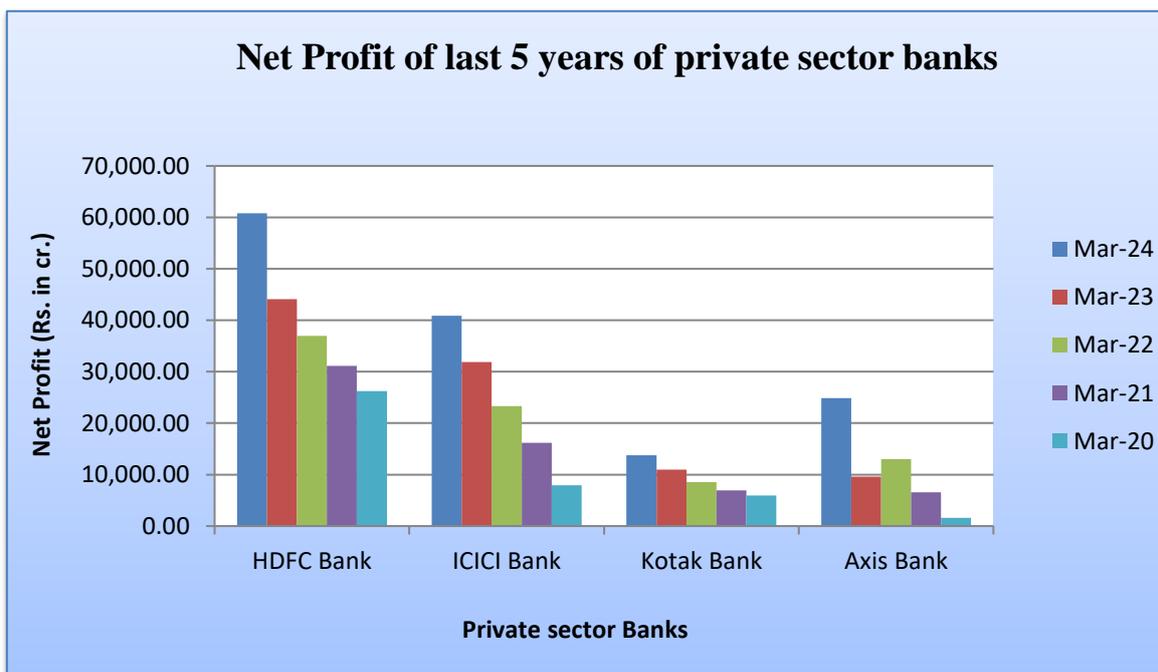
Bank Name	Mar-2024	Mar-2023	Mar-2022	Mar-2021	Mar-2020
SBI	21,051.08	21,466.64	27,965.71	36,809.72	51,871.30
BOB	7,213.34	8,384.32	13,364.65	21,799.88	21,576.59
PNB	6,798.77	22,585.04	34,908.73	38,575.70	27,218.89
Canara Bank	11,822.83	14,349.33	18,668.02	24,442.07	18,250.95



- The Public sector Banks has made significant strides in reducing its Non-Performing Assets Over the last 5 years, showcasing improved asset quality. As compare to year 2020 NPA levels have consistently decreased in the year 2024 of Major Public sector banks.

➤ Data of Net Profit of Private Sector Banks

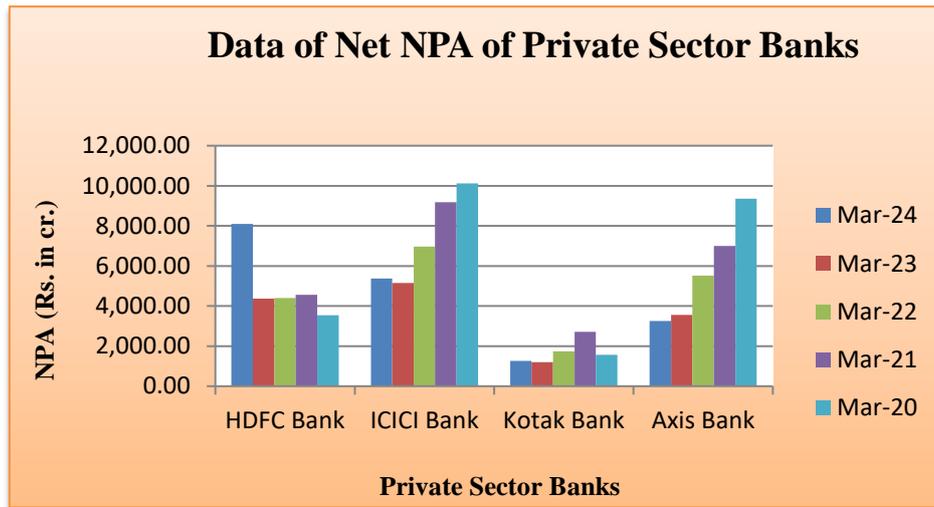
Bank Name	Mar-2024 Rs. (Cr.)	Mar-2023 Rs. (Cr.)	Mar-2022 Rs. (Cr.)	Mar-2021 Rs. (Cr.)	Mar-2020 Rs. (Cr.)
HDFC Bank	60,812.28	44,108.70	36,961.36	31,116.53	26,257.32
ICICI Bank	40,888.27	31,896.50	23,339.49	16,192.68	7,930.81
Kotak Bank	13,781.58	10,939.30	8,572.69	6,964.84	5,947.18
Axis Bank	24,861.43	9,579.68	13,025.48	6,588.50	1,627.22



