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Effect of Vital Financial Heads on NPAs of Public and Private Sector Banks

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Abstract

The development of the banking industry is the barometer of economic growth of any economy. The basic function of banks is to lend money in the form of loans to different sectors like agriculture, housing, personal and others to meet the productive use of these funds. This paper aims to assess the effect of each vital financial heads on NPA of public and private sector banks. The present study is empirical in nature based on the annual reports and websites of selected banks for the period 2012-2016. Two public and two private sector banks have been selected for the purpose on the basis of their largest market capitalization. Multiple regression analysis has been used for the purpose of analysis. The findings reveal that the study found insignificant impact of vital financial heads on NPA of public and private sector banks from 2012-2016.

Keywords: *Non-Performing Assets; Total Assets; Total Deposits; Total Advances; Net Interest Income.*

1. INTRODUCTION

Non-performing asset (NPA) is defined as a credit facility in respect of which the interest and / or installment of principal has remained past due for a specified period of time. NPA is a classification used by financial institutions that refer to loans that are in jeopardy of default. Once the borrower has failed to make interest or principal payments for 90 days the loan is considered a non-performing asset. 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. Due to the improvement in the payment and settlement systems, recovery climate, up gradation of technology in the banking system, etc., it was decided to dispense with 'past due' concept, with effect from March 31, 2001.

NPA is one of the foremost and the most formidable problems that have shaken the banking industry in India (Kumar & Singh,

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2012). Accordingly, as from that date, Non-performing asset (NPAs) shall be an advance where interest and /or installment of principal remain overdue for a period of more than 180 days in respect of a Term Loan. The account remains 'out of order' for a period of more than 180 days, in respect of an Overdraft/ Cash Credit (OD/CC).The bill remains overdue for a period of more than 180 days in the case of bills purchased and discounted.Interest and/ or installment of principal remains overdue for two harvest seasons but for a period not exceeding two half years in the case of an advance granted for agricultural purpose.Any amount to be received remains overdue for a period of more than 180 days in respect of other accounts.

A healthy prediction to measure the growth made on the NPA level would seems to look at recovery process without, effective banking system in any country cannot have a healthy economy (Kaur, 2012).NPA arises due to a number of factors or causes like speculation which means investing in high risk assets to earn high income. Another one is default which means wilful default by the borrowers. Further fraudulent practices are those practices like advancing loans to ineligible persons, advance without security or references etc. Next is diversion of funds which states that most of the funds are diverted for unnecessary expansion and diversion of business and rest is internal reasons and external reasons. Many internal reasons like inefficient management, inappropriate technology, labour problems, marketing failure, etc. resulting in poor performance of the companies. External reasons like a recession in the economy, infrastructural problems, price rise, delay in release of approved limits by banks, delays in settlements of payments by governments, natural calamities, Government policies like excise duty change, import duty changes etc.

The present study empirically attempts to analyse the impact of 4 factors i.e. total assets, total deposits, net interest income andtotal advance of public and private sector banks.Total assets meansthe combination amount of a company's fixed assets and current asset as recorded in the company's balance sheet. In other words it refers to the amount of assets owned by the person or entity. Net interest income is the difference between the revenue that is generated from banks assets and the expenses associated with paying out its liabilities. Typical banks assets consist of all forms of personal and commercial loans, mortgages and securities. The liabilities are the customer deposits. Third one is Total Deposits which means money placed into a banking institution for safekeeping. Bank deposits are made to deposit accounts at a banking institution, such asmoney market accounts,savings accounts and checking accounts (Investopedia 2013).

Total advance or simply an advance is the part of a contractually due sum that is paid or received in advance for goods or services, while the balance included in the invoice will only follow the delivery.

2. REVIEW OF LITERATURE

Many published articles are available in the area of non-performing assets and a large number of researchers have studied the issue of NPA in banking industry. A review of the relevant literature has been described as under:

Singh (2016) studied non-performing assets of commercial banks and its recovery in India. This paper aims to know the recovery of NPAs through various channels. Along with this researcher examined the impact of NPAs on banks. Secondary data has been used from 2000 to 2014 for the study through annual reports. Findings reveal that Gross NPA, Net NPA has increased in comparison with previous years.Rao and Patel (2015)examined the aggregate data of NPAs of public, private and foreign sector banks during a period 2009-2013. They used least square regression techniques for gross NPA in 2014, ANOVA test used to judge the significant relationship between Gross NPA to Gross Advances. Findings reveal that percentages of Gross NPA to Gross Advances are higher in foreign banks. In an another study, Mahajan (2014)found out

the trends of Non-performing Assets in Public, Private and Foreign sectors banks of India, along with this objective researcher also made an attempt to make comparative analysis of NPAs of various banks in India. This study is based on time series data for a period of 15years from the year march ended 1999 to march ended 2013. Researcher has used ratio analysis for analyzing the trend of NPAs for all banks in India and Pie chart diagram was used to make comparative analysis of all sectors banks in India. Findings of this paper showed that the current position of NPAs is improving in India. The study found that NPAs having a declining trend over a period of study but NPAs of public sector banks are still higher than private and foreign sector banks.

An analytical study of Ibrahim & Thangavelu (2014) in which they examinedthe composition of NPAs of scheduled commercial banks in India and reviewed the trend of Gross NPAs of public, private and foreign banks of scheduled commercial banks in India. The study was based on secondary data hence researcher collected data through annual reports of selected banks. In order to analyze the data and draw conclusions in this study, various statistical tools like Descriptive Statistics, Linear Regression and ANOVA Single Factor have been done. The study is confined a period of six years i.e., from 2007 to 2012. It is found that there is significant impact of public sector banks' loss assets on all scheduled commercial banks loss assets and it is observed that all Indian Scheduled Commercial Banks' Gross NPAs have been increasing year after year. Jain (2007) explored that in the early stages, the NPAs were mainly contributed by directed lending and significant government intervention. The analytical part of the study evaluated the trend in the movement of NPAs during 1997-2003 and concluded that the root cause of NPAs is the inadequate credit risk management system. The author reiterated that the profitability of banks is invariably related to its alertness, operational efficiency, customer orientation, creation of large volumes of performing assets and attainment of optimum level of productivity.

Ranjan and Dhal (2003) evaluated the effect of terms of credit, bank size induced risk preferences and macroeconomic shocks on NPAs of banks. The study based on panel regression models identified that the terms of credit variables exercise a significant effect on the banks NPAs in the presence of bank size and induced preferences and macroeconomic shocks. With regard to the terms of credit variables, changes in the cost of credit in terms of expectation of higher interest rate induce a rise in NPAs. The study further identified that variables like the horizon of maturity of credit, better credit culture, and favorable macroeconomic and business conditions can lead to lowering NPAs.

A panel regression model was applied by Rajaraman and Vasishtha(2002) on the data available on NPAs of PSBs for a five year period ending 1999-2000. Twenty seven PSBs were taken for the study. The analysis grouped banks with higher than average NPAs into those explained by poor operating efficiency, and those where the operating indicator does not suffice to explain the high level of NPAs, and leaves an unexplained intercept shift. The results of the study explained that two of the three weak banks identified by the Verma Committee, Indian Bank and United Bank of India, fall in this category. The authors concluded that the recapitalization of banks with operational restructuring is not recommended as a mean to manage NPAs in cases where there exists a residual problem even after controlling for operating efficiency.

2.1 Research Gap

By reviewing the prior studies, it is concluded that the primary emphasis of these studies was to evaluate the movement of NPAs and to check effectiveness of various regulatory measures in managing NPAs of banks. Present study made itself different from the literature by taking recent data. The objective of present study is to assess and analyse the effect of vital financial headson NPAs in last 5 years (2012-2016) of selected public and private sector banks.

3. OBJECTIVE OF THE STUDY

- To assess the effect of each vital financial head on NPAs of public and private sector banks.

4. HYPOTHESIS OF THE STUDY

Null Hypotheses:

$\mathbf{H_{01:}}$ Thereis no significant effect of vital financial heads on NPAsof public and private sector banks.

5. RESEARCH METHODOLOGY

5.1 Sources of Data Collection

The paper is focused on empirical analysis of the effect of vital financial heads on NPAs of selected public and private sector banks of India. This study is exploratory in nature. Data is collected from the official website of banks, annual reports, journals, magazines, newspaper etc. The banks selected on the basis of market capitalsation top, two banks from each public and private sector.

5.2 Sample Size

The sample consists of two Public Sector Banks i.e., State Bank of India and Bank of Baroda where as Private Sector Banks includes HDFC Bank and ICICI Bank Ltd.

