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Non Performing Assets and Profitability: A Study of Public, Private and Foreign Sector Banks in India

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ABSTRACT

Strong banking sector is one of the most significant prerequisite of strong economy because it channels the savings into the investment. A fragile banking sector will ultimately give way to the fragile economy. In the account books of banks, the deposits made by public are categorized as liabilities while the loans and advances made by the banks to its customers are categorized as assets. According to RBI those assets on which the installments of interest or principle or both remain overdue for a period of 90 days of more are classified as Non-Performing Assets (NPAs). In other words, those assets of banks which have stopped performing are NPAs. Today, the Indian banking industry is dealing with the mammoth amount of NPAs which is fifth largest in the world. Once a bank started incurring losses and if the fundamentals are not corrected, the problem may become chronic and destabilize the confidence of the depositors. Once the depositors start withdrawing their money from the banks, the banking system will collapse. It is because of this reason that NPAs must always remain within the sustainable limit and the current level of NPAs is threatening the stability. The increasing NPAs not only reduce the profitability of banks but also affect its credibility. The present study attempts to judge the impact of NPA on the public, private and foreign banks operating in India. Period of 12 years from 2005 to 2017 was selected to study the trend of NPAs and Profitability. “Correlation Analysis” and “Regression Technique” has been used to measure the relationship and the impact of NPAs on the profitability of the Indian Banks.

Keywords: Advances; Return on Assets (ROA); Gross NPAs; Net NPAs

INTRODUCTION

A nonperforming asset (NPA) refers to a classification for loans or advances that are in default or are in arrears on scheduled payments of principal or interest. In most cases, debt is classified as nonperforming when loan payments have not been made for a period of 90 days. While 90 days of nonpayment is the standard, the amount of elapsed time may be shorter or longer depending on the terms and conditions of each loan. Escalating NPAs require a bank to make higher provisions for losses in their books. The banks set aside more funds to pay for anticipated future losses; and this, along with several structural issues, leads to low profitability. Profitability of a bank is measured by its Return on Assets (ROA), which is the ratio of the bank's net profits to its net assets. Banks have witnessed a decline in their profitability in the last few years, making them vulnerable to adverse economic shocks and consequently putting consumer deposits at risk.

Types of Nonperforming Assets

Although the most common nonperforming assets are term loans, there are six other ways loans and advances are NPAs:

- Overdraft and cash credit (OD/CC) accounts left out-of-order for more than 90 days
- Agricultural advances whose interest or principal installment payments remain overdue for two crop/harvest seasons for short duration crops or overdue one crop season for long duration crops
- Bill overdue for more than 90 days for bills purchased and discounted
- Expected payment is overdue for more than 90 days in respect of other accounts
- Non-submission of stock statements for 3 consecutive quarters in case of cash-credit facility
- No activity in the cash credit, overdraft, EPC, or PCFC account for more than 91 days

CLASSIFICATION OF NPA:

Banks are required to classify NPAs further into Substandard, Doubtful and Loss assets. *1.* Substandard assets: Assets which has remained NPA for a period less than or equal to 12 months. 2. Doubtful assets: Assets would be classified as doubtful if it has remained in the substandard category for a period of 12 months. *3. Loss assets:* As per RBI, "Loss asset is considered uncollectible and of such little value that its continuance as a bankable asset is not warranted, although there may be some salvage or recovery value."

GROSS AND NET NPA

1. Gross non-performing assets refer to the sum of all the loans that have been defaulted by the borrowers within the provided period of ninety days while net non-performing assets are the amount that results after deducting provision for unpaid debts from gross NPA.
2. The gross non-performing asset does not amount to the actual loss of the organization because the provision for unpaid debts has not been deducted, but net non-performing assets amount to

the actual loss of the organization because the provision for unpaid loans has already been deducted.

3. Gross non-performing assets lead to a bad effect on company goodwill and bad effects on the equity value of the organisation while net non-performing assets lead to low profitability and liquidity in the company cash reserves.

The measures taken to resolve and prevent NPAs can broadly be classified into two kinds – first, regulatory means of resolving NPAs per various laws (like the Insolvency and Bankruptcy Code), and second, remedial measures for banks prescribed and regulated by the RBI for internal restructuring of stressed assets.