- From March 2020 to March 2024 Private Sector Bank's shown the sound increasing in their Net Profit. With a consistent upward trend, the Private Sector bank's Net Profit has grown significantly, indicating a robust business model.

➤ Data of Net NPA of Private Sector Banks

Bank Name	Mar-2024	Mar-2023	Mar-2022	Mar-2021	Mar-2020
HDFC Bank	8,091.74	4,368.43	4,407.68	4,554.82	3,542.36
ICICI Bank	5,377.79	5,155.07	6,960.89	9,180.20	10,113.86
Kotak Bank	1,270.57	1,193.30	1,736.71	2,705.17	1,557.89
Axis Bank	3,247.47	3,558.92	5,512.16	6,993.52	9,360.41



- While some private sector banks, such as Axis bank, Kotak bank and ICICI bank, have successfully reduced their Non-Performing Assets over the last 5 years, other Private sector Bank like HDFC bank have seen a significant increase in their NPA level from the year 2020 to the year 2024.

VII. HYPOTHESIS TESTING

- ❖ Research Objective: To analyze relationship between Profit and Non-Performing Assets (NPA) in public sector banks and private sector banks.

Data available:

Years	Profit		NPA	
	Public Sector Banks (in billion ₹)	Private Sector Banks (in billion ₹)	Public sector Banks (in billion ₹)	Private sector Banks (in billion ₹)
2020	176	417	1189	245
2021	258	608	1216	234
2022	481	818	959	186
2023	774	965	667	142
2024	1016	1403	469	179

To know the whether there is similar impact of NPA on Profit or not between the public sector banks and private sector banks with 5% significant level.

Here, appropriate test is chi-square test is applied as to know the association between the public and private sector banks.

- ❖ Hypothesis: Null hypothesis (H0):

The impact of NPAs on profit is the same for public and private sector banks.

(There is no significant difference)

Alternative Hypothesis (H1):

The impact of NPAs on profit differs between public and private sector banks.

(There is significant difference)

Sector	Profit (₹ billion)	NPA (₹ billion)	Row Total
Public Banks	176+258+481+774+1016 = 2705	1189+1216+959+667+469 = 4500	7205
Private Banks	417+608+818+965+1403 = 4211	245+234+186+142+179 = 986	5197
Column Total	6916	5486	N=12402

❖ Calculate Expected Frequencies (Fe):

Expected frequency = (Row Total) × (Column Total) / Grand Total

Fe Table:

Sector	Profit (Fe)	NPA (Fe)
Public Banks	$(7205 \times 6916) / 12402 = 4016.92$	$(7205 \times 5486) / 12402 = 3188.08$
Private Banks	$(5197 \times 6916) / 12402 = 2899.08$	$(5197 \times 5486) / 12402 = 2297.92$

Test Statistic:

Fo	Fe	Fo-Fe	$(Fo-Fe)^2 / Fe$
2705	4016.92	-1311.92	428.32
4500	3188.08	1311.92	539.69
4211	2899.08	1311.92	593.34
986	2297.92	-1311.92	748.76
		0	$\chi^2=2310.11$

Table value (critical value) at 5% significance level with degree of freedom $(r-1)(c-1) = (2-1)(2-1) = 1$ d.f. is 3.841.