5.3 Period of the Study

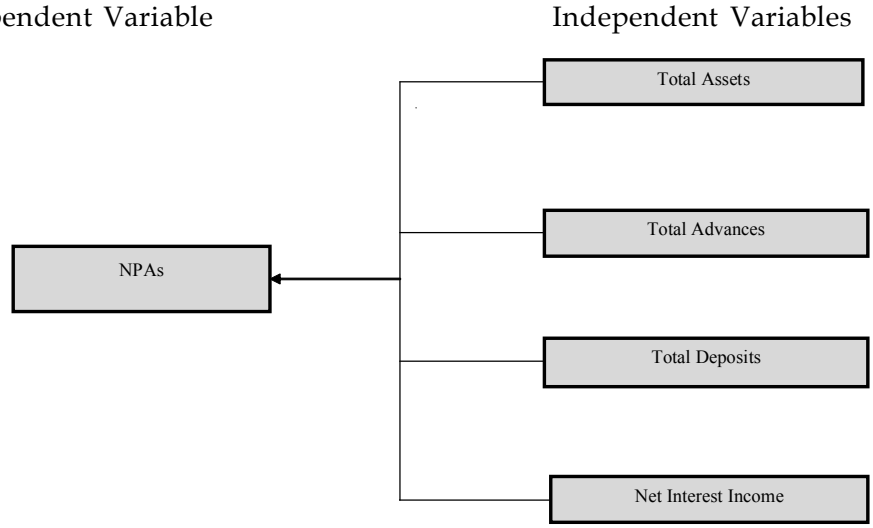
The study is based on secondary data and the data for the period of five years i.e., 2012-2016 were taken to assess the effect of banks performance in context of NPA for selected public and private sector banks.

5.4 Statistical Techniques

Data analyses have been done using Multiple Regression Model and ANOVA statistical tools.

5.5 Conceptual Framework of the Study

Figure 1: Conceptual Framework of the Study



5.6 Model Specification

Y= a+b1x1+b2x2+b3x3+b4x4+µ……. (i) (Public Banks)

Y= a+b1x1+b2x2+b3x3+b4x4+µ……. (ii) (Private Banks)

Where, Y= NPAs (Non-performing Assets),

a= constant term; b1, b2, b3& b4 = Regression coefficients for the variables,

X1 = Total Assets, x2 = Total Advance, x3 = Total Deposit & x4 = Net Interest Income; ì = Error Term.

Here, Y (i.e. NPAs) is the dependent variable, while x1, x2, x3& x4 are independent variables.

6. DATA ANALYSIS

Table 1 shows the monetary values of selected independent variables of public sector banks for the period 2012-16. In the year 2012,the value of total assets of SBI bank was 1,335,519.24 and in 2016, it was 2,259,063.05. In 2016,the value of total assets is very much high in comparison with previous year. In the year 2012 the total advanced are 867,578.89 and it was raise to 1,463,700.42 in 2016 which shows that total advances are continuously increasing like total assets. The value of total deposits in the year 2012 was 1,043,647.36 and in 2016, it was 1,730,722.44 which are again higher in 2016 in comparison with previous years.

Therefore interpretation shows that from 2012 to 2016 there is a constant increase in total assets, total advance, total deposits and net interest income in SBI bank.

Table 1: Selected Vital Financial Heads of Public Sector Banks (` CR.)

Year	SBI				BOB			
	Total Assets	Total Advances	Total Deposits	Net Interest Income	Total Assets	Total Advances	Total Deposits	Net Interest Income
2012	1,335,519.24	867,578.89	1,043,647.36	57,877.84	447,321.46	287,377.29	384,871.11	10,764.15
2013	1,566,261.03	1,045,616.55	1,202,739.57	61,160.23	547,135.44	328,185.76	473,883.34	11,955.65
2014	1,792,234.60	1,209,828.72	1,394,408.51	67,583.39	659,504.53	397,005.81	568,894.39	12,858.46
2015	2,048,079.80	1,300,026.39	1,576,793.24	74,795.70	714,988.55	428,065.14	617,559.52	14,368.36
2016	2,259,063.05	1,463,700.42	1,730,722.44	78,807.48	671,376.48	383,770.18	574,037.87	13,691.55

