

**IMPACT OF NONPERFORMING LOANS ON VALUE CREATION****<sup>1</sup>Dr. Chitra Gounder and <sup>2</sup>Pari Rajput**<sup>1</sup>Associate Professor - Finance, N. L. Dalmia Institute of Management Studies and Research, (A School of Excellence of N. L. Dalmia Educational Society), Mumbai India<sup>2</sup>PGDM Student (Finance), N. L. Dalmia Institute of Management Studies and Research, (A School of Excellence of N. L. Dalmia Educational Society), Mumbai India<sup>1</sup><https://orcid.org/0000-0001-5174-6740>  
[chitra.gounder@nldlamia.edu.in](mailto:chitra.gounder@nldlamia.edu.in)**ABSTRACT**

*A crucial role is played by the banking industry in emerging economies. A country's economic success and the growth of the banking industry are inextricably linked. The predominance of non-performing assets is a serious danger to the banking industry (NPAs). NPA are bad loans whose debtors didn't fulfil their repayment commitments. Operational effectiveness has an impact on the profitability, liquidity, and solvency of the banks, which in turn has an impact on the NPA in the loan portfolio. In light of this, this study was conducted to examine the causes and implications of non-performing assets on banking performance and the production of shareholder value. ROE, EPS, and DPS are three examples of bank performance metrics that will be used to analyse the effects of NPA on bank performance. The entire effects of NPA on bank performance, share value generation, and market reaction are covered in this paper, in brief. The emphasis of the study will be on Indian commercial banks between 2005 and 2022. The RBI's websites will be used for secondary data collection, along with data sources including CMIE, Prowess, and Ace Equity, among others. Panel data regression will be used for data analysis and interpretation. The stock investors in the banking industry, banking regulators, bankers, and investment bankers will all benefit from this research.*

*Keywords: Non Performing loans, Return on Equity, Dividend per share, Earning per share, Value creation, Indian Banks*

**INTRODUCTION**

Assets which generate income are called performing assets and but those do not generate income are called non-performing assets. A debt obligation where the borrower has not paid any previously agreed upon interest and principal repayments to the designated lender for an extended period of time. The nonperforming asset is therefore not yielding any income to the lender in the form of principal and interest payments. An asset becomes non-performing when it ceases to generate income for the bank. A nonperforming asset (NPA) is defined generally as a credit facility in respect of which interest and / or installment of principal has remained "past due" for two quarters or more. An amount due under any credit facility is treated as "past due" when it has not been paid within 30 days from the due date. It was, however, decided to dispense with past due. As at March 2021, the ratio of NPAs to total loans was reported at 7.33%.

<b>Impact of NPA on Individual Banks</b>	<b>Impact of NPA on Economy</b>
1. Operational Efficiency	1. Money supply.
2. Profitability	2. Employment opportunity.
3. Liquidity	3. Inflation.
4. Solvency	4. GDP.
5. Market Value	5. Many more
6. Stake Holders	

**LITERATURE REVIEW**

Yadav S. Mahipal(2011)analyzed the impact of NPA of the profitability and profitability with other variables of public sector banks at aggregate and sectoral level. He also studied the impact of NPA of efficiency and productivity. The time period covered under this study is 1994-95 to 2005-06 for the indices of profit, non-performing asset, spread burden, credit-deposits ratio, fixed deposits ratio, operating expenses, provisions and contingences and various other indices of all 27 public sector banks. To examine the impact of NPAs on productivity and efficiency, the data regarding to business per employee and profit per employee is collected for the period of 1997-98 to 2005-06. The tool used for analysis is regression. Statistically result shows the NPA affects profitability of bank upto 50 percent and its impact has increased to a great extent when it works with other banking variables. Ranjani M.L has worked on magnitude of NPA and its impact in selected public and

private sector banks in Bangalore City. He also looked into the measures adopted to reduce NPA and mechanism adopted for the same pre and post securitization act. Study is Primary data collected from 175 employees of 4 private and 7 public sector banks. Kalvakuntala and Reddy has conducted a study on the impact of NPA on Banking share price movements and its market capitalization. The study is based on 5 years on 10 banks with high market capitalization. Granger Causality test and Johansen test was used to test the hypothesis statistically. The study found strong correlation on NPA with market capitalization as well as Stock prices. Sharma and Rathore investigated the impact of NPA on Indian scheduled commercial banks. The research is based on 10 years data and regression analysis is used to test the statistics. ROE, ROA and net interest margins have been used as proxy variables for profitability measure. Gross NPA to gross advance ratio and net NPA to net advance ratio has been used as independent variables as a measure of NPA. The study reveals that profitability is getting significantly affected by NPA.

