

# AN EMPIRICAL STUDY ON BANK SPECIFIC AND INSTITUTIONAL SPECIFIC FACTORS DELINEATING KEY PROFITABILITY INDICATORS OF NATIONALISED BANKS IN INDIA

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## Abstract

*This paper concentrates on the impact of bank specific and institutional specific factors on the profitability of nationalized banks in India by considering three major profitability indicators such as Return on Assets (ROA), Return on Equity (ROE) and Net Interest Margin (NIM) for a period of 15 years from 2000-01 to 2014-15. The collected data have been analyzed by applying the statistical tools such as descriptive statistics, correlation analysis and multiple regression models. The results ensured statistically significant relationship among the bank specific and institutional specific variables such as Rural and Sub-Urban Branches to Total Branches (RSUBTB), Net Profit to Total Assets (NPTA), Logarithm of Total Assets (LGTA) and Operating Profit to Total Assets (OPTA) with that of the profitability factors namely ROA, ROE and NIM.*

## Keywords:

*Bank Specific, Institutional Specific, Nationalized Banks, Profitability Indicators.*

## 1. INTRODUCTION

Return on Assets (ROA) is one of the profitability indicators of banks that demonstrate the actual income of the banks from all their assets for a particular period of time usually a financial year in terms of interest, dividend, etc. followed by ROA, the Return on Equity (ROE) which contributes more in depicting the profitability position of banks in terms of their gain on their equity employed. The third profitability factor is Net Interest Margin (NIM) which showcases the difference between the interest receivable by banks on the loans lent and the interest payable on all kinds of deposits to the customers. The higher the NIM, will be profitable for the banks and vice-versa. Hence, the profitability factors considered for the present study include ROA, ROE and NIM. The bank specific and institutional specific factors considered are Loan Loss Provisions to Total Loans, Net Interest Income to Total Assets, Non-Interest Income to Total Assets, Interest Income to Total Assets, Operating Expenses to Total Assets, Non-Performing Assets Provision to Total Provision, Capital Adequacy Ratio, Total Expenses to Total Revenue, Rural and Sub-urban Branches to Total Branches, Cost of Borrowings, Gross Non-Performing Assets to Total Loans, Loan Loss Provisions to Net Profit, Log of Market Capitalization, Net Profit to Total Assets, Log of Profit Per Employee and Bank-age. The data pertaining to 15 years period from 2000-01 to 2014-15 has been collected from the website of Reserve Bank of India (RBI) which are published annually under the heading "Statistical Tables Relating to Banks in India (STRBI)". In that specifically, the data had been compiled from selected ratios of Scheduled Commercial Banks in India. By having this brief startup, the analysis is systematized in the upcoming manner.

Section 2 portrays the review of literature, Section 3 outlines the research design, and Section 4 depicts the summary of findings, suggestions and conclusions whereby section 5 completes the analysis with the various references.