Sources: www.sbi.co.in, www.bankofbaroda.co.in andwww.moneycontrol.com

Again in Table 1 shows the result of BOB for the year 2012 where total assets are 447,321.46 and in 2016 it was 671,376.48 but in the year 2015 it was 714,988.55 which is very higher among all the years. Similarly in the year 2012 total advances was 383,770.18, but in 2015 again it shows that the total advances are very much high with having 428,065.14 of amount. A total deposit in 2012 was 384,871.11 and 574,037.87 in 2016, in the year 2015 the total deposits was 617,559.52 which very high among all the years. Net interest income is 2015 was very high which was 14,368.36. In 2012 were 10764.15, and in 2016 it were 13,691.55. Therefore we observed that in BOB there was continuous growthof total assets, total advance, total deposit and net interest income from the year 2012 to 2015 and after that it was declining.

Table 2: Selected Vital Financial Heads of Private Sector Banks (in Cr.)

YEAR	HDFC				ICICI			
	Total Assets	Total Advances	Total Deposits	Net Interest Income	Total Assets	Total Advances	Total Deposits	Net Interest Income
2012	337,909.49	195,420.03	246,706.45	13,087.28	473,647.09	253,727.66	255,499.96	12,981.61
2013	400,331.90	239,720.64	296,246.98	16,165.57	536,794.69	290,249.44	292,613.63	16,599.18
2014	491,599.50	303,000.27	367,337.48	19,109.57	594,641.60	338,702.65	331,913.66	19,768.64
2015	590,503.07	365,495.03	450,795.64	23,378.03	646,129.29	387,522.07	361,562.73	22,645.85
2016	708,845.57	464,593.96	546,424.19	29,091.99	717,877.63	435,263.94	421,425.71	25,297.24

Source: www.hdfc.co.in:www.icicibank.co.and www.moneycontrol.com

Table 2 shows the monetary values of selected independent variables of private sector banks for the period 2012-16. The value of total assets of HDFC bank was 337,909.49 and it rose to 708,845.57 in 2016 which was more in 2016. Similarly, total advances of year 2012 was 195,420.03 which further increased to 464,593.96 again which was very much high in comparison with previous year. Likewise total deposits in the year 2012 were 246,706.95 which were increased in 2016 to 546,424.19. The last variable net interest income in 2012 was 13,087.28 which increased to 29,091.41 in 2016.In ICICI bank the total assets are 473,647.09 in the year 2012 whereas it increased to 717,877.63 in the year 2016. The total assets in the year 2016 noticed very high as comparison with previous years. Similarly, total advances in 2012 were 253,727.66 and in 2016 it was 435,263.94which was very high. Like-wisetotal deposits in 2012 were 255,499.96 whereas in 2016 it was noticed 421,425.71 which were again very high. In the last net interest income was 12,981.61 in 2012 and in 2016 it was noticed 25,297.24 which wereagain very high in comparison with previous years.

Therefore, it is observed that in private sector banks the total assets, total advances, total deposits and net interest income have growing trend over the period of the study.

Table 3: NPAs of Public and Private Sector Banks (in Cr.)

YEAR	SBI	BOB	HDFC	ICICI
2012	15,818.85	1,543.64	352.33	1,860.84
2013	21,956.48	4,192.02	468.95	2,230.56
2014	31,096.07	6,034.76	820.03	3,297.96
2015	27,590.58	8,069.49	896.28	6,255.53
2016	55,807.02	19,406.46	1,320.37	12,963.08

Source: Author's Calculations

Table 3 depicts the NPAs of public and private sector banks for the period 2012-2016. In 2012 the NPAs of SBI bank was 15,818.85 and in 2016, it was 55,807.02 and a tremendous increase in NPAs has found from 2012 to 2016. In BOB bank NPAs was 1,543.64 in 2012 and in 2016, it was 19,406.46. 2016 which show a continuous increase during 2012 to 2016 and shows higher NPAs in this year among all the years. It isfound that in public sector banks the NPAs is increasing over the period of the study.

In 2012, NPAs of HDFC bank was 352.33 and in 2016 it was 1,320.37 which are higher among allthe years. ICICI bank NPAs was 1,860.84 in 2012 and 12,963.08 in 2016 and again it is higher in comparison with previous years.

From the analysis of the table 3, we can observe that NPAs of public sector banks has increased over the period of 2012-2016 and it is higher in the year 2016.