Balasubramaniam C.S has found that NPA's does not impact only profitability of banks but it also impacts the liquidity, management time, effort and other operations of scheduled commercial banks. Narula and Singla assessed the performance of NPA of Punjab National bank and its effects on profitability for a period of six years (2006-2012). Findings of the study shows an increase in the NPAs of bank every year for the mismanagement on part of bank. As profits go up, the NPA of bank also goes up as a result of mismanagement. Malyadri and Sirisha (2011) worked for comparative analysis of NPA in weaker section of private and public sector bank. He also did a comparison of old private sector and new private sector banks for a period of seven years. The study observed greater penetration of public sector banks in weaker section compared to private sector. Study also showed decline in the ratio of NPA which leads to improvement in the quality of assets. Chaudhuri Datta Tamal (2005) has talked about the negative effects of NPA on the shareholders' value and capital raising capability. He emphasized on the need of developing State Resolution Mapping (SRM) framework to save the assets from deterioration.

Isaac and Otchere did research on privatized banks in middle and low income countries. Study observed significant improvements in operating performance of private banks. Study also reveals that privatization encourages excessive risk taking in developing countries as a result of which banks end up having higher amount of NPAs when compared to their counterparts in developed countries. NPA in loan portfolio affects operational efficiency which in turn affects profitability, liquidity and solvency position of the banks. Keeping this in view, this study has been carried out to study the causes and effects of the Non-Performing Assets on banking performance and shareholder value creation. Study will be emphasized from the period of 2005-2017 for Indian commercial banks. For studying impact of NPA on bank performance, Bank performance measures such as ROE, EPS, DPS will be used. For studying impact of NPA on shareholder value creation; EVA will be used as measure for shareholder creation. For studying impact of NPA on market performance of equity share of Indian banks, MVA will be used as measures. In short this study will overall impact of NPA on bank performance, share value creation and market Performance

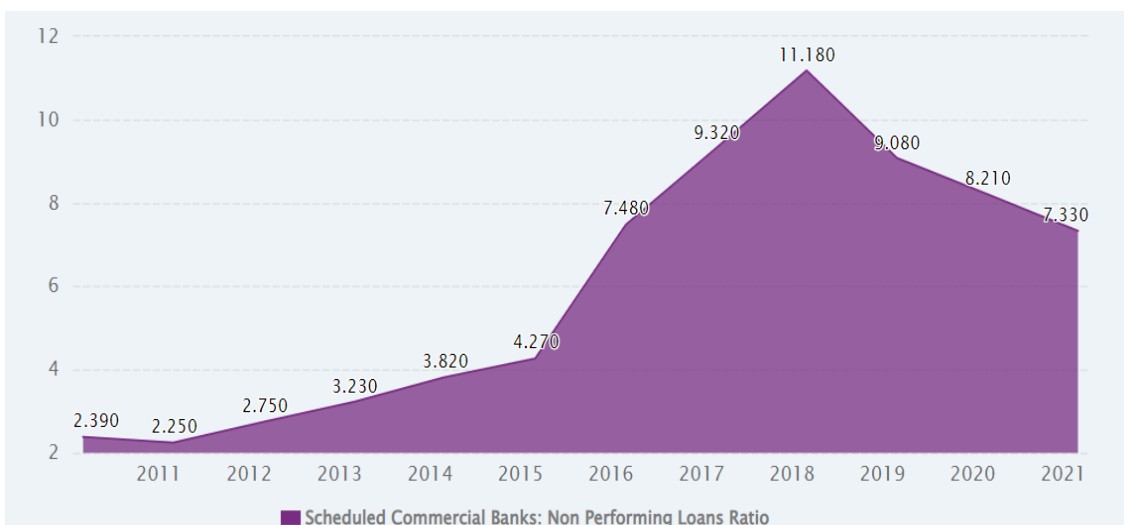


Figure 1

The ratio of non-performing loans in India decreased from 8.2% in March of last year to 7.3% in March of this year. The statistics peaked in March 1999 at 14.7% and fell to a record-low 2.3% in March 2011. In Oct 2022, the nation's domestic credit totalled 2,558.5 USD billion, a rise of 13.0% year over year. In March 2022, India's household debt was 441.0 USD billion, or 14.1% of its nominal GDP.

**NEED FOR THE STUDY**

Operational effectiveness has an impact on the profitability, liquidity, and solvency of the banks, which in turn has an impact on the NPA in the loan portfolio. In light of this, a research has been conducted to examine the causes and implications of non-performing assets on banking performance and the development of shareholder value. The emphasis of the study will be on Indian commercial banks between 2005 and 2022. ROE, EPS, and DPS are three examples of bank performance metrics that will be used to analyse the effects of NPA on bank performance. EVA will be utilised as a measure for shareholder creation in order to examine the influence of NPA on shareholder value generation. MVA will be used as a metric to examine the effects of NPA on the market performance of Indian banks' equity share. The total effects of NPA on bank performance, share value generation, and market performance are covered in this paper, in brief.