The Insolvency and Bankruptcy Code (IBC) was enacted in May 2016 to provide a time-bound 180-day recovery process for insolvent accounts (where the borrowers are unable to pay their dues). Under the IBC, the creditors of these insolvent accounts, presided over by an insolvency professional, decide whether to restructure the loan, or to sell the defaulter’s assets to recover the outstanding amount. If a timely decision is not arrived at, the defaulter’s assets are liquidated. Proceedings under the IBC are adjudicated by the Debt Recovery Tribunal for personal insolvencies, and the National Company Law Tribunal (NCLT) for corporate insolvencies. 701 cases have been registered and 176 cases have been resolved as of March 2018 under the IBC.

REVIEWS OF LITERATURE

Gaba & Kumar, 2018 attempted to judge the impact of NPA’S of the private sector banks of India on their profitability. The NPA data from 2001 to 2016 was collected for the study. The financial performance of the banks was analyzed by using financial ratios. The NPA and profitability statistical analysis was done by using the Pearson’s coefficient of correlation and Regression technique through SPSS. The study concluded a negative relationship between NPAs and ROA.

Goyal & Bhati, 2017 attempts to understand the impact of macroeconomic and bank specific variables on NPA of India PSU Banks. GDP at factor cost and Exchange rate as macroeconomic variables and Net Advances, Total Deposits and Reserve & Surplus were selected as banks specific variables for the study. The author used statistical tools bivariate correlation and linear regression for the study and concluded that macroeconomic and bank specific variables have a positive impact on NPA.

Dhara K, 2017 attempts to analyze the relationship between profitability and NPA of five private sector banks Kotak Mahindra bank, ICICI Bank, Axis bank, Dena bank, and Yes bank for a period of five years from 2013 to 2017.The author applies descriptive statistics and to test the significant of the relationship applied the students T- test and concluded that NPA has a huge impact o the profitability of the banks.

Chellasamy & Angelin Prema, 2018 endeavors to determine the impact of NPA on the profitability performance of the selected private and public sector banks. On the basis of purposive sampling methods and market capitalization five banks were selected for the study for a period of five years. Correlation and regression analysis was applied to determine the impact of NPA on profitability. It was found that there is a significant impact of NPA on the net profits in the selected public sector banks in the study period.

Kiran & Jones, 2016 evaluates the effect of nonperforming assets on the profitability of the public sector banks. For the study SBI and 5 nationalized banks were selected for a term of 10 years. The statistical tools of correlation and regression were applied for the study. The study concluded that except state Bank of India all the other banks show a negative correlation between Non Performing Assets and Net Profits.

Yadav, 2017 analyzed the impact of non-performing assets on profitability of the public sector banks at the aggregate and the sectoral level. This study is based on the secondary data for a period of 1994 to 2006 for the indices of profits, NPA, credit-deposits ratio, fixed –deposits ratio, operating expenses, provisions and contingencies of 27 public sector banks. To study the impact the statistical tool simple linear regression function was applied. Statistically result revealed that the present level of non-performing assets in public sector banks affects fifty percent profitability of the banks and its impact has gone to increase at very large extent when it works with other strategic banking variables.

OBJECTIVES OF THE STUDY

The objectives of the study were as follows:

- To analyze and interpret trend of NPAs in the private, public and foreign banks in India from the year 2005 to 2017.
- To scrutinize the impact of Gross & Net NPA Ratio on the profitability (ROA) of Public sector banks.
- To examine the impact of Gross & Net NPA Ratio on the profitability (ROA) of private sector banks.

- To study the impact of Gross & Net NPA Ratio on the profitability (ROA) of foreign sector banks operating In India.

RESEARCH METHODOLOGY

The study was conducted in the context of Private, Public and Foreign Banks. The data was collected for the period of 2005 to 2017 to analyze and interpret the impact of private, public and foreign banks Gross & Net NPA Ratio on the profitability on the banks. The database of Reserve Bank of India, RBI Publications, Annual Reports of RBI, Trend and Progress of Banking in India were used as a source of data for the purpose of analysis. “Correlation Analysis” and “Regression Technique” has been used to measure the relationship and the impact of NPAs on the profitability of the Indian Banks.

