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EFFECT OF NON-PERFORMING ASSETS ON BANKING SECTOR: A STUDY ON STATE BANK OF INDIA

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ABSTRACT

Non-performing asset (NPA) is a critical challenge for the banking sector in India and the world as a whole now-a-days. It is negatively affecting the profitability of the banking industry over the period. The NPA is a drag on the banking sector. Various related studies, researches and banking statistics evidently show that the NPA is increasing more rapidly in the public sector banks than private sector banks in India scenario. It could only meet up by the vital and efficient asset management wings on the banks. Indian is holding 33rds position in respect of the world's gross NPA ratio (10.3%). This paper has attempted to analyze the effect of NPA on the profitability and the trend of NPA of the State Bank of India over last ten years from 2009-10 to 2018-19. The study reveals that the NPA has a gradual increasing trend, but a sharp decline in year 2018-19. The paper also shows that the NPA has an inverse effect on the profitability of the State bank of India.

KEYWORDS

non-performing assets, public sector banks, private sector banks, efficient asset management, profitability.

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G20, G21, G33.

INTRODUCTION

At the ancient time the banking system was started with the primary objective of receiving deposits from public and lending loans to public for the purpose of mobilizing the funds in the society. They charge interest on loans and pay interest on deposits. In this way, they earn a profit. So, loans are the assets of the banks whereas the deposits are liabilities for the banks. So, far the loan borrowers are paying due interest and repaying the installment of principal loan amount on due time, loan assets are good or performing assets for the banks. When these assets fail to generate income for the banks then they are termed as non-performing asset (NPA). The loan assets are classified under four categories like good advance, sub-standard advance, doubtful advance and loss advance. Out of these classes, sub-standard advance, doubtful advance and loss advance are termed as gross non-performing asset. The NPA is a vital indicator for assessing banks' credit risk, asset quality and efficiency in allocation of resources to productive sectors. Efficiency in management of loans and advances is becoming a critical task across the world. Our nation India is not the exception. The amount of bad loans and defaulters are gradually increasing over the years in India especially in public sector banks. The NPA is like a tough virus in the banking industry. It is gradually affecting the financial health of the banking industry and also the economy of the nation.

According to the IMF data, India is holding 33rd position among the 137 countries of the world in respect of gross NPA ratio. Presently, its gross NPA ratio is 10.3%. The Ukraine has the highest NPA ratio followed by San Marino and Greece. They have 54.3%, 47.2% and 44.1% NPA ratio respectively. The Canada has the lowest NPA ratio followed by the Republic of Korea and Switzerland. They have 0.4%, 0.5% and 0.6% of NPA ratio respectively[1]. Here, the gross NPA ratio is expressed in terms of the ratio between of non-performing loans to total loans & advances.

According to RBI data, the gross NPA ratio for the Indian Public Sector banks is 14.6%, private sector banks is (old-1.9% & new-4.7%) and foreign banks is 3.8%[2]. So, Indian public sector banks have higher NPA ratio comparison to private sector and foreign banks. The State Bank of India, having the highest market capitalization, has been selected as a sample unit for the purpose of this study. The gross NPA ratio of SBI is 10.9% as of 31.03.2018[3].

LITERATURE REVIEW

Several studies have been conducted by many academicians and researchers on a different aspects non-performing assets in Indian banking sector. Some of them are highlighted below.

Nachimuthu & Muthukrishna (2019) discussed the impact of NPA on the profitability in Indian scheduled commercial banks. They found that there was an increasing trend in NPA and due to such rise of NPA the profitability of the scheduled commercial banks had reduced in India.

Bawaa, Goyala, Mitraa, & Basub (2019) examined panel data for Indian banks with some specific financial ratios which reflects the operating capability, liquidity, solvency, profitability capital adequacy and business development capacity aspects across Indian banks which affects NPAs. They found a significant negative relationship between asset growth and NPAs in India.

Kapadia & Madhav (2019) analyzed the trends of NPAs and the factors responsible for mounting NPAs in the banking sector from non-identical aspects.

Bag & Islam (2019) aimed to analyze the recent trend of NPAs in the banking industry (public & private) with reference to India and Bangladesh. They also examined the relationship between NPAs and profitability of the banking industry. They found that the NPAs had an inverse impact on the profitability of both types of banks in both the nations, but problems were more serious for public sector banks than private sector banks. They also observed that the growths in NPAs in public sector banks were upward rising in both the nations.