**RESEARCH OBJECTIVE**

- To study the trend of Non-Performing Assets of Indian Commercial Banks
- To study impact of NPA on bank performance (measures such as ROE, EPS, DPS will be used).
- To empirically analyse and interpret statistical relationship between NPA and its effects on Profitability and shareholders value creation.

**RESEARCH METHODOLOGY**

The emphasis of the study will be on Indian commercial banks between 2005 and 2022. ROE, EPS, and DPS are three examples of bank performance metrics that will be used to analyse the effects of NPA on bank performance. The entire effects of NPA on bank performance, share value generation, and market reaction are covered in this paper, in brief.

**RESEARCH DESIGN**

The purpose of this study is to analyse potential banks in India with a concentration on the years 2005 to 2022. The design of the research is discrete and flexible in reaching this goal. To more directly address the study objectives that are challenging to address in an exploratory research design, we have chosen a descriptive research approach (Creswell, 2003). Also, as the majority of the data used in this study are quantitative or empirical, extensive analyses are necessary and are easily accomplished in a descriptive approach.

**SAMPLE DATA AND ITS SOURCES:**

In conducting this investigation, secondary data were utilized. The Data Book for Planning Commission has been used to compile the macroeconomic statistics for India. The bank-specific information was gathered from the RBI, CMIE-prowess, and each bank's annual reports. Up to 40 major Indian banks were taken into account in the current investigation, which covered the years 2005 through 2022.

The commercial banks in India make up the study's population. In India, 33 listed public and private banks are currently in existence. But, for this study, 40 banks were chosen. To prevent any potential influence on the research findings and conclusions, the data of other banks, such as cooperative and international banks, are not taken into consideration. There are currently (12) Twelve Public Sector Banks and (21) Twenty-One Private Sector Banks operating in India. We have covered (24) Twenty-four Public Sector Banks and (16) sixteen Private Sector Banks for our empirical study for 17 years i.e. (2005-2022).

**Table: 1** Banks Adopted for Empirical Study

Sr. No.	Bank Name	Type of Bank
1	Allahabad Bank	Public Sector
2	Andhra Bank	Public Sector
3	Bank of Baroda	Public Sector
4	Bank of India	Public Sector
5	Bank of Maharashtra	Public Sector
6	Canara Bank	Public Sector
7	Dena Bank	Public Sector
8	Federal Bank	Private Sector
9	HDFC Bank	Private Sector
10	ICICI Bank	Private Sector
11	Indian Bank	Public Sector
12	Oriental Bank of Commerce	Public Sector
13	State Bank of India	Public Sector

14	Union Bank of India	Public Sector
15	Vijaya Bank	Public Sector
16	Axis Bank	Private Sector
17	Central Bank of India	Public Sector
18	City Union Bank	Private Sector
19	Corporation Bank	Public Sector
20	Development Credit Bank	Private Sector
21	Dhanalaxmi Bank	Private Sector
22	IDBI Bank	Public Sector
23	Indian Overseas Bank	Public Sector
24	Indusind Bank	Private Sector
25	IngVysya Bank	Private Sector
26	Jammu & Kashmir Bank	Private Sector
27	Karnataka Bank	Private Sector
28	KarurVysya Bank	Private Sector
29	Kotak Mahindra Bank	Private Sector
30	Lakshmi Vilas Bank	Private Sector
31	Punjab National Bank	Public Sector
32	Punjab & Sind Bank	Public Sector
33	South Indian Bank	Private Sector
34	State Bank of Bikaner & Jaipur	Public Sector
35	State Bank of Mysore	Public Sector
36	State Bank of Travancore	Public Sector
37	Syndicate Bank	Public Sector
38	UCO Bank	Public Sector
39	United Bank of India	Public Sector
40	Yes Bank	Private Sector

#### Variables Selected for Study

- i) **Earnings per share (EPS):** EPS is regarded as the most crucial factor in determining a stock's worth. Profits are distributed to each outstanding share of the corporation, or EPS. The capital needed to produce net earnings is sometimes overlooked in the computation of EPS. The more efficient of two firms is the one that produces the same EPS with less capital. There is a potential that the earnings may be manipulated, making EPS fragile. Thus, it is recommended that the EPS be utilised in conjunction with financial statement analysis and other pertinent measurements.
- ii) **Dividend per Share (DPS):** Dividends are rewards provided to shareholders by the corporation. Profits and dividend payments made by the corporation determine the worth of its shareholders. Many businesses concentrate on raising DPS since it is an excellent approach to show shareholders that the business is performing well.
- iii) **Return on Equity (ROE):** Profits are reported as a proportion of shareholders' equity, or return on equity (ROE). The return on equity (ROE) gauges how well a company's management uses shareholder money. This indicator is crucial, particularly from the perspective of investors, since it will enable them to estimate the increased income that will result from their investment. Yet, it's important to remember that a greater ROE does not always imply a higher level of efficiency because, when a firm is supported by debt, the ROE rises even while the income stays the same.

