

## **A Study of the Effect of NPA on the Profitability of the Indian Banking Sector**

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### **Abstract**

This research paper examines the effect of NPAs on the performance of the Indian banking sector. Non-performing assets refer to loans and advances that have stopped generating interest income or principal repayments for banks. With the rising prominence of NPAs in recent years, understanding their implications for the entire banking sector in India is important.

The study employs a comprehensive research methodology that combines quantitative analysis and qualitative assessment. Firstly, it analyzes the historical trends of NPAs in the banking sector in the Indian economy, investigating the factors contributing to their growth. Secondly, it evaluates the financial performance of banks in relation to the presence of NPAs, examining key indicators such as profitability, liquidity, and capital adequacy.

Furthermore, the research investigates the macroeconomic consequences of NPAs on the Indian economy, including the potential spill over effects on credit availability, investment, and overall economic growth. The study also explores the regulations and legislative framework and the measures implemented by the Central Bank of India (RBI) to mitigate the impact of NPAs.

The findings reveal that NPAs have exerted a significant negative influence on the Indian banking sector. High levels of NPAs have weakened banks' financial positions, reduced profitability, and constrained lending capacity. Moreover, the study highlights the need for effective strategies to tackle NPAs, such as improved risk management practices, stricter loan underwriting standards, and expedited resolution mechanisms.

Overall, this research provides valuable insights into the consequences of NPAs on the Indian banking sector, informing policymakers, regulators, and banking institutions on the importance of proactive measures to address this pressing issue.

### **Keywords**

Non-performing assets, Banking sector reforms, Assets quality, Loan defaults, and Indian banking sector.

### **1. Introduction**

Every economy rests on the shoulders of its banking industry. The financial system can only be considered healthy as a whole if it runs smoothly. By accepting deposits and making loans, banks generate credit. Borrowers' payments of interest and principal on loans are reinvested to create new capital. However, this flow of credit is impeded by the accumulation of non-performing assets (NPAs). The banking sector in India has been struggling with the problem of NPAs for a long time. NPAs are loans that have turned bad, i.e., the borrower has failed to repay the loan, or the loan has become irrecoverable. NPAs are a significant problem for banks as they can result in losses, erode profitability, and reduce the capacity of banks to lend further. The implications of NPAs are particularly severe in India, where the banking sector is the lifeline of the economy.

The problem of NPAs in India came to the forefront in the mid-2000s when a large number of NPAs were reported by public sector banks. The problem worsened after the global financial crisis of 2008, which led to a slowdown in the economy of India with an increase in the number of defaults. The problem was compounded by the lack of a robust legal and regulatory framework for debt recovery, which made it difficult for banks to recover their loans.

Banks' primary and major source of income is interest on loans and advances, as well as principal payments. If such assets do not generate revenue, these assets are classified as non-performing assets (NPA). According to the RBI norms, a non-performing asset (NPA) is a credit facility for which the interest and/or principal payment is "past due" for a certain period of time. If loan repayments have not been done for a period of 90 days, the asset is generally considered non-performing.

Various types of non-performing assets depending on how long they remain in the non-performing asset category

- a) Standard Assets
- b) Sub-standard Assets
- c) Doubtful Assets
- d) Loss Assets

The problem of NPAs in India has been persistent and has been a significant cause of concern for the banking industry and policymakers. The root causes of NPAs in India are complex and multifaceted. Some of the factors aggravating the problem of NPAs in India include:

- 1.1 Economic Slowdowns and Cyclical Factors:** Economic slowdowns and cyclical factors such as recession, inflation, and fluctuations in exchange rates are some of the causes for the rise in NPAs. This can result in reduced cash flows of businesses and a decline in the value of assets, making it difficult for borrowers to repay their loans.
- 1.2 Ineffective Credit Appraisal Processes and Lack of Due Diligence by Banks:** Banks may lend to borrowers without carrying out proper due diligence and credit appraisal, resulting in high default rates.
- 1.3 Political Interference in Banking Decisions:** Political interference in this sector can lead to decisions being made for political reasons rather than based on sound banking principles.
- 1.4 Lax Recovery Mechanisms and a Weak Legal Framework for Debt Recovery:** In India, the legal framework for debt recovery is weak, making it difficult for banks to recover their dues. This encourages borrowers to default on their loans.