Gross NPA to Gross Advances ratio also referred as “Gross NPA Ratio”, Net NPA to Net Advances ratio referred “Net NPA ratio” and Return on Assets (ROA) as a measure of profitability of private sector banks. Profitability measure has been used as a dependent variable while the measures of NPAs have been used as independent variable in the regression model.

Regression model was formed as follows:

$Y = \alpha + \beta . X1 + \varepsilon$ $Y = \alpha + \beta . X2 + \varepsilon$

Y=ROA

X1=Gross NPA Ratio

X2= Net NPA Ratio

Here, ROA is dependent variable and Gross NPA and Net NPA ratio are the Independent variable.

HYPOTHESES

The following hypotheses are formulated for the current study:

H01: There is no relationship between the NPA & GPA ratio and Return on Assets (ROA) on profitability (ROA) of Public sector banks.

H02: There is no relationship between the NPA & GPA ratio and Return on Assets (ROA) on profitability (ROA) of Private sector banks.

H02: There is no relationship between the NPA & GPA ratio and Return on Assets (ROA) on profitability (ROA) of foreign sector banks in India.

ANALYSIS AND INTERPRETATION

a) Trends of Gross and Net NPAs in the study Period (From 2005-06 to 2016-17)

Nonperforming Assets (NPAs) have been defined as the loans or the advances in respect of which payment of interest or principal or both have remained unpaid as per agreed terms of the loan contract for more than 90 days.

Table -01 Gross and Net NPAs of Private Sector Banks (Amount in ` Billion)

Year	Gross Advances	Gross NPAs	Gross NPA Ratio	Net Advances	Net NPAs	Net NPA Ratio
2005-06	3151.01	75.99	2.41%	3129.62	31.70	1.01%
2006-07	4182.41	91.45	2.19%	4147.51	40.28	0.97%
2007-08	5236.99	129.22	2.47%	5184.02	56.47	1.09%
2008-09	5751.67	167.87	2.92%	5753.28	74.12	1.29%
2009-10	5795.35	173.07	2.99%	6324.41	65.06	1.03%
2010-11	7232.05	179.05	2.48%	7975.44	44.32	0.56%
2011-12	8716.41	182.10	2.09%	9664.03	44.01	0.46%
2012-13	11512.46	203.82	1.77%	11432.40	59.94	0.52%
2013-14	13602.53	241.84	1.78%	13429.35	88.62	0.66%
2014-15	16073.39	336.90	2.10%	15843.12	141.28	0.89%
2015-16	19726.59	558.53	2.83%	19393.39	266.77	1.38%

Source: RBI Publications ratios own computation.

Over the years non-performing assets of the Indian private sector banks are increasing. As exhibited in Table-1 and graphical representation of Graph-1, the Gross NPA ratio has increased from 2.41% in 2005-06 to 4.05% in 2016-17, were as the Net NPA ratio has also increased from 1.01% from 2005-06 to 2.15% in 2016-17.