Dependent variables is EPS, ROE, DPS.

Independent variable is NPA

#### iv) Research Variables:

Dependent variable is, EPS, ROE, DPS, are the variables which represents different performance measure and creation of shareholder value and market indicator.

a) **Earnings per share** = (Net Profit after Taxes – Preference Dividends) / Number of Equity Shares

b) **ROE** = Net income after tax / (Equity share holder capital + reserves – Preliminary expenses)

c)  $DPS = \text{Total Dividend} / \text{Number of Equity share}$

**Independent variable is NPA:** Net Non-Performing Asset of banks on yearly basis

Panel Regression equation model for the study:

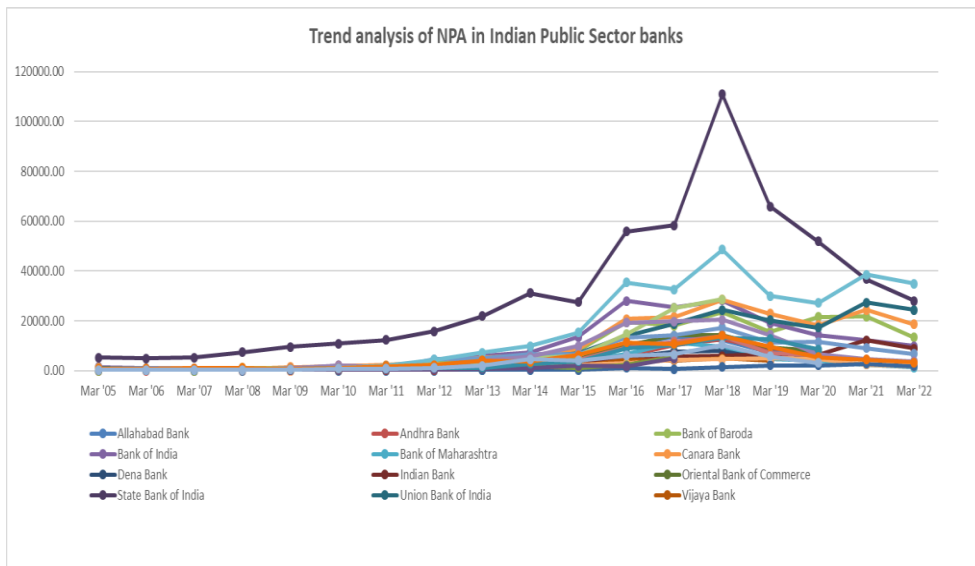
$$NPA_{it} = \beta_0 + \beta_1 EPS_{it} + u_{it}$$

$$NPA_{it} = \gamma_0 + \gamma_1 DPS_{it} + v_{it}$$

$$NPA_{it} = \chi_0 + \chi_1 ROE_{it} + \Upsilon_{it}$$

**1. Empirical discussion and findings:**

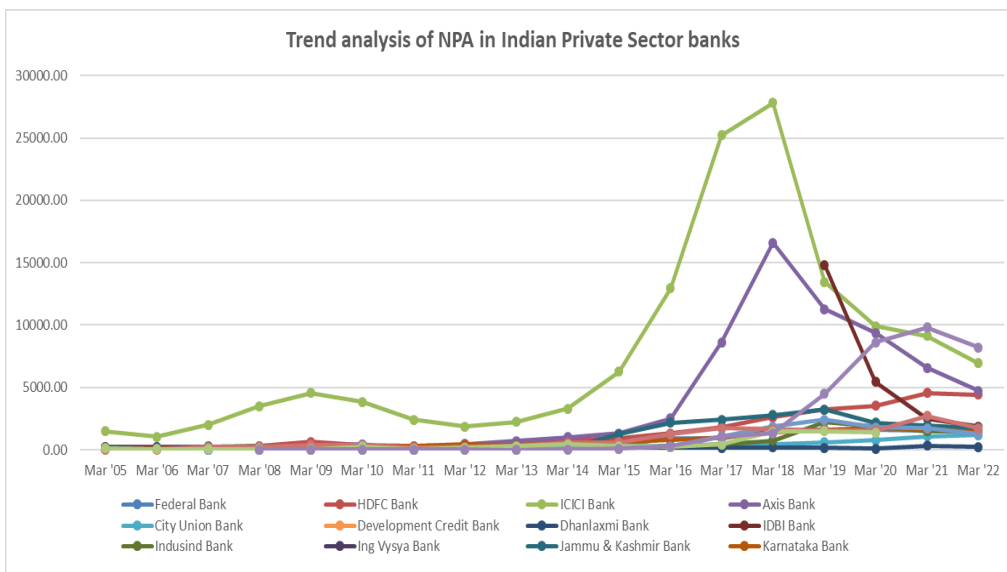
**i) Trend analysis of NPA in Indian Public Sector banks:**



**Figure 2**

By looking at the Figure we can see that NPA’s have risen during the year 2017-2019 and have started decreasing thereafter. State Bank of India having the highest amount of NPA followed by Bank of Maharashtra.