Many writers have discovered NPA causes in previous papers: Failure of the market, poor follow-up, wilful defaults, poor supervision, and bank non-cooperation, lack of entrepreneurial skills, incompetent legal framework, and fund diversion. (Santanu Das, 2010) Zahoor Ahmad, Dr. M. Jegadeeshwaran (2013) suggested improper borrower selection, weak credit appraisal system, industrial problems, inefficiency in borrower management, lethargy in credit monitoring and management, poor bank follow-up, market recession, and natural disasters as NPA causes. On the other hand (Ashly Lynn Joseph, 2014) identified several external and internal that contribute to NPA formation, including fund diversion for expansion, diversification, modernization, or new projects, bank management inefficiency, weak credit monitoring and management, and inappropriate technology. External influences include economic recession, input or power shortages, input price increases, exchange rate volatility, and government policy changes.

All in all, the problem of NPAs in India is a significant challenge for this sector and the economy as a whole. The implications of NPAs are severe, leading to a decline in profitability, lending capacity, and credit growth. Addressing the problem of NPAs requires a multi-pronged approach involving regulatory, legal, and institutional reforms, as well as a focus on improving the credit culture and credit appraisal processes in the banking sector.

## **2. Objectives of the Study**

- 2.1 To investigate the influence of non-performing assets on the BANKNIFTY Index.
- 2.2 To understand the relationship between non-performing loans and crucial bank parameters.
- 2.3 To find out the impact of NPA on the Return on Assets (ROA), Return on Capital Employed (ROCE), and Return on Equity (ROE) of the selected banks.
- 2.4 To give relevant recommendations to reduce NPAs in the future and manage current NPAs in banks.

## **3. Review of the Literature**

Several studies have been performed to understand the factors contributing to the rise of NPAs, some of which include:

**Malyadri and S. Sirisha (2011)** noted that the banking industry in India has made significant progress in improving the role of market forces in prudential regulations, such as accounting, income recognition, provisioning, exposure, and implementing the CAMELS supervisory rating system. These efforts have also led to a reduction in NPAs and the adoption of new technology.

**Karunakar et al. (2008)** analyze the factors leading to NPA growth, evaluate the magnitude of the problem, analyze its impact on Indian banking operations, and provide solutions to alleviate it. The key to addressing the problem of NPA accumulation is the use of appropriate credit evaluation and risk management techniques.

A study by **Kumar (2013)** concluded that NPAs have been an annoyance and problem for the banking system in India over the last many years. In the late 1990s, commercial banks struggled with massive non-performing assets (NPAs).

**Satpal (2014)** suggested that public-sector banks had greater levels of NPAs than private-sector banks. NPAs are a concern not just for banks, but also for the economy. He also emphasized that Indian banks' NPAs have an impact on their profitability.

In his research article, **Bhatia (2007)** argues that non-performing assets are an essential metric for evaluating the performance and financial health of banks. The amount of non-performing assets is a significant factor that influences the financial stability and expansion of the banking system.

**Chandrashekhar and Ray (2005)** demonstrated that during the 1990s, banks in the public sector in India increasingly chose to invest in risk-free government securities. As a result, their proportion of total earning assets rose from 26 percent

to 33 percent. However, this trend has been reversed in the 21<sup>st</sup> century. Despite this, the enforcement of stringent prudential norms, capital adequacy requirements, and the establishment of the Board for Financial Supervision (BFS) have made banks more risk-averse.

**Balasubramaniam C.S. (2001)** emphasized that the present level of non-performing assets (NPA) is high across all banks in India and all the banks are required to reduce their NPA. This may be accomplished by sound credit evaluation methods, effective internal control systems, and efforts to enhance the quality of their balance sheets' assets.

**Paul et al. (2011)** determined the relative efficiency of the banks in public-sector in India based on their financial performance as a whole. Given the rapid restructuring of the financial services sector in India, they stated that it is essential for banks to regularly assess their Non-performing Assets, Capital Risk-weighted Asset Ratio, Business per Employee, Return on Assets, and Profit per Employee. Non-performing assets are employed as a negative financial indicator in the framework they designed for efficiency benchmarking. This research examines the handling of non-performing assets (NPA) by the public sector, private sector, and foreign banks in the banking system of India.

**Panta (2007)** emphasized that, since 1992, with the start of reforms in the banking sector, the majority of banks are attempted to maintain the level of non-performing assets (NPA) and enhance their profitability position. In addition, banks take into account the RBI's guidelines regarding income recognition, asset classification, and its norms regarding various provisions. He indicated about a global correlation between NPA and bank failure.

