



# Impact of Bank Specific Variables on Financial Performance of Public Sector Banks in India

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**Abstract:** The main purpose of the present study is to investigate the impact of bank specific variables on financial performance of public sector banks. Multiple regression analysis was used in the study. This study adopted the return on assets (ROA) and net interest margin (NIM) as the profitability indicators to measure the profitability of public sector banks. ROA and NIM are both dependent variables. The liquidity risk, credit risk, capital adequacy, expenses management, solvency, growth rate and efficiency are the independent variables used in the study to investigate and explain the impact of bank specific variables on the financial performance of public sector banks. Secondary data was collected for time period of 12 years (2008-09 to 2019-20) from the financial statements of selected banks. The results of the study suggest that when ROA is taken to represent the profitability of public sector banks; liquidity risk, capital adequacy and expense management have adverse effect on the financial performance of selected public sector banks. However, credit risk, solvency and growth rate have positive effect on the financial performance of the selected public sector banks in India. When NIM is taken to represent the profitability of public sector banks; liquidity risk and capital adequacy have negative impact on financial performance of selected public sector banks. Whereas, expense management and credit risk have positive impact on the financial performance of selected public sector banks in India.

**Key Words:** Banks, Variables, Financial Performance.

## I. INTRODUCTION:

For any country; banking system works as a backbone of their economy, it plays vital part in economic development of the country. Banks and financial institutions play critical role in the development of various sectors of economy which weighs equal importance for the advancement of the economy. **McKinnon (1973)** and **Shaw (1973)** projected the role of financial sector in economic development and remarked that there is a high degree correlation between development of financial system and economic growth of a country.

In India, reforms made by Narasimham committee introduced much needed changes in the banking system, making it more transparent and efficient; however, it was also very difficult period for public sector banks since most of those banks reported losses due to those changes. (**Abdi, 2018**) identify bank internal factors as bank specific factors which can either be financial factors or non-financial factors. Financial variables relate to the decisions which directly involve the items in the balance sheet and income statement, financial statement indicators include bank size, capital ratio, deposits, operational efficiency, risk management, asset quality and liquidity. We have taken liquidity risk, credit risk, capital adequacy, expenses management, solvency, growth rate and efficiency as the independent variables to investigate the impact on financial performance of public sector banks.

This study has investigated the performance of Indian Banking Sector specifically public sector banks using the recent financial data from 2008-09 to 2019-20. This time period included the time of various drastic changes in economy like demonetization of currency in the year 2016 and various mergers of public sector banks from the year 2009 to 2020; as well as covid-19 pandemic; which has affected the global economy and Indian economy critically. According to Ministry of statistics, by the end of year 2020 India's growth went down by 3.1%. Lock down imposed by Govt to curb the pandemic largely affected the cash flow and finance of the country, Stock markets of the country reported the worst losses faced by the various organizations in the history of India.

## II. LITERATURE REVIEW:

A study conducted by (Khizer Ali & Ahmed, 2011) examined the effect of bank specific and microeconomic indicators on profitability of commercial banks of Pakistan. The study employed the performance of 22 public and private sector commercial banks and covered the period of 2006 to 2009. Analysis had been carried out using descriptive, correlation and regression techniques. The results show that when profitability was measured by ROA, capital and credit risk have affected profitability negatively whereas size, operating efficiency, asset management have affected profitability positively. While the profitability is measured by ROE, capital, portfolio composition and asset management have affected profitability positively and negatively by size, operating efficiency and credit risk.

(Lemma Nigussie Zergaw, 2017) studied the determinants of Financial Performance of Commercial Banks from Ethiopia. Nine banks were selected for the study and panel data was collected for 11 years; by using descriptive statistics, correlation analysis and multiple regression analysis, it was discovered that all the bank specific variables (capital adequacy ratio; asset quality ratio; management efficiency ratio; earnings ratio and liquidity ratio) taken under study were statistically significant determinant of Ethiopian commercial banks financial performance.

(Fadzlan Sufian, 2012) inspected Bank-Specific and Microeconomic Determinants of Profitability of Bangladesh's Commercial Banks. The study covered all the commercial banks of the Bangladesh and collected the statistical data from 2000 to 2010. Taking three dependent variables and ten independent variables to represent the bank-specific and microeconomic variables, multiple regression analysis was applied to the collected data. The study concluded that bank specific variables like capitalisation, management quality and size of the bank have positive and significant impact on Banks' performance. GDP and market concentration had negative and significant impact on Banks' performance. (Fadzlan Sufian, 2012) (Fadzlan Sufian, 2012)

(Mbella ME, 2017) studied the effect of bank specific factors on the performance of Afriland first bank in Cameroon. The existing study was done to examine to which extent bank specific variables affect the performance of Afriland first bank. The secondary quantitative data was used in this study for the time period of 2009 to 2016. The study used camel model as means of research. The results of the study suggested that capital adequacy, liquidity management and asset quality negatively affect the performance of Afriland first bank whereas management efficiency had positive impact.