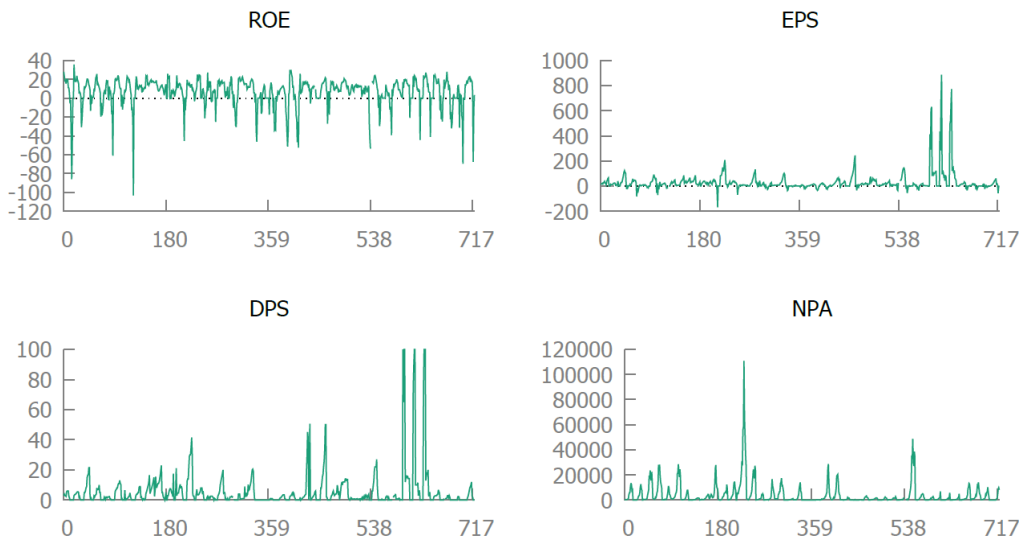
**ii) Trend analysis of NPA in Indian Private Sector banks:**



**Figure 3**

While analyzing the figure we can notice an upward trend in NPA’s of Private Sector bank from March 2014 to March 2018, thereafter NPA’s have been controlled and managed by the banks. The Highest NPA’s are discovered in ICICI Bank, followed by Ing Vysya Bank and Axis Bank.

**Trend analysis of EPS, ROE, DPS and NPA in Indian commercial banks:**



**Figure 4**

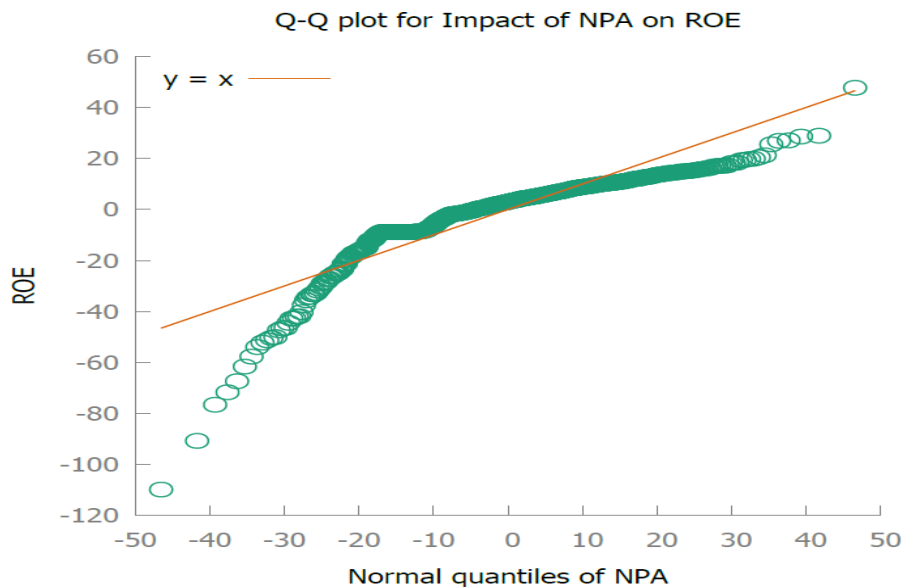
We can notice ROE is Highly Negatively Correlated with NPA which means a little change in NPA will negatively impact Profitability of the company eventually effects will be seen in the ROE of the Shareholders while EPS and DPS are less correlated to NPA according to the figure, NPA causes blockage of money cycle which leads to reduced reduced opportunities to invest in other projects this impacts the earnings of the company which also impacts pay-outs given to the shareholder. Further in the study impact of NPA on ROE, EPS and DPS is explained in detail.