According to **Dr. Mittal (2017)**, non-performing assets have always been a major concern for India's banking sector, as they have a direct effect on the bank's profitability. If the banking sector fails, it can have a ripple effect on other industries as well. Therefore, it is crucial for banks to take appropriate measures to resolve the issue of NPA, ensure fair and efficient loan recovery, and maintain the functionality of the banks without stress. Bank managers must also consider the return on investment of the proposal and provide loans to only those customers with better creditworthiness as prevention is always better than cure.

**Infanta (2021)** came to the conclusion that it is impossible to completely eliminate non-performing assets (NPA) from banks. However, efforts should be made to reduce the level of NPA. Banks should undertake precautionary measures to prevent future NPAs.

While many studies have analyzed the efficiency of banks worldwide, only a limited number of studies have focused on evaluating the performance of Indian

banks. This literature review has been used to develop a theoretical framework for the analysis of non-performing assets or loans in the present study.

Based on the research papers on NPAs in India's banking industry, it can be concluded that non-performing assets have been a persistent problem for the banking system in India. Despite the various reforms implemented, the problem has not been completely resolved. To reduce NPAs, banks need to adopt appropriate credit evaluation and risk management techniques, and there is a need to educate bank personnel about the negative implications of NPAs on profitability. It is also essential for banks to regularly assess their Non-performing Assets, Capital Risk-weighted Asset Ratio, Business per Employee, Return on Assets, and Profit per Employee. To address the problem of NPA accumulation, there is a need to implement bank-specific policies and reforms through the RBI to improve the condition of PSBs.

## **4. Research Methodology**

### **4.1 Research Design:**

The present study is exploratory in nature. This study mainly plans to evaluate the NPA level of the BANKNIFTY Index and provide a parameter, particularly for better understanding the effect of NPA on the entire banking sector. The findings of the study present a comparison between selected variables (Return on Asset (ROA), Return on Equity (ROE) and Return on Capital Employed (ROCE)) for 7 years (2014-2020).

The research design for this study focuses on the Indian banking industry and aims to analyse the Non-performing Assets (NPA) of both private and public sector banks between 2014-2020. The population for this study is the entire Indian banking industry, but the sample comprises only those banks that are part of the BANKNIFTY index. The data sources used for this investigation are secondary data sources.

In summary, the research design for this study involves the choosing of a sample from the Indian banking industry, the collection of secondary data from various sources, and the analysis of the data using different variables. The aim is to understand the performance of private and public sector banks during the specified period and to identify any differences between the two sectors.

### **4.2 Source of Data:**

Our study takes into account the NPAs of the 12 constituent banks of the BANKNIFTY Index. It comprises both public-sector banks and private-sector banks.

The study is based on secondary data sources and the data has been collected from:

- Annual Reports of banks listed in the BANKNIFTY Index.
- RBI press release and RBI occasional papers.
- Various articles, magazines, and dissertations on NPAs which include the Harvard Business Review and the Forbes India magazine.
- CMIE Prowess IQ database.

#### **4.3 Hypothesis of the Study:**

A hypothesis is a testable statement that predicts the relationship between variables. For our study the hypothesis is:

**Null hypothesis (H<sub>0</sub>):** NPAs do not impact the financial performance of banks in the banking sector of India.

**Alternative hypothesis (H<sub>A</sub>):** NPAs negatively impact the financial performance of banks in the banking sector of India.

This hypothesis predicts that as the level of NPAs increases, the financial performance of banks will decrease. The financial performance can be measured by various indicators, i.e., Return on Assets (ROA), Return on Equity (ROE), and Return on Capital Employed (ROCE).

#### **4.4 Statistical Tools Used:**

- Various Multiple regression models have been used to analyse the effect of our independent variable (NPA) and the above-mentioned key financial metrics.
- We have also incorporated control variables in the regression models to account for the potential influence of other factors on the relationship between the primary independent variable and the dependent variable.
- A correlation matrix has been used to establish the relationship between Net NPA and various financial metrics (Return on Equity (ROE), Return on Assets (ROA), and Return on Capital Employed (ROCE) of constituent banks of BANKNIFTY.

### **5. Data Analysis**

We have taken into consideration the BANKNIFTY Index, which represents the banking sector's performance in the NSE. The constituents of the index include 12 leading financial institutions and banks of India.