Gulati (2018) analyzed new private sector banks with respect to their efficiency in NPA management comparatively. They used growth rate analysis and descriptive analysis. They found that some of the new private sector banks are more efficient in NPA management than other some new private sector banks in India.

Dave (2016) made an attempt to analyze the impact of Indian banking operations, trend and magnitude of NPAs in selected Indian public and private sector banks. He found that NPAs affect the liquidity and profitability, in addition to posting threat on quality of asset and survival of banks.

Ramasubbian & Thangavelu (2015) focused on the future trend of the NPA in Indian banking sector with the help of list square method and time serious analysis. They observed that the asset quality and financial health of private and foreign banks is improving in comparison to public sector bank and schedule commercial banks in India.

Bandyopadhyay (2013) made an analytical study to reveal the movement of NPA over time. He demonstrated an upward future trend of the NPA in the public sector banks in India. It puts a question mark on the wisdom and integrity of the top management of banks in handling credit portfolio. They suggested for replacing the practices of credit appraisal and monitoring of credit in public sector banks in India.

OBJECTIVES OF THE STUDY

1. To evaluate the trend of the NPA in SBI.
2. To examine the effect of NPA on the profitability of SBI.

[1] IMF Data, Quarter ended September 2018.
[2] RBI data, March 2018
[3] RBI data, March 2018

RESEARCH METHODOLOGY

The study is purely based on secondary data. The data have been collected from various related research articles, journals, RBI bulletin, annual reports of the State Bank of India (SBI) and web based resources. The study period is ten years from 2009-10 to 2018-19. The trend analysis has been used to show the movement of NPA during the ten years of the study period. The regression analysis has been done to predict the effect of NPA on the profitability of the SBI in the said study period. In this study, profitability of the banking sector has been shown in three important dimensions such as net profit margin (NPM), return on assets (ROA) and return on equity (ROE). The non-performing assets have been measured as a ratio of net non-performing assets to net advances. NPA is taken as independent variable (IV) and profitability measures are considered as dependent variable (DV) in the study. Two variable static linear regression model is "Y = a + b.X + e". Where, Y= Profitability, a = constant term, b = regression coefficient for the independent variable, X = NPA, e = error term. The data have been analyzed with the help of statistical package Gretl to draw logical conclusion. Initially, while testing the stationary of the original time series data set imported in Gretl through a unit root test (ADF), presence of non stationary has been found in the data set. To make the data set stationary, the first difference of the variables is taken for the purpose of running the Ordinary Least Square model.