## 2. REVIEW OF LITERATURE

Ali Mirzaei and Zeynab Mirzaei (2011) pointed out the impact of bank-specific and macroeconomic determinants on the profitability of Middle Eastern banking. The study results revealed that the internal factors such as efficiency, capital adequacy and credit risk were the most influencing factors of the profitability of Middle Eastern banking [1]. Khizer Ali et al. (2007) discussed the bank-specific and macroeconomic indicators of profitability with empirical evidence from the commercial banks of Pakistan. The findings of the study portrayed that out of the macroeconomic variables, GDP alone had positive relationship whereby the consumer price inflation had negative relationship with the profitability of commercial banks in Pakistan [2]. Xuezhi Qin and Dickson Pastory (2012) reviewed the commercial banks profitability position with the case of Tanzania. From the ANOVA, it was found that all the 3 banks had similar profitability and the regression model stated that there was a considerable impact of capital adequacy, liquidity and asset quality on the profitability level of all 3 major banks in Tanzania [3]. Vigneswara Swamy (2013) reported the determinants of bank asset quality and profitability through an empirical assessment. The results of Panel Regression Analysis revealed that CAR, IDR, ROA and ROI were positively related while the Cost of Funds, GNPA and Operating Expenses to Total Assets Ratio were negatively related with the profitability [4]. Namita Rajput et al. (2012) inspected the profitability and non-performing assets in the Indian perspective during the period 1997-98 to 2009-10. The results revealed that the NPAs had a considerable influence on the performance of banks. Further, it was also found that the profitability influents and NPAs had adverse relationship only [5]. Namita Rajput et al. (2012) surveyed the profitability and credit culture of non-performing assets of public sector banks. The results of ratio analysis clearly stated that the NPAs had a downward trend in terms of GNPA and NNPA. The multiple regression results revealed that the decrease in NPAs will increase the profitability of public sector banks [6]. Krishna Prasanna et al. (2014) critically examined the determinants of non-performing advances in the Indian banking system during the period 2000-01 to 2011-12, using the Panel Data Modeling. The panel data modeling interprets that the macro-economic variables had higher impact on Gross NPA Ratio compared to Net NPA Ratio, as the NNPA depends on the NPA provisions made by the bank. Among the macro-economic factors, GDP, construction expenditure,

growth rate in PCI, forex reserves, stock market index and volatility had statistically transposed relationship with NPA ratios. In bank specific variables, inefficiency ratio had a positive impact on the NPAs. The bank size and performance indicators had a negative impact indicating that the efficient operational management at bank level helps to reduce NPAs [7]. Saikat Ghosh Roy (2014) scrutinized the determinants of non-performing assets in India during the period 1995-96 to 2011-12, using the Panel Regression tool. The NPAs continues to shake the economies all around the world from time to time. The study consisted of 4 bank specific variables and 8 economic factors. The panel regression, fixed effect agrees assessing the influence of certain macroeconomic elements on the NPA. The result revealed by this study was comparatively in the same line to that of the study conducted in other regions also. The Indian banking sector was fronting the hassle of their asset superiority as the GDP growth deteriorated and Indian rupee saw precipitous downgrading. The panel regression denoted that the growth in GDP, varying exchange rate and global volatility had major impact on the NPA of Indian Banking Sector [8]. Johannes Peyavali Sheefeni (2015) evaluated the impact of bank specific determinants on non-performing loans in Namibia during the period 2000-01 to 2013-14, using the time series econometric techniques of unit root, co-integration and impulse response functions as well as to forecast error variance decomposition. The study considered the factors such as Return on Assets (RoA), Return on Equity (RoE), Loan to Total Asset ratio (LTA) and Log of Total Assets (LNT). The study stated that return on assets, return on equity, loan to total asset ratio and log of total assets were the key elements of NPLs. The Return on Assets and Return on Equity had a contrary association with the NPLs whereas loan to total asset ratio and log of total assets expressed an affirmative relationship with the NPLs of Namibia [9]. Siraj (2014) studied the non-performing assets of public sector banks in India with special reference to State Bank of Travancore during the period 2000-01 to 2011-12, using the statistical tools such as mean, ratio, exponential growth rate, correlation, regression, ANOVA, Levene and Welch statistics, F-test, t-test and Sobel test. The research was targeted at exploring the movement of NPA in Indian PSBs. Further, it scrutinized the moderating and mediating consequence of certain bank specific and macro-economic variables on NPA. The study revealed that the banks has to find an improved need for the collection of client information, details dissemination and must maintain a healthy rapport with the clients in order to assess the loan assortment. In addition, the status of the projects has to be valued from time to time [10]. Ahlem Selma Messai and Fathi Jouini (2013) inspected the micro and macro determinants of non-performing loans in Italy, Greece and Spain during the period 2003-04 to 2007-08 by applying the trend analysis and Pearson correlation matrix. The study targeted on finding the influents of NPLs faced by 85 banks in 3 different countries with the help of macroeconomic and bank-specific variables. The panel data method revealed that the NPLs were negatively associated with the GDP growth rate and profitability of all the banks. Further it was also found that the NPLs had a positive relationship with the rate of unemployment, the NPL reserves to total loans and the real interest rate. In addition, it was also suggested that the banks had to consider various factors while lending loans in order to minimize the NPLs [11].