❖ Decision:

Here, $X^2_{cal} = 2310.11$ and $X^2_{tab} = 3.841$.

Therefore, X^2_{cal} value $>$ X^2_{tab} value.

Reject the Null Hypothesis (H0). Accept the Alternative Hypothesis (H1) i.e. there is significant difference.

❖ Conclusion:

According to hypothesis testing, there is a significant difference in the impact of NPAs on profit between public and private sector banks.

As Public sector banks NPA decreased in last 5 years apx. 60% and increased profit apx. 477%, while Private sector bank NPA decreased in last 5 years apx. 27% and increased profit apx. 236%

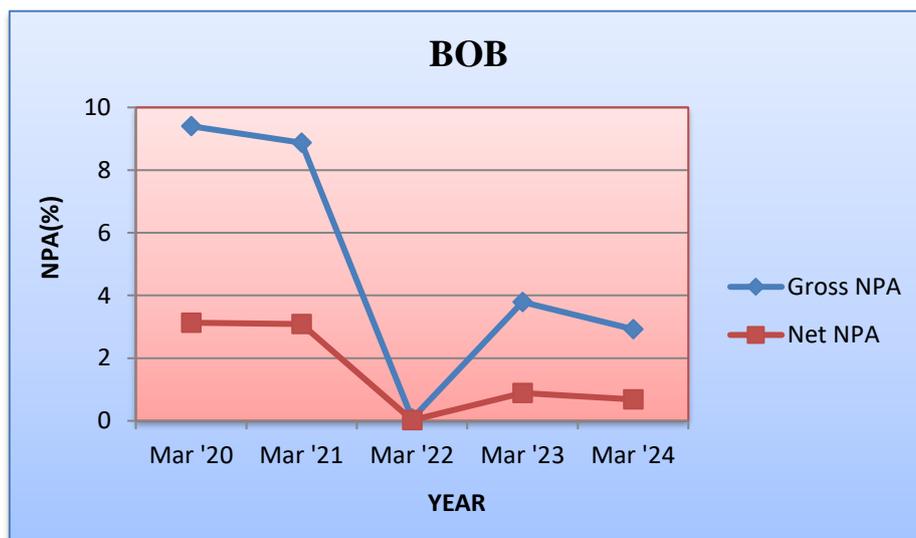
So it can be seen that the impact of NPAs on profit differs between public and private sector banks differently and not having any kind of association between them.

➤ Comparison of Gross NPA Ratio and Net NPA ratio of Public sector Banks

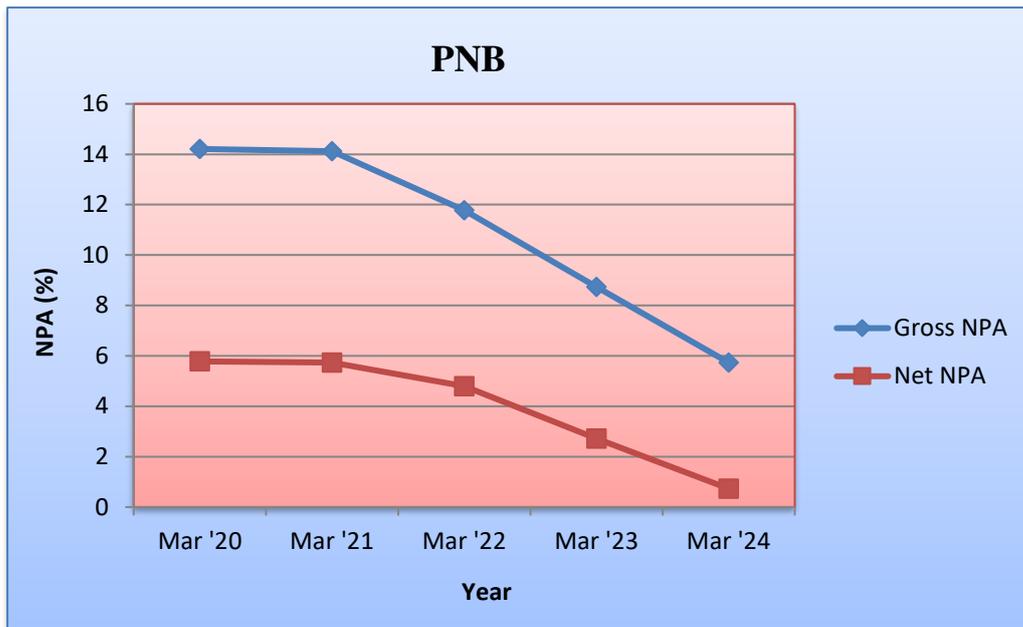
SBI		
YEAR	Gross NPA	Net NPA
MAR '24	2.24	0.57
MAR '23	2.78	0.67
MAR '22	3.97	1.02
MAR '21	4.98	1.50
MAR '20	6.15	2.23