**i) Correlation Matrix of NPA, ROE, EPS and DPS**

**Table: 2**

	NPA	DPS	EPS	ROE
NPA	1	-0.0962	-0.1261	-0.307
DPS		1	0.932	0.2794
EPS			1	0.3223
ROE				1

From the above correlation matrix, ROE is highly negatively correlated with NPA, while high positive correlation with EPS and DPS is found. This indicates NPA is showing negative impact on performance of banks about negative 9% on DPS, negative 12% on EPS and negative 30% on ROE with regards to shareholder value creation.



**Figure 5**

i) Study of impact of NPA on ROE:

Table: 3

Panel Regression Result showing Impact of NPA on ROE of Indian Banks						
Particulars	Panel Regression Models					
	Pooled Regression Model		Fixed Effect Model		Random Effect Model	
const	8.80345	***	8.94384	***	8.92385	***
NPA	-0.000538495	***	-0.000572444	***	-0.000569134	***
R-squared	0.094264		0.105807		0.105807	
Adjusted R-squared	0.092997		0.103448		0.103448	
P-value(F)	4.07e-17		4.58e-18		4.58e-18	
Durbin-Watson	0.782922		0.792928		0.792928	
rho	0.608001		0.603202		0.603202	
Breusch-Pagan test	p-value = 0.000603411	So Random effect model has to be selected				
Hausman test	p-value = 0.342113	So Random effect model has to be selected				

In above table the relation of NPA with ROE has been defined, the value of R-Squared is ranging between 0.09 to 0.10 in the above 3 models which show that 9 to 10 % variation in the dependent variable (ROE) is described by the independent variable (NPA). In this model the Adjusted R square is ranging from 9 to 10% which is near to the value of R-Squared which indicates that samples are not over fitted and there is no problem generalizability. These values are very close, anticipating minimal shrinkage based on this indicator. The value of Durbin Watson is ranging 0.78 to 0.79 which shows that there is no possibility of autocorrelation in residuals. The model is good fit as p value (F) is 0.000 which indicates the variation in dependent variable is explained by independent variables. So by above analysis, model can be interpreted as fit model for defining the Impact of NPA on ROE of banks share.

Due to NPA cost of debt i.e the interest rises. The increase in interest reduces the profitability. Due to decrease in net income the bank is unable to efficiently use the shareholders' investment and likewise unable to return value to Equity shareholders.

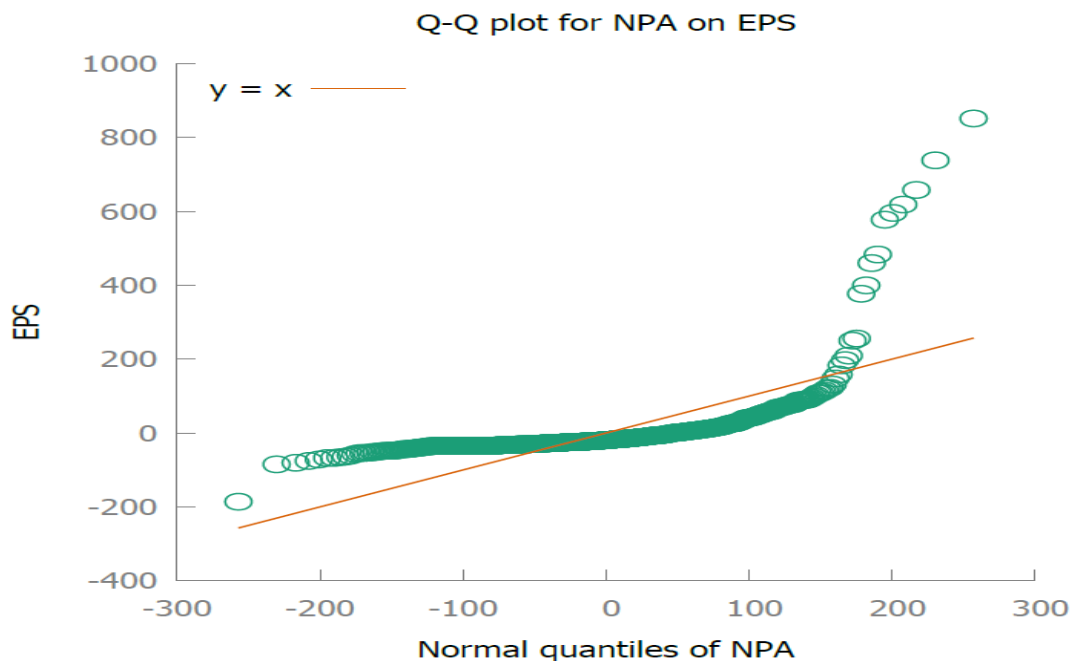


Figure 6

ii) Study of impact of NPA on EPS

Table 4

Panel Regression Result showing Impact of NPA on EPS of Indian Banks						
Particulars	Panel Regression Models					
	Pooled Regression Model		Fixed Effect Model		Random Effect Model	
const	34.5950	***	34.0573	***	34.1640	***
NPA	-0.00117108	***	-0.00104087	***	-0.00106496	***
R-squared	0.015898		0.021909		0.021909	
Adjusted R-squared	0.014522		0.012281		0.012281	
P-value(F)	0.000715		0.000368		0.000368	
Durbin-Watson	0.585665		0.589060		0.589060	
rho	0.707076		0.705301		0.705301	
Breusch-Pagan test	p-value = 0.261839	So Fixed effect model has to be selected				
Hausman test	p-value = 0.366634	So Radom effect model has to be selected				