Yuqi Li (2007) examined the determinants of banks' profitability and its implication on risk management practices during the period 1998-99 to 2005-06, by applying the descriptive statistics and regression analysis. The research targeted on determining the influence of microeconomic and bank specific factors on the profitability of banks measured in terms of return on average assets. The regression analysis results revealed that the allocation for NPA had a negative association affecting the profitability of banks and the effect of liquidity on profits couldn't be determined. The healthy capital structure was declared the main influent of banks' profitability which would lead to a better functioning by reducing the cost of borrowing. Further, it was found that the macroeconomic variables such as inflation rate, interest rate and GDPGR had no association with that of the profitability of banks [12].

So, this paper analyses the existing break with previous literatures and narrowed the openings which exists by taking selected Public Sector Banks and the various macroeconomic factors such as ROA, ROE and NIM which plays the key role in determining the profitability of banks in India in terms of certain factors measuring the profitability.

### 3. RESEARCH DESIGN

This chapter deals with the research objectives, statement of hypotheses, research methodology, statistical tools, regression equations and the expected relationship between the explanatory and explained variables taken for the study.

#### 3.1 RESEARCH OBJECTIVES

To identify the relationship of bank specific and institutional specific factors with the profitability factors of nationalized banks such as ROA, ROE and NIM.

To determine the influence of bank specific and institutional specific factors on the profitability factors of nationalized banks in India.

#### 3.2 STATEMENT OF HYPOTHESES

**H<sub>0</sub>:** There is no significant relationship between the profitability factors (ROA, ROE, and NIM) and bank specific and institutional specific factors of nationalized banks.

**H<sub>a</sub>:** There is a significant relationship between the profitability factors (ROA, ROE, and NIM) and bank specific and institutional specific factors of nationalized banks.

#### 3.3 RESEARCH METHODOLOGY

In this research, the data of 19 nationalized banks have been considered based on the accessibility of data and convenience. The data source for this study is secondary collected from the Statistical Tables and Other Banking Data released by the Reserve Bank of India from time to time. The data has been collected and compiled for a period of 15 years from 2000-01 to 2014-15 based on its approachability.

In this study, the banking data has been analyzed to determine the association between the explanatory and explained variables and effect of the independent variables on the dependent variables, by applying the following statistical tools.

- Descriptive Statistics
- Multiple Correlation Analysis and
- Multiple Regression Analysis

**Empirical Specification of Multiple Regression Analysis Model:**

For this study, the regression analysis model has been outlined to identify the multi collinearity and the regression equations are as follows:

$$ROA = \alpha + \beta_1RSUBTB_{i,n} + \beta_2NPTA_{i,n} + \beta_3CAR_{i,n} + \beta_4NPAPTP_{i,n} + \beta_5MCAP_{i,n} + \beta_6BKG_{i,n} + \beta_7LGTA_{i,n} + \beta_8OPTA_{i,n} + \zeta \quad (1)$$

$$ROE = \alpha + \beta_1RSUBTB_{i,n} + \beta_2NPTA_{i,n} + \beta_3CAR_{i,n} + \beta_4NPAPTP_{i,n} + \beta_5MCAP_{i,n} + \beta_6BKG_{i,n} + \beta_7LGTA_{i,n} + \beta_8OPTA_{i,n} + \zeta \quad (2)$$

$$NIM = \alpha + \beta_1RSUBTB_{i,n} + \beta_2NPTA_{i,n} + \beta_3CAR_{i,n} + \beta_4NPAPTP_{i,n} + \beta_5MCAP_{i,n} + \beta_6BKG_{i,n} + \beta_7LGTA_{i,n} + \beta_8OPTA_{i,n} + \zeta \quad (3)$$

where,

$\alpha$  = Constant  $\beta_1, \dots, \beta_8$  = Estimated coefficients,  $\zeta$  = Error term,  $I$  = Number of Banks and  $n$  = Number of Years