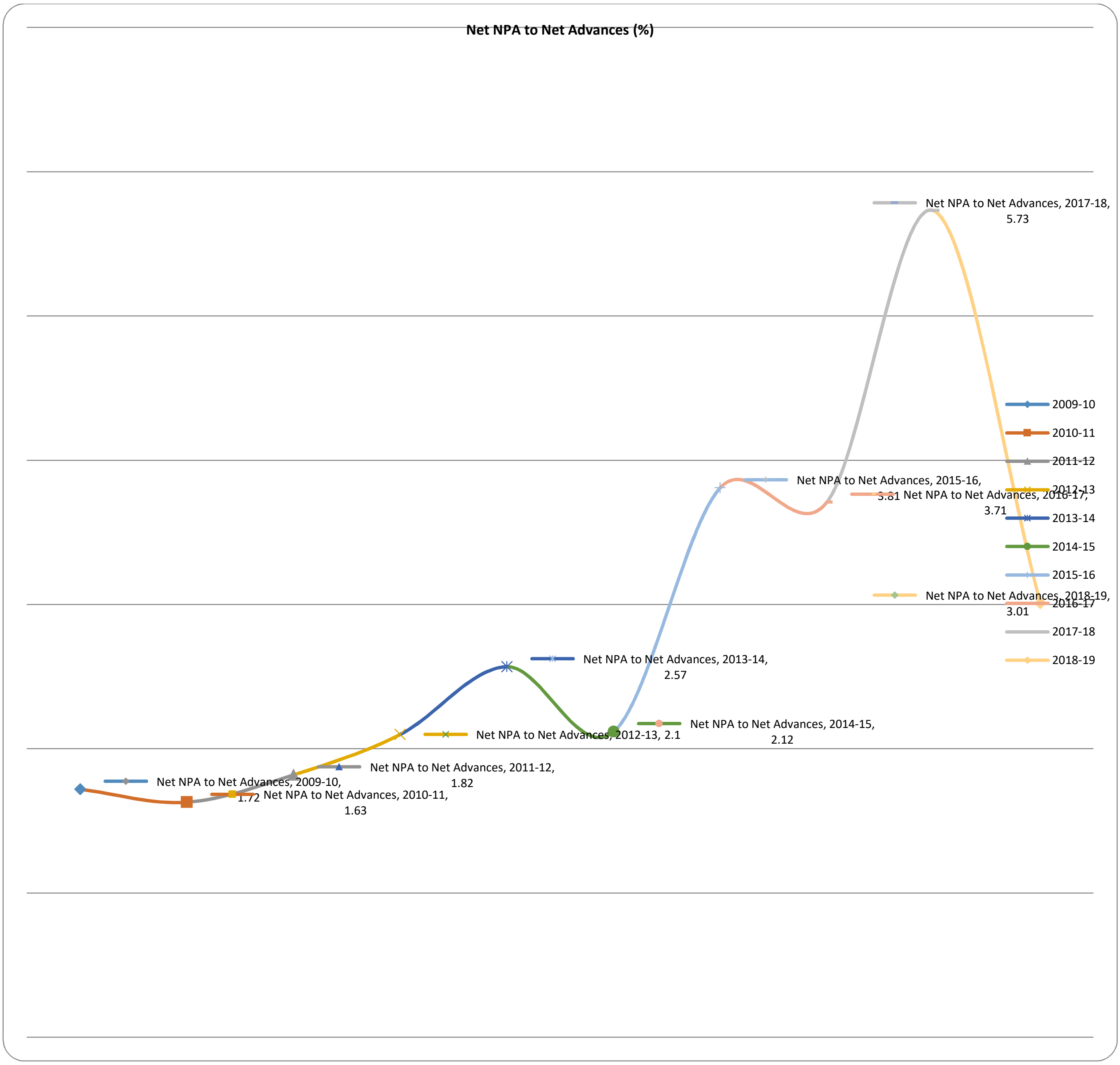
HYPOTHESIS

H_o1: There is no relationship between non-performing asset and net profit margin of SBI
Regression model: NPM= a + b.NPA+ e (IV is NPA & DV is NPM)
H_o2: There is no relationship between non-performing asset and return on assets of SBI
Regression model: ROA= a + b.NPA+ e (IV is NPA & DV is ROA)
H_o3: There is no relationship between non-performing asset and return on equity of SBI
Regression model: ROE= a + b.NPA+ e (IV is NPA & DV is ROE)

DATA ANALYSIS AND DISCUSSION

Trend Analysis: In this section, trends of the NPA has been shown in the following diagram over the last ten years from 2009-10 to 2018-19.

DIAGRAM 1: TRENDS OF NPA OF SBI FROM 2009-10 TO 2018-19



Source: Compiled from the annual reports of SBI of various years.

Interpretation: From above diagram, it has been observed that there was an increasing trend in NPA from 2009-10 to 2013-14. Thereafter a slight decline in 2014-15 then a sharp hike in 2015-16. In 2016-17, there was a quite stability. Again a sharp up clime in 2017-18 and a straight clime down in 2018-19. This final decline has been seen at the bank has been taking some precautionary measures to reduce NPA.

Regression Analysis: In this section, two variable static linear regression model analyses have been done with the help of SPSS to test the hypotheses and their respective results are shown below in the following tables:

Hypothesis Testing - 1

H_o1: There is no relationship between non-performing asset and net profit margin of SBI

Regression model: NPM= a + b.NPA+ e (IV is NPA & DV is NPM)

Model 1: OLS, using observations 2011-2019 (T = 9)

Dependent variable: d_NPM

TABLE 1

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	−0.895209	0.672294	−1.332	0.2247	
d_NPA	**−1.77761**	0.522661	−3.401	**0.0114**	**

TABLE 2

Mean dependent var	−1.150000	S.D. dependent var	3.053498
Sum squared resid	28.12111	S.E. of regression	2.004321
R-squared	**0.622995**	Adjusted R-squared	**0.569137**
F(1, 7)	**11.56739**	P-value(F)	**0.011426**
Log-likelihood	−17.89728	Akaike criterion	39.79456
Schwarz criterion	40.18901	Hannan-Quinn	38.94334
rho	0.035284	Durbin-Watson	**1.812778**
Heteroskedasticity Test: White's test with p-value = **0.131885**			

** Significant at 5%. (Source: Compiled by researcher)

Interpretation: The above tables show that there are two variables, namely, net profit margin (NPM) and NPA. The dependant variable is net profit margin and the NPA is an independent variable. Here NPA is measured as the ratio of net NPA to net advances. The model is NPM = a + b.NPA + e.