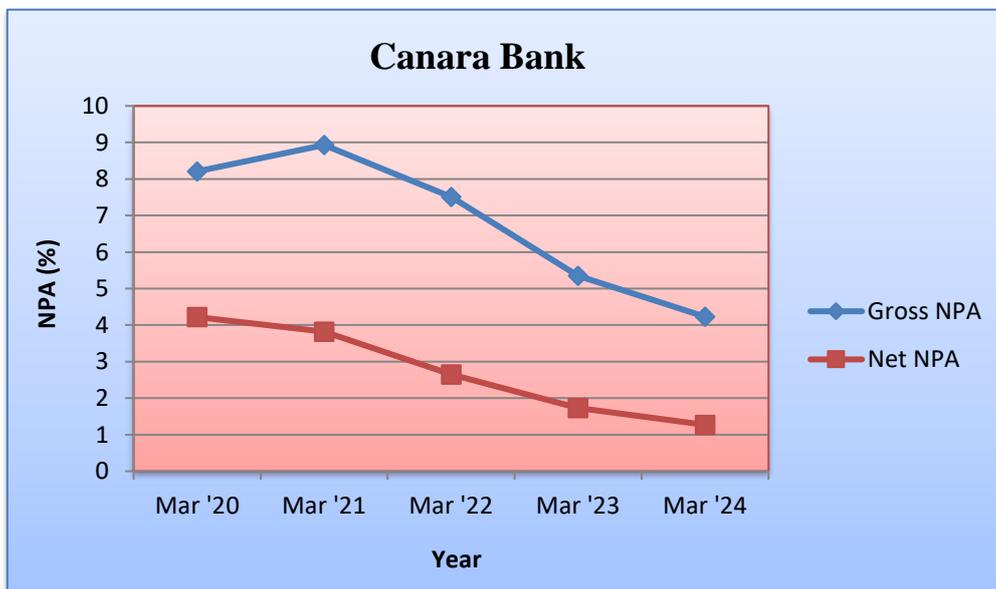
BOB		
YEAR	Gross NPA	Net NPA
MAR '24	2.92	0.68
MAR '23	3.79	0.89
MAR '22	0.07	0.02
MAR '21	8.87	3.09
MAR '20	9.40	3.13



PNB		
YEAR	Gross NPA	Net NPA
MAR '24	5.73	0.73
MAR '23	8.74	2.72
MAR '22	11.78	4.80
MAR '21	14.12	5.73
MAR '20	14.21	5.78



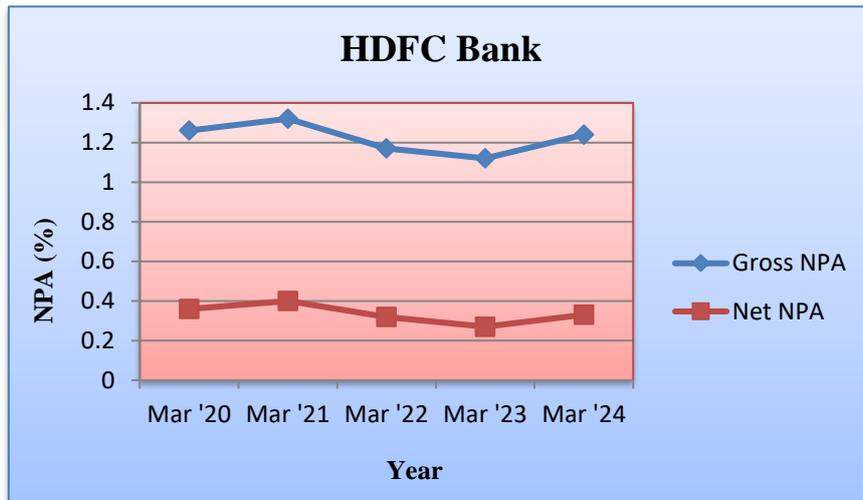
Canara Bank		
YEAR	Gross NPA	Net NPA
MAR '24	4.23	1.27
MAR '23	5.35	1.73
MAR '22	7.51	2.65
MAR '21	8.93	3.82
MAR '20	8.21	4.22