Table.1. Summary of Expected Relationship between the Explanatory and Explained Variables

Dependent Variables	Regressors	Expected Sign.
ROA – Return on Assets	CAR – Capital Adequacy Ratio	Negative
	RSUBTB – Rural and Sub-urban Branches to Total Branches	Positive
	NPTA – Net Profit to Total Assets	Positive
ROE –Return on Equity	NPAPTP – Non-Performing Assets Provision to Total Provision	Negative
	MCAP – Log of Market Capitalization	Positive
NIM – Net Interest Margin	BKG – Bank Age	Positive
	LGTA – Log of Total Assets	Negative
	OPTA – Operating Profit to Total Assets	Positive

**4. RESULTS AND DISCUSSION**

Various results of the study such as descriptive statistics, multiple correlation, regression analysis, analysis of variance, summary of regression coefficients, interpretations are discussed. Based on the research findings, suggestions are given for the nationalized banks in order to improve their profits in future.

The Table.2 portrays the results of descriptive statistics for the 19 nationalized banks that are considered for the study over a period of 15 years from 2000-2015. The consolidated result depicts the deviation of independent variables and its impact on the dependent variables which measures the profitability of banks. The Bank-age (BKG) has the highest mean value lined by Return on Equity (ROE) Capital Adequacy Ratio (CAR) and Log of Market Capitalization (MCAP). (The mean value of BKG is 89.32 and the standard deviation is 20.69, which clearly showcases that it deviates to the degree of 20.69 from both the sides.)

Table.2. Descriptive Statistics Analysis of Profitability Indicators and Bank-specific and Institutional-specific factors of Nationalized Banks

Variables	Minimum	Maximum	Mean	Standard Deviation
Capital Adequacy Ratio (CAR)	0.00	23.11	12.21	1.94
Rural and Sub-Urban Branches to Total Braches (RSUBTB)	0.37	0.69	0.57	0.07
Net Profit to Total Assets (NPTA)	-0.02	0.02	0.01	0.01
Non-Performing Assets Provision to Total Provision (NPAPTP)	-0.50	1.66	0.49	0.24
Logarithm of Market Capitalization (MCAP)	9.00	12.00	10.65	0.55
Bank-Age (BKG)	51.00	150.00	89.32	20.69
Logarithm of Total Assets (LGTA)	4.13	5.85	4.94	0.40
Operating Profit to Total Assets (OPTA)	0.25	4.09	1.93	0.59
Return on Assets (ROA)	-0.99	2.01	0.83	0.44
Return on Equity (ROE)	-33.11	40.31	14.84	8.64
Net Interest Margin (NIM)	0.02	0.04	0.03	0.01

Table.3. Multiple Correlation Analysis of Bank specific and Institutional specific variables

Variables	CAR	RSUBTB	NPTA	NPAPTP	MCAP	BKG	LGTA	OPTA
CAR	1							
RSUBTB	.255**	1						
NPTA	.593**	-.204**	1					
NPAPTP	.268**	.253**	.371**	1				
MCAP	.177**	-.053	.224**	-.120*	1			
BKG	.047	.213**	.147*	-.034	.213**	1		
LGTA	.055	.129*	-.030	.053	.599**	.378**	1	
OPTA	.434**	-.112	.771**	-.341**	.118*	.089	-.106	1

\*\*denotes significant at 5% level (0.05) and \*denotes significant at 1% level (0.01)

From the Table.2, it is quite clear that the Bank-age (BKG) had the highest standard deviation of 20.69 which states the high volatility over the period of study. At the same time, BKG also represents the greater inconsistency in its minimum (51.00) and the maximum value (150.00). To analyze the profitability, the variables such as ROA, ROE and NIM have been considered as dependent variables which determine the profitability of nationalized banks in our country. The minimum and maximum value of ROA is -0.99 and 2.01 whereas -33.11 and 40.31 for ROE followed by 0.02 and 0.04 for NIM.