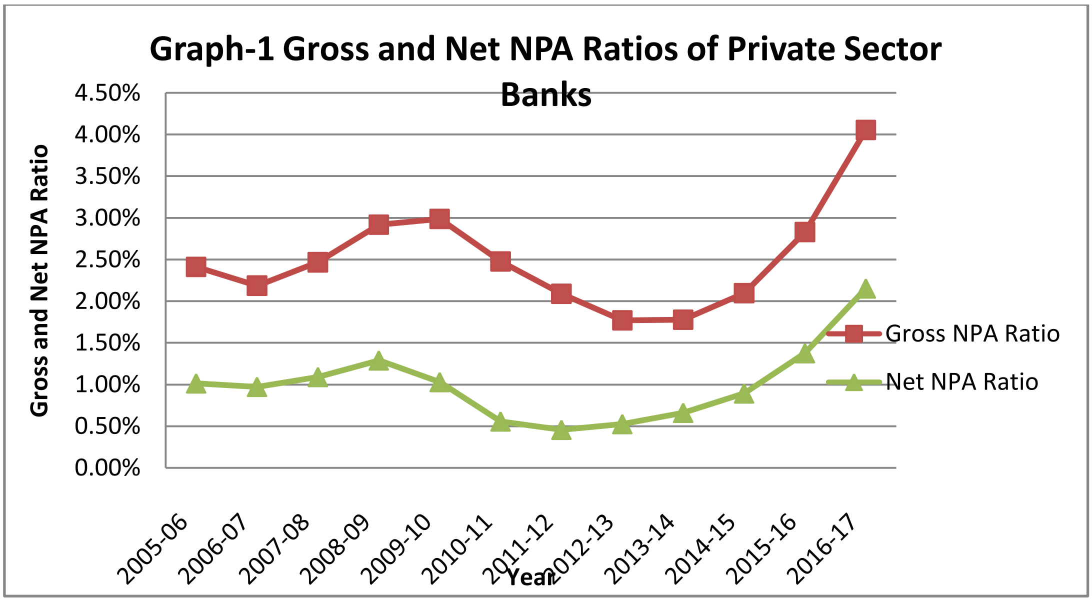


Table -2 Gross and Net NPAs of Public Sector Banks (Amount in ` Billion)

Year	Gross Advances	Gross NPAs	Gross NPA	Net Advances	Net NPAs	Net NPA Ratio
2005-06	11347.24	421.17	3.71%	11062.88	145.66	1.32%
2006-07	14644.93	389.68	2.66%	14401.46	153.25	1.06%
2007-08	18190.74	406.00	2.23%	17974.01	178.36	0.99%
2008-09	22834.73	459.18	2.01%	22592.12	211.55	0.94%
2009-10	25193.31	573.01	2.27%	27013.00	296.43	1.10%
2010-11	30798.04	710.42	2.31%	33044.33	360.55	1.09%
2011-12	35503.89	1124.88	3.17%	38773.08	593.91	1.53%
2012-13	45601.69	1644.61	3.61%	44728.45	900.37	2.01%
2013-14	52159.20	2272.64	4.36%	51011.37	1306.35	2.56%
2014-15	56167.18	2784.68	4.96%	54762.50	1599.51	2.92%
2015-16	58219.52	5399.56	9.27%	55935.77	3203.76	5.73%
2016-17	58663.73	6847.33	11.67%	55572.32	3830.89	6.89%

Source: RBI Publications and ratios own computation.

Over the years non-performing assets of the Indian public sector banks are increasing. As exhibited in Table-2 and graphical representation of Graph-2 the Gross NPA ratio has increased from 3.71% in 2005-06 to 11.67% in 2016-17, were as the Net NPA ratio has also increased from 1.32% from 2005-06 to 6.89 % in 2016-17.