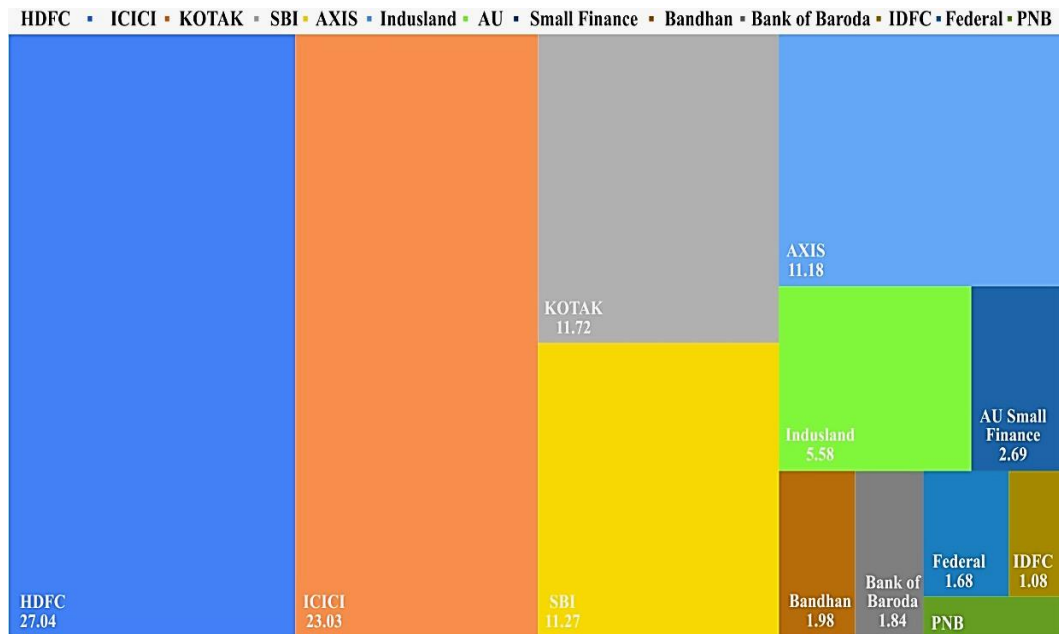
The NIFTY Bank acts as a yardstick to track and assess the performance of banking stocks and the overall health and trends in the banking industry.

Since it is supposed to be representative of the banking sector, using this index will give us a fair idea of how Non-performing Assets affect the profitability of banks for the entire Indian banking sector.

The constituents of this index are stocks of some banks with weights based on their free-float market capitalization. The table below illustrates the breakup of the index bank stocks and their weightage.

**Table 1:- Weightage of each Bank in the BANKNIFTY Index**

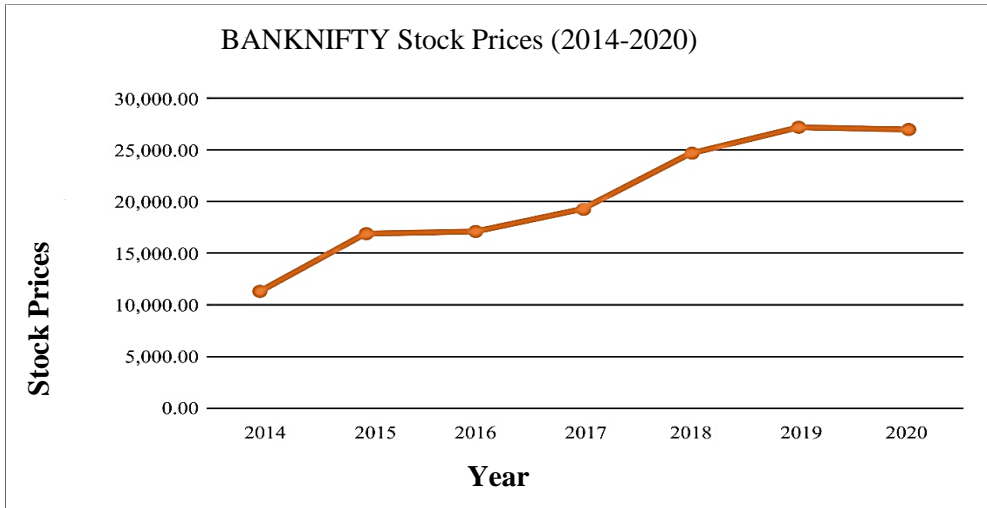
Banks	Weights
HDFC	27.04
ICICI	23.03
KOTAK	11.72
SBI	11.27
AXIS	11.18
Indusland	5.58
AU Small Fin	2.69
Bandhan	1.98
Bank of Baroda	1.84
IDFC	1.08
Federal	1.68
PNB	0.91