In this model, P-Value for beta coefficient of net profit margin is 0.0114 which is significant at 5% significance level. So, the null hypothesis is rejected and the alternative hypothesis is accepted. So, it can be concluded that there is a relation between NPM and NPA. Here, the value of F is 11.56739 which is also significant at 5% significance level. The value of R square is 0.622995 which indicates that the model is a good fit and there is a high correlation between NPM and NPA. But the negative sign of the regression coefficient indicates that there is an inverse relationship between these two variables. The adjusted R square value is 0.569137 which implies that NPA can explain about 57% of the variance in NPM. It is also notable that there is no problem of auto-correlation in the time series data used for the study, as the values obtained by Durbin-Watson test is around one (1.812778). White's test has been done for checking heteroskedasticity. The test result (P- 0.131885) shows that there is no heteroskedasticity in the data set. From the above interpretations, finally, it can be concluded that NPA has a negative impact on net profit margin of SBI.

Hypothesis Testing - 2

H_o2: There is no relationship between non-performing asset and return on assets of SBI

Regression model: ROA= a + b.NPA+ e (IV is NPA & DV is ROA)

Model 2: OLS, using observations 2011-2019 (T = 9)

Dependent variable: d_ROA

TABLE 3

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	−0.0749139	0.0617226	−1.214	0.2642	
d_NPA	**−0.144012**	0.0479850	−3.001	**0.0199**	**

TABLE 4

Mean dependent var	−0.095556	S.D. dependent var	0.260294
Sum squared resid	0.237030	S.E. of regression	0.184015
R-squared	**0.562694**	Adjusted R-squared	**0.500221**
F(1, 7)	**9.007080**	P-value(F)	**0.019909**
Log-likelihood	3.595125	Akaike criterion	−3.190251
Schwarz criterion	−2.795802	Hannan-Quinn	−4.041471
rho	0.046369	Durbin-Watson	**1.814353**
Heteroskedasticity Test: White's test with p-value = **0.556598**			

** Significant at 5%. (Source: Compiled by researcher)

Interpretation: The above tables show that there are two variables, namely, return on asset (ROA) and NPA. The dependant variable is return on asset and NPA is independent variable. Here NPA is measured as the ratio of net NPA to net advances. The model is ROA = a + b.NPA + e.

In this model, P-Value for beta coefficient of return on asset is 0.0199 which is significant at 5% significance level. So, the null hypothesis is rejected and the alternative hypothesis is accepted. So, it can be concluded that there is a relation between ROA and NPA. Here, the value of F is 9.007080 which is also significant at 5% significance level. The value of R squire is 0.562694 which indicates that the model is a good fit and there is a high correlation between ROA and NPA. But the negative sign of the regression coefficient indicates that there is an inverse relationship between these two variables. The adjusted R square value is 0.500221 which implies that NPA can explain around 50% of the variance in ROA. It is also notable that there is no problem of auto-correlation in the time series data used for the study, as the values obtained by Durbin-Watson test is around one (1.814353). White's test has been done for checking heteroskedasticity. The test result (P- 0.556598) shows that there is no heteroskedasticity in the data set. From the above interpretations, finally, it can be concluded that NPA has a negative impact on return on asset of SBI.