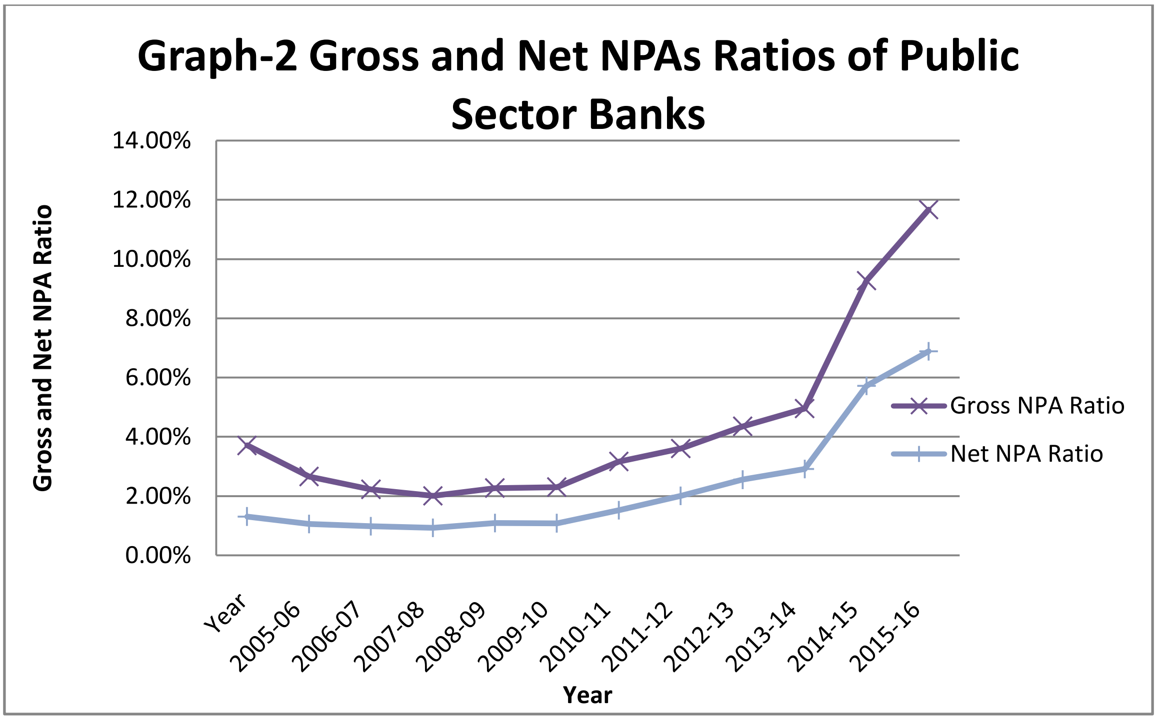


Table-3 Gross and Net NPAs of Foreign Banks in India (Amount in ` Billion)						
Year	Gross Advances	Gross NPAs	Gross NPA Ratio	Net Advances	Net NPAs	Net NPA Ratio
2005-06	959.05	20.37	2.12%	975.62	8.08	0.83%
2006-07	1246.77	23.99	1.92%	1263.39	9.27	0.73%
2007-08	1606.58	30.84	1.92%	1611.33	12.47	0.77%
2008-09	1660.12	72.49	4.37%	1653.85	29.96	1.81%
2009-10	1632.13	71.11	4.36%	1632.60	29.77	1.82%
2010-11	1929.72	50.45	2.61%	1955.11	13.13	0.67%
2011-12	2267.77	62.97	2.78%	2298.49	14.12	0.61%
2012-13	2604.05	79.25	3.04%	2636.80	26.63	1.01%
2013-14	2995.76	115.65	3.86%	2911.42	31.60	1.09%
2014-15	3366.09	107.61	3.20%	3275.99	17.62	0.54%
2015-16	3765.04	157.98	4.20%	3635.51	27.67	0.76%
2016-17	3436.11	136.21	3.96%	3323.35	21.41	0.64%

Source: RBI Publications ratios own computation.

Over the years non-performing assets of the Indian foreign sector banks are increasing. As exhibited in Table-3 and graphical representation of Graph-3 the Gross NPA ratio has increased from 2.12% in 2005-06 to 3.96 % in 2016-17, were as the Net NPA ratio has also reduced from 0.83 % from 2005-06 to 0.64 % in 2016-17.