The Table.3 represents the correlation of dependent variables ROA, ROE and NIM with the independent variables of nationalized banks in India. It clearly explains the relationship, extent of relationship and its nature also (sign). For the purpose of this study, the SPSS 16.0 has been used to run the regression model to identify the extent by which the independent variables impact the dependent variables ROA, ROE and NIM. The correlation between NPTA and ROA is on the higher side (0.949) which is significant at 5% level of significance followed by OPTA (0.734) and CAR (0.533) with ROA whereas the RSUBTB (-0.275), NPAPTP (-0.416) and LGTA (-0.057) are negatively correlated without having much impact on the ROA. In the same manner, the NPTA was highly correlated (0.887) with ROE at 5% level of significance followed by OPTA (0.636) and CAR (0.444) with ROE whereas the variables like RSUBTB (-0.101) and LGTA (-0.061) had negative relationship with ROE. Finally, the OPTA (0.530) was highly correlated with NIM followed by NPTA (0.451) and CAR (0.212) significant at 5% level of significance whereas LGTA (-0.366\*\*) and NPAPTP (-0.247\*\*) was negatively correlated with NIM.

#### 4.1 REGRESSION ANALYSIS OF KEY PROFITABILITY INDICATORS WITH BANK SPECIFIC AND INSTITUTIONAL SPECIFIC VARIABLES FOR THE NATIONALIZED BANKS IN INDIA

Regression analysis is used to determine the impact of explanatory variables on the explained variables. This is the perfect statistical tool which describes the extent of impact of independent variables on the dependent variables. The analysis included in this regression analysis are as follows: Model Summary, ANOVA and Regression Coefficient. The magnitude of relationship between the independent and dependent variables are explained by the Model Summary whereas the significant relationship among the independent and dependent variables can be traced from ANOVA. Finally, the Regression Coefficient examines the influence of each independent variable on the dependent variables taken for the study.

Table.4. Regression Analysis Model Summary

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Standard Error
ROA	.956	.915	.912	.13112
ROE	.911	.830	.825	3.61382
NIM	.662	.439	.422	.00490

The Table.4 explains the relationship between the Regressors and Regressands. On the basis of dependent variables, the regression analysis model has been framed for the nationalized banks. The regression model for the bank specific and institutional specific variables have been customized based on analyzing the multi-collinearity and the value of R<sup>2</sup> being higher. In model 1, ROA has been taken as proxy for profitability measure. The value of R<sup>2</sup> for ROA is 0.915 which indicates that the chosen regressors are influencing ROA to the extent of 91.5%. Following that, the ROE showed an R<sup>2</sup> value of 0.830 which ensures the impact of selected explanatory variables on it to the tune of 83%. Finally, the NIM portrayed a R<sup>2</sup> value of 0.439 which confirms that the said independent variables control the NIM to

the degree of 43.9%. Finally the adjusted R<sup>2</sup> is 0.912, .825 and 0.422 which denotes that the model is having excellent goodness of fit for the data. Therefore, the model is exactly suitable for the nationalized banks.

Table.5. Analysis of Variance (ANOVA)

Variables	Model	Sum of Squares	Degrees of Freedom	Mean Square	F	Sig.
ROA	Regression	50.780	8	6.347	369.189	.000
	Residual	4.745	276	.017		
	Total	55.525	284			
ROE	Regression	17615.232	8	2201.904	168.603	.000
	Residual	3604.470	276	13.060		
	Total	21219.703	284			
NIM	Regression	.005	8	.001	26.965	.000
	Residual	.007	276	.000		
	Total	.012	284			

The Analysis of Variance values have been figured in order to determine the importance of ROA, ROE and NIM for the nationalized banks. For the study, the null hypothesis has been defined as there is no relationship between the dependent and independent variables. After running the ANOVA tool, the outcome stated the highly significant relationship between the said dependent and independent variables.