Source:- Authors' Compilation

**Figure 1:- Weightage of each Bank in the BANKNIFTY Index**



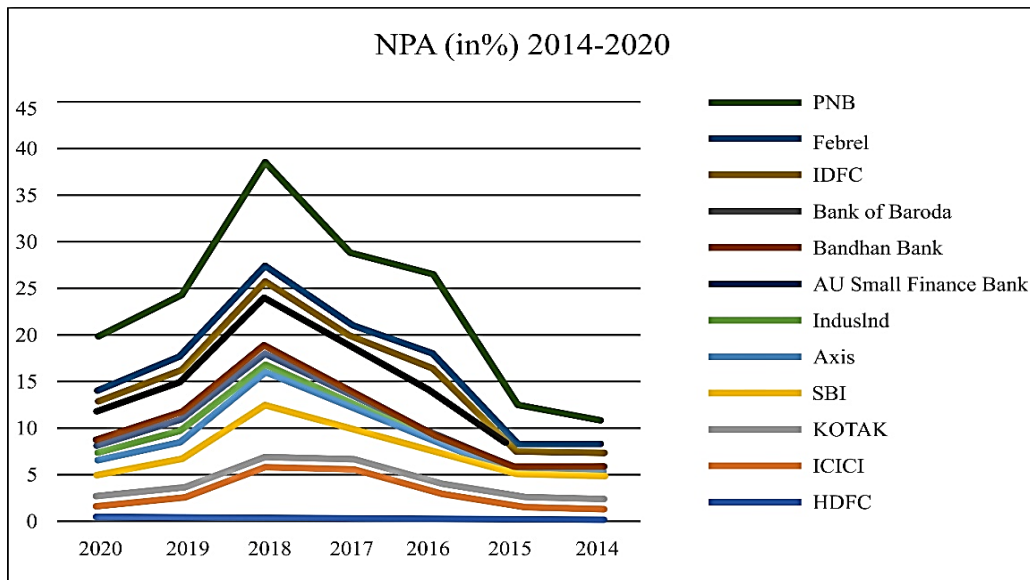


Source:- Authors' Compilation

**Graph 1:- The Graph Shows the Bank Nifty Index Stock Prices for the Years 2014-2020.**

**Note:** Values have been taken using the average adjusted closing prices for the index.

Since the objective of our study is to study the impact of Non-performing Assets on a bank's profitability, let's take a look at the historical data of NPA for all the 12 constituent banks.



Source:- Authors' Compilation

**Graph 2:- Graph of the Historical Data of Net NPA Percentages for 12 Constituent Banks of the BANKNIFTY Index**

## 5.1 Regression Analysis

Several essential assumptions underpin regression analysis:

- 5.1.1 **Linearity:** The predictor and predicted variables have a linear relationship.
- 5.1.2 **Independence:** Each observation is independent of another.
- 5.1.3 **Homoscedasticity:** The residual variance is consistent across all levels of the independent variables.
- 5.1.4 **Normality:** The residuals are distributed normally.
- 5.1.5 **Autocorrelation:** No correlation amongst the residuals of the regression model.

These assumptions ensure the validity of regression results and statistical inference. By meeting these assumptions, we can confidently interpret the estimated coefficients, perform hypothesis testing, and make accurate predictions.

It is important to check our data for these assumptions because it ensures that the least squares estimation procedure used in regression analysis provides BLUE (Best Linear Unbiased Efficient) estimators.

**To identify the impact of non-performing assets on Indian banks in our study, we run various linear regression models wherein:**

- NPA is taken to be the Predictor (independent) variable.
- Investments, Operating expenses, and Taxes are the Control variables. Return on Equity (ROE), Return on Assets (ROA) and Return on Capital Employed (ROCE) are the Response (dependent) variables (*one for each model*)

## 5.2 Regression Models

### 5.2.1 Non-performing Assets and Return on Equity

**Table 2:- Regression Results of Regression Analysis of NPA and Return on Assets**

Regression Statistics	Values
Multiple R	0.9805
R Square	0.9613
Adjusted R Square	0.8839
Standard Error	0.8641
Observations	7