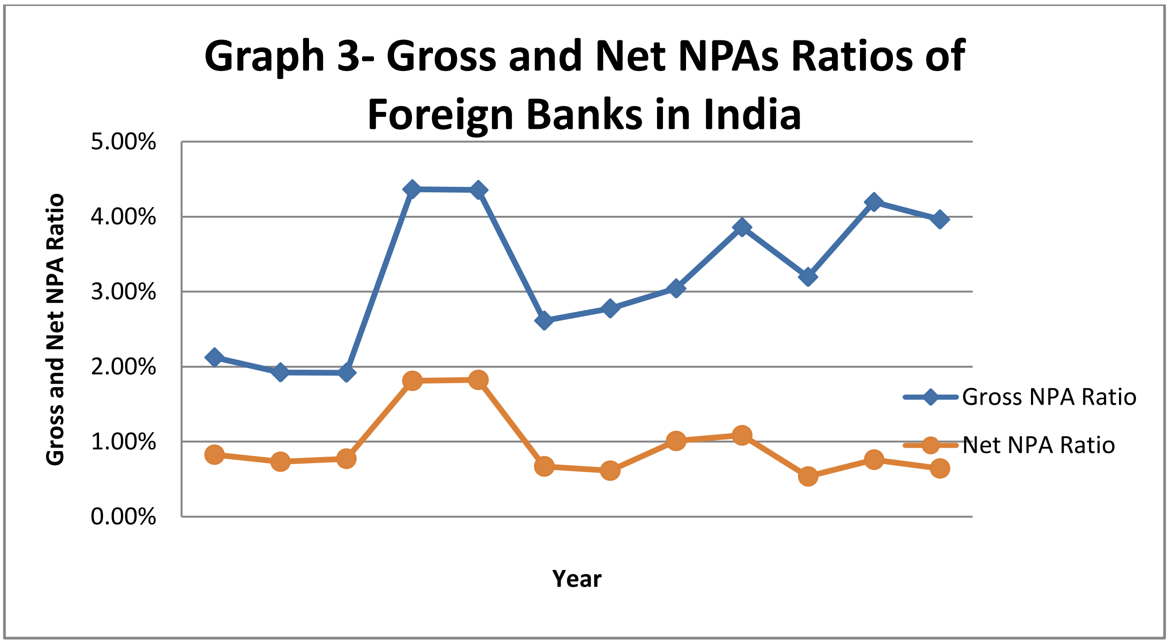
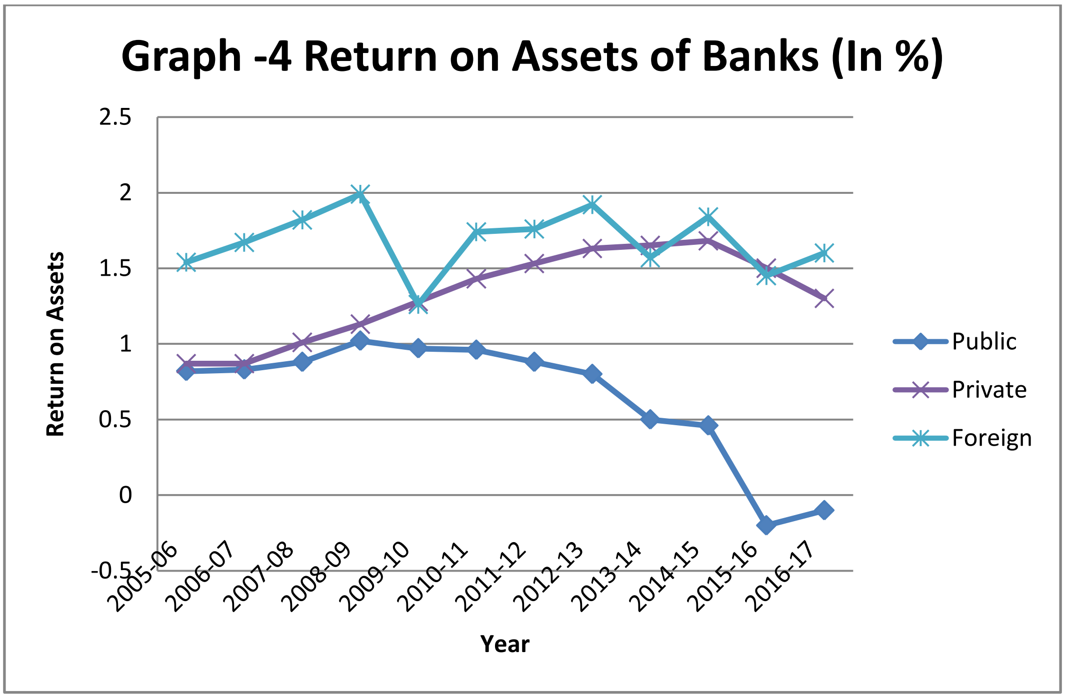


Table -4 Return on Assets of Banks (In %)			
Year	**Public**	**Private**	**Foreign**
2005-06	**0.82**	**0.87**	1.54
2006-07	**0.83**	**0.87**	1.67
2007-08	**0.88**	**1.01**	1.82
2008-09	**1.02**	**1.13**	1.99
2009-10	**0.97**	**1.28**	1.26
2010-11	**0.96**	**1.43**	1.74
2011-12	**0.88**	**1.53**	1.76
2012-13	**0.8**	**1.63**	1.92
2013-14	**0.5**	**1.65**	1.57
2014-15	**0.46**	**1.68**	1.84
2015-16	**-0.2**	**1.5**	1.45
2016-17	**-0.1**	**1.3**	1.6

Source: Trend and Progress of Banking in India, RBI Publications



Return on assets (ROA) is an indicator of efficiency with which banks deploy their assets. As exhibited in Table-4 and graphical representation of Graph-4 the Return on Assets of the private sector Banks increased from 0.87% to 1.3%. The Return on Assets of the public sector Banks reduced from 0.82% to -0.1 %. The Return on Assets of the foreign sector Banks in India reduced from 1.54 % to 1.6 %.Foreign banks continued to show the highest returns on assets.

b) Relationship between NPAs and the profitability of Banks

To interpret the relationship between NPAs and profitability of the Banks Karl Pearson's Coefficient of correlation has been calculated. The relationship between Gross NPA ratio and Net NPA ratio with the ROA is as follows:

Results of correlation Analysis are as under:

Table-5 Correlation between Gross and Net NPAs Ratio of Public, Private and Foreign Banks.