Therefore, the null hypothesis stating is rejected in this study. So, it is very clear that the deviation in the independent variables such as Capital Adequacy Ratio, Rural and Sub-Urban Branches to Total Branches, Net Profit to Total Assets, Non-Performing Assets Provision to Total Provision, Logarithm of Market Capitalization, Bank-Age, Logarithm of Total Assets and Operating Profit to Total Assets has a great influence on the dependent variables such as Return on Assets, Return on Equity and Net Interest Margin of nationalized banks.

Table.6. Summary of Regression Coefficients of Profitability Measures of Nationalized Banks

Variables	Return on Assets		Return on Equity		Net Interest Margin	
	Beta	P-Value	Beta	P-Value	Beta	P-Value
(Constant)		.002		.000		.000
CAR	-.066	.003	-.119	.000	.010	.863
RSUBTB	-.083	.000	.085	.002	.218	.000
NPTA	.939	.000	1.139	.000	.165	.046
NPAPTP	-.058	.003	.018	.508	-.096	.057
MCAP	.029	.217	-.143	.000	.035	.558
BKG	.016	.417	-.099	.000	.062	.224
LGTA	-.035	.152	.076	.029	-.393	.000
OPTA	.001	.977	-.141	.000	.339	.000

The Table.6 represents the projected outcomes of regression model. The problem of multi-collinearity has been verified by means of the correlation coefficients and collinearity statistics. The collinearity problem is said to exist in the multiple correlation

whereby the relationship between two said independent variables is 0.80 or higher than that level. Similarly, there is possibility for the problem of multi-collinearity to exist in the multiple regression models wherein it can be noted in terms of variance influence factor denoted by Variance Inflation Factor (VIF) value which will be 10 or higher than that level and the tolerance level will be 1 or more than 1. From the Table.6, the VIF value in the collinearity statistics clearly states that there is no problem of multi-collinearity in this study. Once the problem of multi-collinearity is not present in the study variables, the regression tool has been used with the variables Return on Assets (ROA), Return on Equity (ROE) and Net Interest Margin (NIM) as dependent variables and Capital Adequacy Ratio (CAR), Rural and Sub-Urban Branches to Total Branches (RSUBTB), Net Profit to Total Assets (NPTA), Non-Performing Assets Provision to Total Provision (NPAPT), Logarithm of Market Capitalization (MCAP), Bank-Age (BKG), Logarithm of Total Assets (LGTA) and Operating Profit to Total Assets (OPTA) as independent variables. The level of significance is fixed at 0.05 and the F value should be less than the significant level in order to term the relationship between the ROA, ROE and NIM with the bank-specific and institutional specific variables as linear. The regression coefficient of Capital Adequacy Ratio (CAR) is in accordance with the expected negative and significant relationship with that of ROA and ROE. At the same time, it denotes a contradictory positive relationship with the NIM (Insignificant). So, it is clear that there is no much impact of CAR on the profitability of nationalized banks. The regression coefficient of Rural and Sub-Urban Branches to Total Branches (RSUBTB) showed a negative significant relationship with ROA which is not in line with its expected positive relationship. But, it goes in hand to hand with the ROE and NIM with positive significant relationship at 5% level of significance. So, this makes sure that it affects the profitability of nationalized banks measured in terms of ROE and NIM. In addition, the regression coefficients of Net Profit to Total Assets (NPTA) have clearly stated that it explains the same positive significant relationship expected with the ROA, ROE and NIM. Hence, these things ensure that it is highly influencing the profitability of nationalized banks. After that, the regression coefficient results of Non-Performing Assets Provision to Total Provision (NPAPT) give the same expected negative relationship with ROA (significant) and NIM (insignificant). On the other side, it exhibits an opposite positive insignificant relationship with the ROE. This summarizes that it is having only lesser impact on the profitability of nationalized banks. Next, the regression coefficients of Logarithm of Market Capitalization (MCAP) is in line with the expected positive relationship with ROA and NIM both being statistically insignificant. But, it had a contrary negative significant relationship with ROE. Overall this ensures that it is having a considerable impact on the profitability of nationalized banks measured in terms of ROA and NIM. Similarly the regression coefficients of Bank-Age (BKG) also indicates the same expected positive relationship with ROA and NIM (both significant) like MCAP. But, it is having a divergent inverse significant relationship with ROE. These things points out its sizable influence on the profitability of nationalized banks explained by ROA and NIM. The regression coefficients of Logarithm of Total Assets (LGTA) accept the same expected negative relationship with ROA (insignificant) and NIM