7. FINDINGS

Table 4 depicts the descriptive statistics of selected dependent and independent variables. It shows the mean values, minimum, maximum, standard deviation of selected variables for the period 2012-2016 of public banks. In this sector Total Assets is ranked first with mean score 1,204,148.42 and minimum 44,732.46 and maximum 2,259,063.06. Total Deposits is ranked second with mean score 956,755.74 and minimum 384,871.11 and maximum 1,730,722.44. Total advanced and Net Interest Income are third and fourth with mean score 771,115.51 and 40,386.28 and minimum 287,377.29 and 10,764.15 and maximum 1,463,700.42 and 78,807.48 respectively. NPA is ranked fifth with mean score 19,151.54 and minimum 1,543.64 and 55,807.02 maximum.

Maximum variations have found in Total Assets as revealed by the standard deviation 678520.26 and maximum consistency is found in the NPA with standard deviation 16347.75.The value of Z score of the skewness are 1.244/.687=1.81, .392/.687=0.57, .344/.687=0.50, .396/.687=0.58 and .134/.687=0.19. It shows the distribution of all the variables score is positively skewed (Z score >2 Hair et. Al., 2009). Whereas the values of Z score of Kurtosis are 1.839/1.334=1.38, -1.638/1.334=-1.23, -1.822/1.334=-1.37, -1.58/1.334=-1.19 and -2.288/1.334=-1.72. It shows that platykurtic distribution for all the variables.

In case of private sector banks, shows the descriptive statistics of all the variables for the year 2012 to 2016. First rank is again attained by Total Assets with mean 549,827.98 and minimum 337,909 and 717,878 maximum. Total Deposits is ranked second and Total Advance is ranked third. Fourth rank is attained by Net Interest Income with mean score 19,812.50 and NPA is ranked fifth with mean 3,046.59 and minimum 352.33 and maximum 12,963.08. Maximum variability has found in Total Assets with standard deviation 126089.29. However highest consistency is observed in NPA with standard deviation 3904.89. Thevalue of Z score of the skewness is 2.200/.687=3.20, -.255/.687=-0.37, .143/.687=0.21, .828/.687=1.21 and .305/.687=0.44. It shows the distribution of TD, TAD and NII score is positively skewed, NPA score is symmetric (Z score < 2) and TA score is negative skewed. Whereas the value of Z scores of kurtosis are 4.982/1.33=3.74, -.807/.334=-0.61, -.918/1.334=-0.69, .276/1.334=0.21 and -.733/1.334=-0.55 respectively. It shows that the all variables score distribution is platykurtic distribution except NPA.

Table 4: Descriptive Statistics of Public and Private Banks (in CR.)

Public Banks	Variables	Mean	Min.	Max.	Std.Dev.	Skewness	Std. Error	Kurtosis	Std. Error
	NPA	19151.5370	1543.64	55807.02	16347.74885	1.244	.687	1.839	1.334
	TA	1204148.4180	447321.46	2259063.05	678520.25509	.392	.687	-1.638	1.334
	TAD	771115.5150	287377.29	1463700.42	456364.05051	.344	.687	-1.822	1.334
	TD	956755.7350	384871.11	1730722.44	496123.90418	.396	.687	-1.581	1.334
	NII	40386.2810	10764.15	78807.48	29759.18945	.134	.687	-2.288	1.334
Private Banks	NPA	3046.5930	352.33	12963.08	3904.89248	2.200	.687	4.982	1.334
	TA	549827.98	337909	717878	126089.219	-.255	.687	-.807	1.334
	TAD	327369.5690	195420.03	464593.96	87024.87175	.143	.687	-.918	1.334
	TD	357052.6430	246706.45	546424.19	94216.21473	.828	.687	.276	1.334
	NII	19812.4960	12981.61	29091.99	5301.39797	.305	.687	-.733	1.334

Source: Authors

Table 5 shows the value of coefficient of correlation (R) is .933, which indicates that there is a strong relationship between independent variables and dependent variable of public banks. The adjusted R Square value is .870, which means that 87% variations of the dependent variable (NPAs) are due to the independent Variables. In case of private banks, the value of coefficient of correlation (R) is .861, which indicates that there is a strong relationship between independent variables and dependent variable. The adjusted R Square value is .741, which means that 74% variations of the dependent variable (NPAs) are due to the independent Variables (Dhar & Bakshi, 2015; Singh 2015; Kumar & Ghani, 2015; Rajput, Gupta & Chauhan, 2012).