	<b>Coefficients</b>	<b>Standard Error</b>	<b>T Sat</b>	<b>P-Value</b>	<b>Lower 90%</b>	<b>Upper 90%</b>
<b>Intercept</b>	22.3069	33.24276	0.67103	0.57131	-74.7615	119.3753
<b>Investment</b>	32.34611	24.69847	1.30964	0.32054	-39.7731	104.4653
<b>Operating Expenses</b>	-52.9657	23.90811	-2.21539	0.15710	-122.777	16.8456
<b>Tax</b>	10.55442	4.97056	2.123387	0.167701	-3.95954	25.06839
<b>NPA</b>	-1.303	1.069548	-1.21827	0.34733	-4.42606	1.820064

**{X: NPA, Investments, Operating Expenses, Tax; Y: Return on Equity}**

*Source:-* Authors' Compilation

**Interpretation:** In this regression analysis, the variables of interest are NPA (Non-performing Assets) and ROE (Return on Equity).

The regression statistics show that the multiple R-value is 0.9805, indicating a strong correlation between NPA and ROE. The R-squared value is 0.9613, meaning that approximately 96 percent of the variation in ROE is being explained by NPA. The adjusted R-squared value is 0.8840, indicating that a greater percentage of the variation in ROE is being explained with these variables in the model.

The standard error is 0.8642, indicating the average distance of observed values from the regression line. The observations are 7, which represents the number of data points in our sample.

The coefficient of the intercept term is 22.3069, meaning that when NPA is zero, the predicted value of ROE is 22.3069. The coefficient for Non-performing Assets (NPA) is -1.3030, suggesting that a one-unit increase in NPA leads to a 1.3030 unit decrease in the dependent variable. This relationship is not statistically significant (p-value = 0.3473). The confidence interval (-4.4261 to 1.8201) suggests a reasonably wide range of potential values, indicating uncertainty in the estimate. In summary, this regression analysis suggests that NPA, to some extent, may have an impact on the dependent variable. However, the significance of this relationship is not strong, as indicated by the p-value.

There could be several reasons why there may not be a significant relationship between Non-performing Assets (NPA) and Return on Equity (ROE) in the banking sector. For example, banks with diversified sources of revenue, such as fee-based income or non-interest income, may be less reliant on interest income generated from loans. This can help offset the negative effect of NPAs on ROE and provide stability to overall profitability. Also, Well-capitalized banks with sufficient capital buffers are better equipped to absorb potential losses from NPAs.

### 5.3 Non-performing Assets and Return on Assets

Table 3:- Regression Analysis of NPA and Return on Capital Employed

Regression	Values
Multiple R	0.98793
R Square	0.976005
Adjusted R Square	0.928016
Standard Error	0.062827
Observations	7

	Coefficients	Standard Error	T Sat	P-Value	Lower 90%	Upper 90%
<b>Intercept</b>	0.756714	2.416803	0.313106	0.783835	-6.30031	7.813743
<b>Investment</b>	3.918695	1.795619	2.182364	0.160798	-1.32449	9.161876
<b>Operating Expenses</b>	-6.11997	1.738158	-3.52095	0.072054	-11.1954	-1.04457
<b>Tax</b>	1.398611	0.361368	3.870325	0.060739	0.343422	2.4538
<b>NPA</b>	-0.25444	0.077758	-3.27223	0.082061	-0.48149	-0.02739

{X: NPA, Investments, Operating Expenses, Tax; Y: Return on Assets}

Source:- Authors' Compilation

**Interpretation:** Regression Analysis of NPA vs ROA for a Sample of Seven Observations.

This regression analysis between Non-performing Assets (NPA) and Return on Assets (ROA) for a sample of seven observations. Multiple R is 0.9879, indicating a strong positive correlation.

R-squared value of 0.9760 means that approximately 97.60 percent of the variation in the dependent variable can be explained by the independent variables. Standard Error is a predictor of the model's accuracy, is 0.0628

The coefficient table shows that the intercept is 0.7567, which is the estimated value of the dependent variable when all the independent variables are zero. The coefficient for Non-performing Assets (NPA) is -0.2544, suggesting that a one-unit increase in NPA leads to a 0.2544 unit decrease in the dependent variable. This relationship also shows some level of significance, with a p-value of 0.0821. The confidence interval (-0.4815 to -0.0274) suggests a reasonably narrow range of potential values.

Overall, the regression model suggests that NPA may have a potentially significant impact on ROA. However, further investigation and a bigger sample are necessary to get a more accurate picture.