Hypothesis Testing - 3

H_o3: There is no relationship between non-performing asset and return on equity of SBI

Regression model: ROE= a + b.NPA+ e (IV is NPA & DV is ROE)

Model 3: OLS, using observations 2011-2019 (T = 9)

Dependent variable: d_ROE

TABLE 5

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	−1.11973	0.987080	−1.134	0.2940	
d_NPA	**−2.69959**	0.767385	−3.518	**0.0098**	***

TABLE 6

Mean dependent var	−1.506667	S.D. dependent var	4.579776
Sum squared resid	60.62046	S.E. of regression	2.942799
R-squared	**0.638723**	Adjusted R-squared	**0.587112**
F(1, 7)	**12.37570**	P-value(F)	**0.009755**
Log-likelihood	−21.35378	Akaike criterion	46.70756
Schwarz criterion	47.10201	Hannan-Quinn	45.85634
rho	0.119424	Durbin-Watson	**1.711036**
Heteroskedasticity Test: White's test with p-value = **0.137560**			

** Significant at 1%. (Source: Compiled by researcher)

Interpretation: The above tables show that there are two variables, namely, return on equity (ROE) and NPA. The dependant variable is return on equity and NPA is independent variable. Here NPA is measured as the ratio of net NPA to net advances. The model is ROE = a + b.NPA + e.

In this model, P-Value for beta coefficient of return on equity is 0.0098 which is significant at 1% significance level. So, the null hypothesis is rejected and the alternative hypothesis is accepted. So, it can be concluded that there is a relation between ROE and NPA. Here, the value of F is 12.37570 which is also significant at 1% significance level. The value of R squire is 0.638723 which indicates that the model is a good fit and there is a high correlation between ROE and NPA. But the negative sign of the regression coefficient indicates that there is an inverse relationship between these two variables. The adjusted R square value is 0.587112 which implies that NPA can explain around 58% of the variance in ROE. It is also notable that there is no problem of auto-correlation in the time series data used for the study, as the values obtained by Durbin-Watson test is around one (1.711036). White's test has been done for checking heteroskedasticity. The test result (P- 0.137560) shows that there is no heteroskedasticity in the data set. From the above interpretations, finally, it can be concluded that NPA has a negative impact on return on equity of SBI.

TABLE 7: SUMMARY OF HYPOTHESIS TESTING AT A GLANCE

Null Hypothesis	P-Value	Decision
H_o1: There is no relationship between non-performing asset and net profit margin of SBI	0.0114	Reject
H_o2: There is no relationship between non-performing asset and return on assets of SBI	0.0199	Reject
H_o3: There is no relationship between non-performing asset and return on equity of SBI	0.0098	Reject

CONCLUSION

From above analysis and interpretations, it can be finally concluded that the growth of non-performing asset of SBI has an upward rising tendency except the very last year of 2018-19. The study also reveals that the NPA has an inverse relationship to profitability of SBI over the last ten years. In all the taken dimensions of profitability (net profit margin, return on asset and return on equity) measurement, it has been observed that the NPA has a negative effect on them. In order to minimize and control over NPA, SBI should formulate more strong recovery and preventive policy. SBI should form an efficient asset management wing, which will be exclusively responsible for managing non-performing and under performing loans to maximize the recovery value. The client assessment procedure should be stronger before lending loans rather than completion of technical paper procedures. The bank should be stricter in "Know Your Customer" norms for identification of borrowers, guarantor and verification of their address to minimize the risk of default in case of housing loans. In case of agricultural loans, a recovery camp should be organized during the harvest season. Continuous monitoring of the bank's borrowers is vital to understand the primary reason of corporate decline and to be able to identify the potential distress situation. It is essential to identify symbols of distress which reduce the borrowers' ability to repay loans. In this way, State bank of India could manage its NPA and maintain a better profitability in future.

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10. Annual Reports from 2009-10 to 2018-19, State Bank of India. (given in below table)

Annual Reports of SBI	Date and time of access	Access link
2009-10	12/5/2020 at 7:11 AM	https://sbi.co.in/documents/17826/35696/1275994607852_12_BALANCESHEET_SBI_GROUP.pdf
2010-11	12/5/2020 at 7:13 AM	https://sbi.co.in/documents/17826/35696/1307544010161_13_2.pdf
2011-12	27/3/2020 at 11:01 PM	https://sbi.co.in/documents/17826/35696/1339769825519_SBI_GROUP_FINANCIALS_AR12.pdf
2012-13	12/5/2020 at 7:09 AM	https://sbi.co.in/documents/17826/35696/1373614553213_SBI_UNABRIDGED_ANNUAL_REPORT_2012_13_ENGLISH.pdf
2013-14	12/5/2020 at 7:03 AM	https://www.sbi.co.in/AR_13-14/
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2015-16	5/2/2020 at 5:43 PM	https://bank.sbi/AR1516/
2016-17	5/2/2020 at 5:42 PM	https://sbi.co.in/AR1617/
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