Variables	Correlation		
	Public	Private	Foreign
Gross NPA Ratio with the ROA	-0.95958705	-0.280147125	-0.28404781
Net NPA Ratio with ROA	-0.970444353	-0.324263034	-0.14701155

Analysis of the collected data reveals a high degree of correlation between Gross NPA ratio and ROA as well as Net NPA ratio and ROA. Table 5 reveals a very high degree negative correlation in the public sector banks, private and foreign banks show a low degree negative correlation. An inverse relationship indicates that if non-performing assets are contained, profits of the banks will increase and vice-versa.

Further regression analysis was also performed, the results of which can be summarized as under:

Table-6 Model Summary : ANOVA (F) Results and Coefficients for Public Sector Banks

Model : Dependent Variable (ROA)	*Coefficients*	*Standard Error*	*t Stat*	*P-value*
Intercept	1.21731516	0.063126019	19.283889	0.00
Gross NPA Ratio	-12.9952319	1.20515307	-10.783055	0.00
Model Summary	R= 0.96 , R Square = 0.92 , F Value = 0.00			

Model : Dependent Variable (ROA)	*Coefficients*	*Standard Error*	*t Stat*	*P-value*
Intercept	1.126580874	0.047974829	23.4827494	0.00
Net NPA Ratio	-20.2482506	1.592279089	-12.716521	0.00
Model Summary	R= 0.97 , R Square = 0.94 , F Value = 0.00			

Table-7 Model Summary : ANOVA (F) Results and Coefficients for Public Sector Banks

Interpretation: The above analysis (Table 6 & 7) shows the result of the regression analysis between the Return on Assets (ROA) as dependent variable and Gross NPA Ratio & Net NPA Ratio as independent variable for public sector banks. The value of R square is 0.92 and 0.94 which indicated 92% and 94% of the variance in ROA is caused due to Gross and Net NPA of the public sector banks respectively. This emphasizes that the NPA has an impact on the profitability of the public sector banks. The negative sign of the regression coefficient i.e. Beta indicates a negative relation between ROA and NPA. This concludes that profitability and NPA have an inverse relationship. Any increase in the amount of NPA will cause reduction in the profits of the banks and vice-versa. Thus H01: There is no relationship between the NPA & GPA ratio and Return on Assets (ROA) on profitability (ROA) of Public sector banks is rejected.

Table-8 Model Summary : ANOVA (F) Results and Coefficients for Private Sector Banks

Model : Dependent Variable (ROA)	*Coefficients*	*Standard Error*	*t Stat*	*P-value*
Intercept	1.65037471	0.364656321	4.525836007	0.001098417
Gross NPA Ratio	-13.0528475	14.14395635	-0.922856884	0.377810771
Model Summary	R= 0.28, R Square = 0.078 , F Value = 0.377			

Table-9 Model Summary : ANOVA (F) Results and Coefficients for Private Sector Banks

Model : Dependent Variable (ROA)	*Coefficients*	*Standard Error*	*t Stat*	*P-value*
Intercept	1.528315661	0.207207874	7.375760525	0.00
Net NPA Ratio	-20.48847933	18.90115095	-1.083980515	0.303815919
Model Summary	R= 0.32, R Square = 0.105 , F Value = 0.303			

Interpretation: The above analysis (Table 8 & 9) shows the result of the regression analysis between the Return on Assets (ROA) as dependent variable and Gross NPA Ratio & Net NPA Ratio as independent variable for private sector banks. The value of R square is 0.078 and 0.105 which indicated 10% of the variance in ROA is caused due to Gross and Net NPA of the private sector banks respectively and remaining variance is by other factors. This emphasizes that the NPA has an impact on the profitability of the private sector banks but no so significant. The negative sign of the regression coefficient i.e. Beta indicates a negative relation between ROA and NPA. This concludes that profitability and NPA have an inverse relationship. Any increase in the amount of NPA will cause reduction in the profits of the banks and vice-versa. Thus H02: There is no relationship between the NPA & GPA ratio and Return on Assets (ROA) on profitability (ROA) of private sector banks is rejected.