(significant). On the other hand, it showed an antagonistic favorable significant relationship with ROE which is against its expected relationship. This clearly states the fact that the LGTA is having only lesser impact on the profitability of nationalized banks in terms of ROE alone. Finally the regression coefficients of Operating Profit to Total Assets (OPTA) are also in accordance with its expected positive relationship with ROA (insignificant) and NIM (significant). In spite of that it shows an incongruous negative relationship with ROE. This makes sure that the OPTA is having a reasonable amount of impact on the profitability of nationalized banks noted in terms of ROA and NIM.

## 4.2 SUMMARY OF FINDINGS

The following results have been found from this study.

- The results of descriptive statistics clearly states that the Bank-Age (BKG) is highly significant which has the highest standard deviation of 20.69
- The results of model summary explains the regression model's goodness of fit which is suitably best as it is backed by high  $R^2$  value for all the 19 nationalized banks of the study.
- All the 8 explained variables are having significant relationship with the explanatory variables ROA, ROE and NIM which is identified in terms of P value.
- Similarly, the variables such as Rural and Sub-Urban Branches to Total Branches (RSUBTB), Net Profit to Total Assets (NPTA), Logarithm of Market Capitalization (MCAP), Bank-Age (BKG) and Operating Profit to Total Assets (OPTA) had positive significant impact on the profitability of nationalized banks whereas the variables such as Capital Adequacy Ratio (CAR), Non-Performing Assets Provision to Total Provision (NPAPT) and Logarithm of Total Assets (LGTA) had negative relationship which denotes that it is having lesser impact on the profitability of nationalized banks in India.

## 4.3 SUGGESTIONS

Based on the study results, the researchers put forth the following recommendations to the nationalized banks.

- All the banks are supposed to follow the Capital Adequacy Ratio (CAR) norms strictly. At the same time, they have to think out of the box in future to improvise the non-interest incomes also.
- Allocating more provision to Non-Performing Assets also affects the profitability of nationalized banks drastically. So, the banks have to ensure that they recover the loans on time and don't make huge provisions towards NPAs which will improve the profitability of nationalized banks.
- Finally the Logarithm of Total Assets also shows a negative impact on the profitability which clearly denotes the nationalized banks are contributing more funds to build its asset structure and making the funds idle over a long period of time. So, the nationalized banks have to reduce the investment level in assets in order to increase the profitability.

## 5. CONCLUSION

This study concentrated on analyzing the relationship of bank-specific and institutional-specific variables on the profitability indicators such as Return on Assets (ROA), Return on Equity (ROE) and Net Interest Margin (NIM) of 19 nationalized banks for a period of 15 years from 2000-01 to 2014-15 using multiple correlation and regression model. The results of regression analysis clearly stated that there is significant relationship for bank specific and institutional specific variables with the profitability factors.

The independent variables such as Rural and Sub-Urban Branches to Total Branches (.000, .002 and .000), Net Profit to Total Assets (.000, .000 and .046), Logarithm of Market Capitalization (.217, .000 and .558), Bank-Age (.417, .000 and .224) and Operating Profit to Total Assets (.977, .000 and .000) had a significant relationship on the profitability of nationalized banks measured in terms of Return on Assets (ROA), Return on Equity (ROE) and Net Interest Margin (NIM).

The independent variables such as Net Profit to Total Assets, Operating Profit to Total Assets and Capital Adequacy Ratio are positively correlated whereas the variables Rural and Sub-Urban Branches to Total Branches, Logarithm of Market Capitalization and Bank-Age are negatively correlated with ROA, ROE and NIM.

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