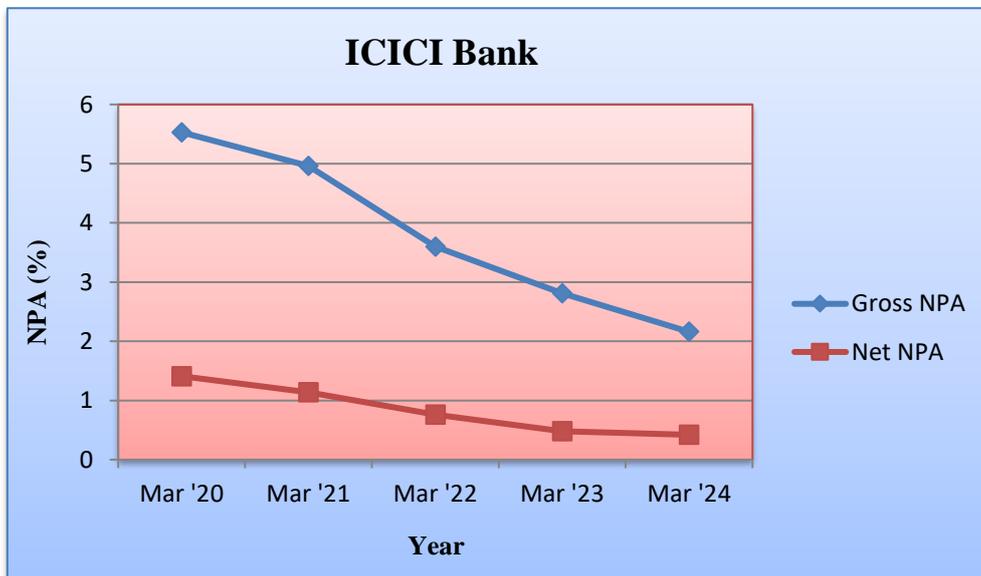
➤ Comparison of Gross NPA Ratio and Net NPA ratio of Private sector Banks

HDFC Bank		
YEAR	Gross NPA	Net NPA
MAR '24	1.24	0.33
MAR '23	1.12	0.27
MAR '22	1.17	0.32
MAR '21	1.32	0.40

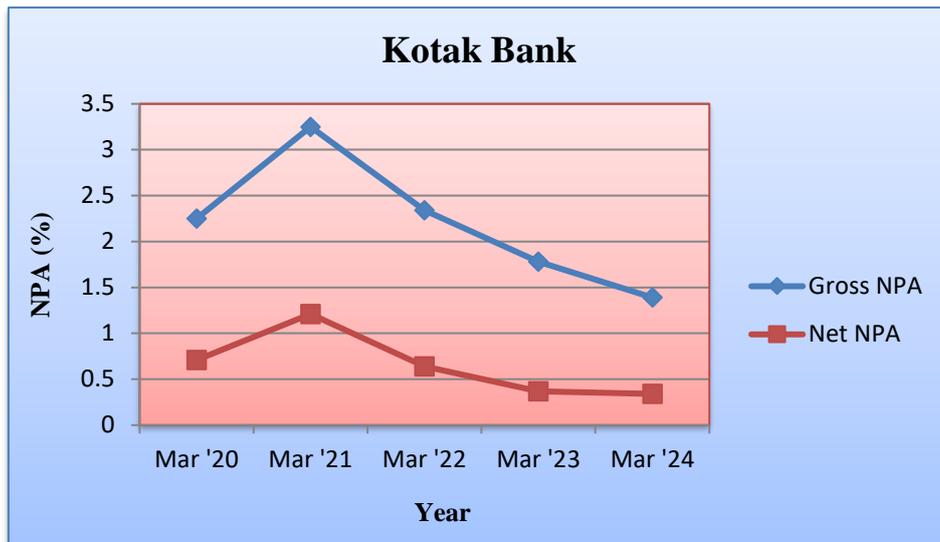
MAR '20	1.26	0.36
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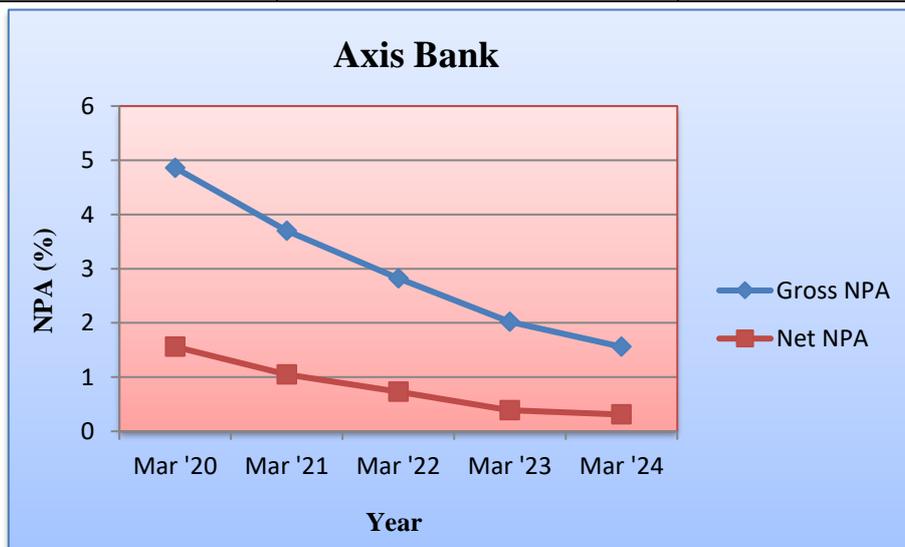
ICICI Bank		
YEAR	Gross NPA	Net NPA
MAR '24	2.16	0.42
MAR '23	2.81	0.48
MAR '22	3.60	0.76
MAR '21	4.96	1.14
MAR '20	5.53	1.41