Table-10 Model Summary : ANOVA (F) Results and Coefficients for Foreign Sector Banks

Model : Dependent Variable (ROA)	*Coefficients*	*Standard Error*	*t Stat*	*P-value*
Intercept	1.881320108	0.223226286	8.427860998	0.00
Gross NPA Ratio	-6.300602733	6.725479532	-0.936825798	0.370921287
Model Summary	R= 0.28, R Square = 0.080 , F Value = 0.377			

Table-11 Model Summary : ANOVA (F) Results and Coefficients for Foreign Sector Banks

Model : Dependent Variable (ROA)	*Coefficients*	*Standard Error*	*t Stat*	*P-value*
Intercept	1.745782346	0.153211792	11.39456909	0.00
Net NPA Ratio	-6.988691121	14.86962009	-0.469997961	0.648438487
Model Summary	R= 0.147, R Square = 0.021 , F Value = 0.65			

Interpretation

The above analysis (Table 10 & 11) shows the result of the regression analysis between the Return on Assets (ROA) as dependent variable and Gross NPA Ratio & Net NPA Ratio as independent variable for foreign sector banks operating in India. The value of R square is 0.080 and 0.021 which indicated 8% of the variance in ROA is caused due to Gross and Net NPA of the foreign sector banks operating In India respectively and remaining variance is by other factors. This emphasizes that the NPA has an impact on the profitability of the foreign sector banks but no so significant. The negative sign of the regression coefficient i.e. Beta indicates a negative relation between ROA and NPA. This concludes that profitability and NPA have an inverse relationship. Any increase in the amount of NPA will cause reduction in the profits of the banks and vice-versa. Thus H03: There is no relationship between the NPA & GPA ratio and Return on Assets (ROA) on profitability (ROA) of foreign sector banks is rejected.

CONCLUSION

1. **On analyzing the trend of the NPAs in the public sector banks it was observed that the Nonperforming assets show an increasing trend. A negative relationship was witnessed between the NPA ratios and Return on Assets.** H01: There is no relationship between the NPA & GPA ratio and Return on Assets (ROA) on profitability (ROA) of Public sector banks is rejected. Thus an increase in the amount of NPA will cause reduction in the profits of the public sector banks and vice-versa.

2. **On analyzing the trend of the NPAs in the private sector banks it was observed that the Nonperforming assets show an increasing trend. A negative relationship was witnessed between the NPA ratios and Return on Assets.** H02: There is no relationship between the NPA & GPA ratio and Return on Assets (ROA) on profitability (ROA) of private sector banks is rejected. Thus an increase in the amount of NPA will cause reduction in the profits of the public sector banks and vice-versa but not so significant in this case as other factor plays important role.
3. **On analyzing the trend of the NPAs in the foreign sector banks it was observed that the Nonperforming assets show a fluctuating trend. A negative relationship was witnessed between the NPA ratios and Return on Assets.** H03: There is no relationship between the NPA & GPA ratio and Return on Assets (ROA) on profitability (ROA) of foreign sector banks is rejected. Thus an increase in the amount of NPA will cause reduction in the profits of the foreign sector banks and vice-versa but not so significant in this case as other factor plays important role.

SUGGESTIONS:

The analysis concluded that the increase in the NPA will result in the reduction of the Banks Profits. The rescuing measures are taken by the government to reduce NPA, but for the problem cannot be solved without the preventing of the bad loans. Banks should assess the companies thoroughly before granting loans and should act strictly towards willful defaulters. After granting loan, banks should observe the capacity of the company continuously and should be able to assess whether it is about to bankrupt. In this way, banks can sell the assets before the loans become NPA. Banks should thoroughly inspect the company they are giving loans to as Loans to bad companies will lead to lack of money for good investments. The ‘Insolvency and Bankruptcy Code (IBC)’, 2016 has helped banks to overcome NPA either by reviving the companies or liquidating them .

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