In above table the relation of NPA with EPS has been defined, NPA is showing negative non-significant relationship with EPS. The value of R-Squared is ranging between 0.01 to 0.02 in this model which shows that 1 to 2 % variation in the dependent variable (EPS) is described by the independent variables (NPA). In this model the Adjusted R square is ranging between 1.4 to 1.2% which is near to the value of R-Squared which indicates that samples are not over fitted and there is no problem generalizability. These values are very close, anticipating minimal shrinkage based on this indicator. The value of Durbin Watson is 0.585 to 0.589 which shows that there is no possibility of autocorrelation in residuals. The model is good fit as p value (F) is ranging between 0.0007 to 0.0003 which indicates the variation in dependent variable is explained by independent variables. So by above analysis, model can be interpreted as fit model for defining the Impact of NPA on EPS of banks share.

As we know EPS reflects the performance of the banks. There are several factors which have impact on the EPS of the Banks. NPA is one of them. It is observed that even when the NPAs of the banks are on rise, in corresponding year the EPS is also on rise. This is because the net income that we consider also includes the income generated from other sources. Increased NPA will ‘ceteris paribus’ cause the EPS to decrease. NPA leads to blocking of money this in turn leads to the bank’s reduced capacity to invest in other remunerative projects. Thus NPA not only impact the current earnings but also future earnings of the banks. This hampers the profitability and liquidity of the banks.

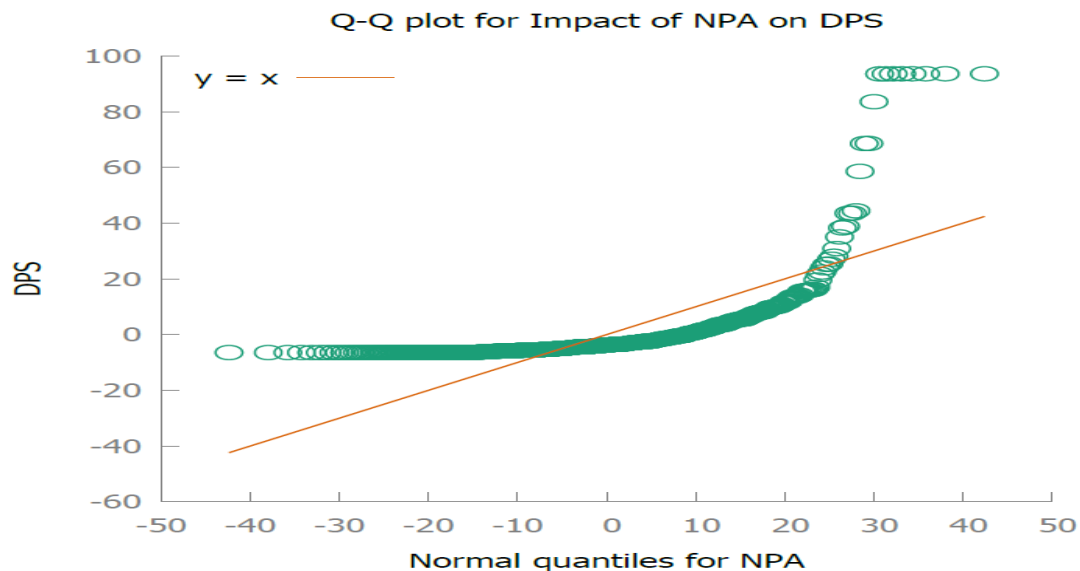


Figure 7



iii) Study of impact of NPA on DPS

Table 5

Panel Regression Result showing Impact of NPA on DPS of Indian Banks						
Particulars	Panel Regression Models					
	Pooled Regression Model		Fixed Effect Model		Random Effect Model	
Const	6.45919	***	6.37096	***	6.39089	***
NPA	-0.000146780	**	-0.000125450	**	-0.000129396	**
R-squared	0.009257		0.015324		0.015324	
Adjusted R-squared	0.007867		0.006609		0.006609	
P-value(F)	0.010049		0.004096		0.004096	
Durbin-Watson	0.509428		0.512271		0.512271	
rho	0.745369		0.743953		0.743953	
Breusch-Pagan test	p-value = 0.261614	So Fixed effect model has to be selected				
Hausman test	p-value = 0.366642	So Random effect model has to be selected				