#### 5.4 Non-performing Assets and Return on Capital Employed (ROCE)

**Table 4:- Regression Analysis of NPA and Return on Equity**

Regression	Values
Multiple R	0.98793
R Square	0.976005
Adjusted R Square	0.928016
Standard Error	0.062827
Observations	7

	Coefficients	Standard Error	T Sat	P-Value	Lower 90%	Upper 90%
<b>Intercept</b>	-2.51215	5.319132	-0.47229	0.68324	-18.0439	13.01964
<b>Investment</b>	3.536541	3.951971	0.89488	0.465284	-8.00316	15.07624
<b>Operating Expenses</b>	-5.85998	3.825506	-1.53182	0.265251	-17.0304	5.310447
<b>Tax</b>	2.834944	0.795333	3.564474	0.070486	0.512583	5.157305
<b>NPA</b>	-0.70455	0.171137	-4.11686	0.054246	-1.20426	-0.20483

{X: NPA, Investments, Operating Expenses, Tax; Y: Return on Capital Employed}

Source:- Authors' Compilation

**Interpretation:** This regression analysis aims to explain the relationship between our dependent variable (Return on Capital Employed) and independent variable (NPA) while taking into account the effect of control variables (Investment, Operating Expenses, Tax,). In this case, multiple R is 0.9495, indicating a strong positive correlation.

An R-squared value of 0.9016 means that approximately 90.16 percent of the variation in ROCE can be explained by the independent variables. This means that other factors contribute lesser to the variability in Return on Capital Employed. A lower standard error indicates a better fit of the model.

The intercept represents the estimated value of the dependent variable (ROCE) when all the independent variables are zero. In this case, the intercept is -2.5121.

Furthermore, the coefficient for Non-performing Assets (NPA) is -0.7045, suggesting that a one-unit increase in NPA leads to a 0.7045 unit decrease in ROCE. This relationship is relatively more significant with a p-value of 0.0542, approaching the conventional threshold of 0.05. The confidence interval (-1.2043 to -0.2048) also suggests a reasonably narrow range of potential values.

Overall, the regression model suggests that the presence of Non-performing Assets (NPA) appears to have a potentially significant negative association with ROCE.

## 6. Inference

Our hypotheses were:

**H<sub>0</sub>:** NPAs do not impact the financial performance of banks in the banking sector of India.

**H<sub>A</sub>:** NPAs negatively impact the financial performance of banks in the banking sector of India.

**After running various statistical tests, the findings indicate that:**

- 2 out of 3 financial metrics taken (ROA, ROCE) are significantly impacted by NPA.
- Only 1 metric, i.e., ROE is weakly impacted by NPA. This could be attributed to the fact that there are various other factors, like Taxation, economic conditions, asset valuation, and financial leverage, that have a more significant impact on ROE rather than NPA.
- Therefore, we have enough evidence to fail to accept the null hypothesis and assert that there is a significant impact of NPA on the profitability of Indian banks.

Even though we have concluded that NPA does affect the profitability of banks, it is also important to note that there might be some discrepancies due to:

- **Non-availability of Data:** Some banks are unable to provide their data due to a number of reasons including mergers and acquisitions (AU Financiers Ltd owing to their conversion), non-disclosure, data privacy regulations, and reporting errors.
- **Short Time-period:** As we have only taken into account data from 2014-2020, there may not be much to establish a relationship between the two variables because of the short timeframe.
- **Data Manipulation:** There may be instances where data is manipulated intentionally to show a more favourable outcome, such as hiding bad loans to inflate profits.

## **7. Recommendations**

Non-performing Assets (NPAs) are a major concern for the banking sector in India, and the Government of India has taken numerous measures to address this issue. Here are some of the recommendations and policies undertaken by the government to control NPAs in India:

- 7.1 Debt Recovery Tribunals (DRTs):** The Narasimham Committee Report I (1991) proposed the establishment of Special Tribunals to expedite the resolution of cases. There are 22 Debt Recovery Tribunals and 5 Debt Recovery Appellate Tribunals. This is inadequate to address the issue across the nation (India).
- 7.2 Lok Adalats:** Lok Adalats have shown to be effective in the recovery of modest debts. According to the RBI's 2001 standards. They cover NPA up to Rs. 5 lakhs, and both suits and nonsuits are covered. Lok Adalats circumvent the legal system.
- 7.3 Compromise Settlement:** The Compromise Settlement Scheme is a straightforward approach to NPA recovery. The Compromise Settlement Scheme is used for loans of less than Rs. 10 crores. It includes cases that have been filed in court as well as those that are pending with courts and DRTs (Debt Recovery Tribunals). Wilful default and fraud cases were barred.
- 7.4 Credit Information Bureau:** A solid information system is necessary to prevent loans from becoming non-performing assets. If a borrower defaults with one bank, this information should be made public to all banks so that they may avoid lending to him in the future. A Credit Information Bureau may assist by keeping a data bank that is accessible to all lending institutions.
- 7.5 Corporate Governance:** A Consultative Group under the chairmanship of Dr. A.S. Ganguly was set up by the Reserve Bank to review the supervisory role of Boards of banks and financial institutions and to obtain feedback on the functioning of the Boards vis-à-vis compliance, transparency, disclosures, audit committees etc. and make recommendations for making the role of Board of Directors more effective with a view to minimizing risks and over-exposure.
- 7.6 Asset Quality Review (AQR):** In 2015, RBI conducted a thorough asset quality review of banks to identify NPAs and improve their disclosure. As a result, banks had to recognize and disclose their bad loans more transparently.
- 7.7 Insolvency and Bankruptcy Code (IBC):** In 2016, the Indian government passed the IBC to provide a time-bound resolution framework for stressed assets. Under this law, companies that are unable to repay their debts can be referred to the National Company Law Tribunal (NCLT) for resolution.

**Other factors that can be considered to reduce NPAs:**

- 7.8 Risk Management:** Adherence to documented risk management policy, proper risk architecture, independent credit risk evaluation, centralized database, credit management information system, and credit modelling can help prevent non-performing assets to a great extent. Credit modelling, in particular, can predict impending sickness. For example, the Reserve Bank of India has devised a model i.e., Compatible Index of Lead Indicator (CILI) to predict movements in the manufacturing sector by about two quarters in advance. Similarly, ICRA has a risk assessment software model.
- 7.9 Early Warning System:** The RBI can develop an early warning system to identify potential NPAs before they become a problem. The system can analyse various parameters like cash flow, financial ratios, and payment history of borrowers to signs of stress in their repayment capacity.
- 7.10 Improving Financial Literacy:** The government can improve financial literacy among borrowers to ensure that they understand the risks associated with borrowing and the importance of timely repayment of loans.

These recommendations and policies can help to prevent the accumulation of bad loans in the future and improve the recovery of existing NPAs. However, the implementation of these policies will require the cooperation of banks, financial institutions, and borrowers. The government and RBI will need to continue working together to ensure the stability of the financial system and the overall economy.

## 8. Conclusion

Non-performing assets (NPAs) have been a persistent problem for the Indian banking sector as they can have several negative effects on banks, like reducing profitability, capital erosion, and decreasing lending capacity.

It's interesting to note that our study found a statistically insignificant relationship between ROE. However, it's important to consider that NPAs still has a significant impact on other financial indicators and performance metrics. These variables can provide insights into the overall profitability and efficiency of banks.

**Here are some potential reasons why NPAs might have an impact on these variables:**

*Significant*

**ROA:** Non-performing assets can lead to a decline in the overall asset quality and profitability of banks. Higher NPAs indicate a larger proportion of non-performing loans relative to total assets, which can negatively impact the ROA.



This is because NPAs reduce the interest income and increase provisions for potential losses, thereby affecting the overall profitability of the bank.

**ROCE:** Return on capital employed reflects the efficiency of a bank in generating profits from its capital base. Higher levels of NPAs can reduce the return generated from the capital employed by a bank, as provisioning requirements and potential losses can erode the capital base. It's worth noting that the impact of NPAs on these variables can vary across different banks and time periods, depending on various factors such as the overall economic conditions, industry-specific risks, and the effectiveness of risk management practices.

#### *Insignificant*

**ROE:** The banking sector typically utilizes more debt than equity due to a few key reasons. Firstly, debt allows banks to leverage their capital and potentially generate higher returns on investment. Secondly, debt is often less expensive than equity financing, as interest payments are tax-deductible. Additionally, banks can maintain control and ownership by utilizing debt as a funding source.

The Indian government has taken several policy measures to address this issue. These policies include setting up Debt Recovery Tribunals, passing the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act 2002, using Lok Adalats, allowing for compromise settlements, establishing a Credit Information Bureau, improving corporate governance, conducting Asset Quality Reviews, introducing the Insolvency and Bankruptcy Code (IBC), enforcing Prompt Corrective Action (PCA), implementing Strategic Debt Restructuring (SDR), recapitalizing banks, and allowing for One Time Settlements (OTS).

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