Table 5: Model Summary and ANOVA

Measures	R	R Square	Adjusted R Square	F value	P value	Durbin-Watson
Public Banks	.933	.870	.767	8.388	.019	2.393
Private Banks	.861	.741	.533	3.570	.098	1.823

Dependent Variable: Non-Performing Assets

Predictors: (Constant), Net Interest Income, Total Deposits, Total Assets, Total Advance

R Square (Coefficient of determination) of public banks is .870 and private banks are .741, which shows highest percentage value that the independent variables 87% and 74 % change of NPAs. Model summary suggests that % of the principle variable (DV) measured outcome i.e. Non-performing assets can be accounted by the model. The amount of shrinkage to this model is applied to another sample or amount of predictive loss are .103and .208 (R square – Adjusted R^2). The value of F statistic of public and private banks is 8.39 and 3.57 and the significant value of public banks (P- value) isless than 0.05 which shows that the variations are statistically significant.

The value of Durbin-Watson of public and private banks, indicates that 2.393 and 1.823 (as a rule of thumb values of $1.5 < d < 2.5$ specifies that there is no auto-correlation in the data).

Table 6: Multiple Regression Analysis for Model 1 and 2

Model 1 and 2		Unstandardized Coefficients			T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
Public Banks	(Constant)	-8334.739	19252.796		-.433	.683		
	TA	.128	.259	5.317	.495	.642	.000	4456.958
	TAD	.034	.125	.954	.273	.796	.002	470.031
	TD	-.117	.300	-3.536	-.389	.713	.000	3188.303
	NII	-1.032	.703	-1.878	-1.468	.202	.016	63.105
Private Banks	(Constant)	2294.392	8690.798		.264	.802		
	TA	-.045	.077	-1.465	-.587	.583	.008	120.048
	TAD	.160	.188	3.574	.853	.432	.003	338.144
	TD	-.090	.042	-2.175	-2.126	.087	.050	20.180
	NII	.272	1.544	.369	.176	.867	.012	84.669

* Dependent Variable: NPA

Raw Regression Equation (i) and (ii) fitted was:

$NPA = (-8334.739) + .128(X_{TA}) + .034(X_{TAD}) - .117(X_{TD}) - 1.032 (X_{NII}) + \mu$..... (i)

$NPA = (2294.392) - .045(X_{TA}) + .160(X_{TAD}) - .090(X_{TD}) + .272(X_{NII}) + \mu$..... (ii)

Table 6 shows the results of regression of public banks for equation (i). It shows the coefficients of all the independent variables of equation (i) by using NPA as dependent variable. The analysis shows positive coefficients of independent variables Total Assets (TA) and Total Advance (TAD) which indicates that these variables have positive impact on public banks. However negative coefficients of Total Deposit (TD) and Net Interest Income (NII) indicate that these vital financial heads have negative impact of public banks. Again in table 6 shows the results of regression of private banks for equation (ii) from 2012 to 2016. The analysis shows positive coefficients of independent variables TAD and NII which indicate that these variables have positive impact on NPA of private banks. However a negative coefficient of TA and TD indicates that these independent variables have negative impact on NPA.

The study found the positive impact of TA and TAD and negative impact of TD and NII on NPA of public banks. In private banks TAD and NII have positive impact and TA and TD have negative impact on NPA.

Finally the study found insignificant impact of vital financial heads on NPA of public and private sector banks from 2012-2016.

8. LIMITATIONS OF THE STUDY

The study covered only two sectors i.e., public and private sector banks. The sample size of bank is very small and the studies limited to only four variables i.e., total assets, total advance, total deposits and net interest income.

9. CONCLUSION

Non-performing assets represent the actual economic cost to the banking system in India and are obliged to handle efficiently to release the blocked capital. In this study data has been analysed through Multiple Regression Model and this model was used to examine the effect of vital financial heads on Non Performing Assets of selected public and private banks. This study shows that if there is an increase all the selected independent variables like (Total Assets, Total Advance, Total Deposit and Net Interest Income) of public and private banks then there is no impact on NPA. Thus the study builds some important implications to banks for useful management of NPA. In this study only four banks were taken as representatives. The present study was determined on only four factors related with vital financial heads. Macro economics factors influence more to the bank performance so for future research such factors can also be carried out for studied.

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