In above table the relation of NPA with DPS has been defined, NPA is showing negative non-significant relationship. The value of R-Squared is ranging between 0.009 to 0.015 in this model which shows that 1 to 1.5%% variation in the dependent variable (DPS) is described by the independent variable(NPA).In this model the Adjusted R square is ranging between 0.007 to 0.006 which is near to the value of R-Squared which indicates that samples are not over fitted and there is no problem generalizability. These values are very close, anticipating minimal shrinkage based on this indicator. The value of Durbin Watson is 0.50 to 0.51 which shows that there is no possibility of autocorrelation in residuals. The model is good fit as p value (F) is ranging between 0.01 to 0.004 which indicates the variation in dependent variable is explained by independent variables. So by above analysis, model can be interpreted as fit model for defining the Impact of NPA on DPS of banks share. The payout of dividends is from earnings. As seen before, NPA causes earnings to fall, this also reduces the payout to shareholders. Decreased profits leads to less available funds in banks and therefore banks return less value to their shareholders. This has negative impact on performance of the bank. This may erode the value of shareholders' investment in the bank.

**CONCLUSION**

The main objective is to empirically analyses and interpret statistical data to study the trend of non-performing assets at Indian commercial banks. To study the impact of non-performing assets on bank performance, bank performance metrics like ROE, EPS, and DPS will be used. ROE has a very low positive association with EVA but a very strong negative correlation with NPA. This shows that NPA has an effect on bank performance, but there is very little association with the development of shareholder value. It suggests that in addition to NPA, there are many other factors that influence market value added. The interest rate goes up as a result of NPA. The profitability declines as interest rates rise. The bank is unable to utilize the shareholders' investment effectively due to the decline in net income, and it is also unable to reward equity owners with value. Increasing NPA will, "ceteris paribus," result in a decline in EPS. NPA causes money to be blocked, which reduces the bank's ability to invest in other lucrative initiatives. PA thus affects the banks' future as well as current profitability. This impairs the banks' capacity to be profitable and liquid.

Dividend payments are made from earnings. As we've just shown, NPA lowers earnings, which also lowers the payment to shareholders. Reduced earnings cause banks to have fewer capital available, which results in banks giving their shareholders less value. The bank's performance will suffer as a result of this. This might reduce the value of the bank investment made by shareholders.

Rising NPA affect the banks' ability to generate income and also cause them to lose depositors' and customers' confidence. Banks are an important part of every nation's financial sector. A rise in the deficit in the current account Every economic situation is affected by NPA, which is also the primary driver of the widening current account deficit. The system has an immediate impact on interest rates, loans, housing loans, CRR, and SLR.

The impact of greater NPA is also influenced by the corporates. Increasing NPAs in the banking sector are causing stockholders and depositors to lose faith in the system, and they are moving segments as a result.

---

Increased NPA has an impact on both the general population and serious, ethical borrowers with strong qualifications and credit ratings. Further in the research we will study about the impacts of NPA on ROE, EPS and DPS i.e impact of NPA on Profitability (Banking Performance) and Shareholder Value Creation.

**REFERENCES**

- Balasubramaniam, C. S. (2012). Non-performing assets and profitability of commercial banks in India: assessment and emerging issues. *Abhinav, National Monthly Refereed Journal of Research in Commerce & Management*, 1(7), 41-52.
- Chaudhuri Datta Tamal (2005), "Resolution Strategies for Maximising Value of Non-Performing Assets (NPAs)" SSRN,
- Isaac and Otchere (2009), "Competitive and value effects of bank privatization in developed countries" *Journal of Banking and Finance*, Vol. 33(12), pp. 2373-2385
- Kalvakuntala and Reddy (2015) "Non-performing asset impact on banking equity values - a study" *Indian Research Journal*, Vol. 2(3)
- Malyadri and Sirisha (2011), "A comparative study of Non-Performing Assets in Indian Banking Industry" *International Journal of Economic Practices and Theories*, Vol.1(2), pp. 77-87
- Narula and Singla (2014), "Empirical Study on Non-Performing Assets of Bank" *International Journal of Advance Research in Computer Science and Management Studies*, Vol. 2(1), pp. 194-199
- Ranjini M.L (2013), "An empirical study on npa management strategies between public and Private banks – with special reference to banks in bangalore city." *Vidyaniketan Journal of Management and Research*, Vol. 1(2), pp. 57-77"
- Sharma and Rathore (2016), "Measuring the Impact of Non-Performing Assets on the profitability of Indian Scheduled Commercial Banks" *IOSR Journal of Economics and Finance*, Vol.7(6), pp. 40-46
- Yadav, M. S. (2011). Impact of non-performing assets on profitability and productivity of public sector banks in India. *Afbe Journal*, 4(1), 232-239.