Kotak Bank		
YEAR	Gross NPA	Net NPA
MAR '24	1.39	0.34
MAR '23	1.78	0.37
MAR '22	2.34	0.64
MAR '21	3.25	1.21
MAR '20	2.25	0.71



Axis Bank		
YEAR	Gross NPA	Net NPA
MAR '24	1.43	0.31
MAR '23	2.02	0.39
MAR '22	2.82	0.73
MAR '21	3.70	1.05
MAR '20	4.86	1.56



VIII. FINDINGS

- As Public sector banks NPA decreased in last 5 years apx. 60% and increased profit apx. 477%, while Private sector bank NPA decreased in last 5 years apx. 27% and increased profit apx. 236%.
- The impact of NPAs on profit differs between public and private sector banks differently.
- SBI, even with having the uppermost net profit, shows a comparatively lower 5-year growth rate compared to the other three banks. BOB and

PNB exhibit exceptionally high 5-year growth rates, likely due to their lower base in 2020. Canara Bank demonstrates consistent growth, with a significant increase in net profit over the 5-year period.

- Axis Bank exhibits the highest growth rate. ICICI Bank shows a remarkable 5-year growth rate and indicating strong recovery and performance. HDFC Bank and Kotak Bank demonstrate consistent growth, with HDFC Bank maintaining its position as one of the largest private sector banks.

- All four Public sector banks show a decrease in their Non-Performing Assets over the 5-year period, indicating potential improvement in asset quality.
 - State Bank of India's Net NPA has 59.42% decrease, Bank of Baroda has shown 66.57% decrease in its Net NPA level, Punjab National Bank has shown 75.02% decrease in its Net NPA level and Canara Bank has shown 35.22% decrease in its Net NPA level from the year 2020 to the year 2024.
 - Private Sector Bank's NPA trend is differ in all major four banks. HDFC bank has shown 128.44% increase in its Net NPA From the year 2020 to the year 2024. ICICI Bank has shown decreasing trend by 46.83% in last 5 years. Kotak Bank and Axis bank has also shown decreasing trend in their Net NPA by 18.44% and 65.31% respectively.
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IX. CONCLUSION

Non-performing assets (NPAs) remain one of the toughest challenges facing Indian banks today, threatening their profitability and operations if not managed rigorously.

Sector Comparison

Public sector banks hold higher substandard assets than private ones, but private banks outperform in efficiency across other metrics, giving them a competitive edge. Over the past five years, net NPAs in major public banks have declined more steadily than in private banks, where net profits grew despite stubbornly high NPA levels.

Path Forward

Government initiatives like the S4A scheme and Indradhanush have helped, yet NPAs persist at concerning levels—zero is unrealistic, but serious, sustained efforts are essential. Without stronger action, NPAs will continue eroding bank profits, stifling India's economic growth.

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