(Panayiotis P. Athanasoglou & Delis, 2005) have studied the effect of bank specific, industry specific and microeconomic determinants of bank profitability. The investigation is carried out in single equation framework. The data utilized in this research has been taken from the Greek banking sector from 1985 to 2001. The results suggest that increased exposure to credit risk lowers profits. Labor productivity growth has positive impact whereas operating expenses has negative impact on profitability and size as well as ownership, status of banks are insignificant in explaining profitability.

(Ping-fu Lai, 2014) did the analysis of the bank specific variables determinants of the operating and financial performance for the licenced banks listed in Hong Kong stock exchange. The main aim of the present study was to investigate the major bank specific variables determinants of the operating and financial performance for the banks listed in Hong Kong stock exchange. The data taken for analysis was secondary in nature. The sample for the analysis consists 14 licenced banks out of which 8 were local banks and 6 were Mainland China banks. Backward multiple regression analysis has been applied for the research. The result of the study suggest that the growth rate and solvency variables have significant impact on operating and financial performance.

(Xiaoxi Zhang, 2013) examined the impact of bank specific and macroeconomic factors on the performance of Chinese banking sector from 2004 to 2010. This study attempts to analyse Chinese banks performance taking account of ownership structures. Secondary data from commercial banks operating in China (Mainland only) was taken for the research purpose. Regression analysis was done to carry out the research. This research results suggest that banking concentration does impact on bank performance moreover greater economic integration via higher trade and capital flows and greater trade and capital liberalization causes an increase in bank profitability.

### III. RESEARCH METHODOLOGY:

#### 3.1 Objectives of the Study:

1. To analyse the bank specific variables which affects the profitability of public sector banks in India.
2. To examine the impact of bank specific variables on financial performance of public sector banks in India.
3. To give appropriate suggestions for the banks, shareholders, general public and policy holders of India.

#### 3.2 Hypothesis of the Study

**H0:** There is no significant relationship between bank specific variables and financial performance of public sector banks in India.

**H1:** There is significant relationship between bank specific variables and financial performance of public sector banks in India.

#### 3.3 Population and Sample:

In the present study, we took major six public sector banks in India as their sample. Following is the list of selected banks.

- Bank of Baroda
- Bank of India
- Indian Overseas Bank
- Punjab national Bank
- State Bank of India
- Union bank of India

#### 3.4 Data and Sources of Data:

For the current study secondary data was collected from the various annual reports of the selected banks' websites. The data was collected for 12 years. (2008-09 to 2019-20)

#### 3.5 Theoretical Framework:

Variables of the study contained dependent and independent variables. In the present study ROA and NIM are taken as dependent variables to represent the financial performance of the public sector banks.

Table 3.5: Definition and Measurement of Study

Variable Name	Notion	Full Form	Formula
Profitability	ROA	Return on Assets	Profit After tax/Average of Total Assets
	NIM	Net Interest Margin	(Interest Income-Interest Expenses)/Total Assets x 100
Liquidity Risk	LTDR	Loans to Deposits Ratio	(Total Loans/Total Deposits) x 100
	CTDR	Cash to Deposits Ratio	(Cash Balance/Total Deposits) x 100
Credit Risk	LTTAR	Loans to Total Assets Ratio	(Loans/Total Assets) x 100
Capital Adequacy	TDTTSE	Total Deposits to Total Shareholder's Equity	(Total Deposits/Total Shareholders' Equity)
Expense Management	TOETTA	Total Operating Expense to Total Assets	(Total Operating Expenses/Total Assets) x 100
Solvency	IC	Interest Coverage	(Profit Before Interest & Tax/Total Interest Expenses)
	DTER	Debt to Equity Ratio	(Total Debt/Total Equity)
Growth Rate	IIGR	Interest Income Growth Rate	(Ending Interest Income-Beginning Interest Income)/Beginning Interest Income x 100
	TAGR	Total Assets Growth Rate	(Ending Total Assets-Beginning Total Assets)/Beginning Total Assets x 100

### 3.6 Statistical Methods for Data Analysis:

#### 3.6.1 Descriptive Statistics

In descriptive statistics, mean, standard deviation and coefficient of variation were determined.

#### 3.6.2 Correlation Analysis

Correlation measures degree of association between two or more variables. It can only indicate presence or absence of relationship. Range of correlation can vary from +1 to -1. There are three types of correlation:

- Positive Correlation: When two variables X and Y move in same direction, the correlation between the two is positive. If one variable increases, the other variable also increases and vice versa.
- Negative Correlation: When two variables X and Y move in the opposite direction, the correlation is negative. If one variable increases the other decreases and vice versa.
- Zero Correlation: The correlation between two variables X and Y is zero when the variables move in no connection with each other. If the variable X increases, Y may increase or decrease or in some situation.

Values close to +1 indicate high degree of positive correlation, and values close to -1 indicate high degree of negative correlation. Pearson's Correlation analysis is used to examine the relationship between profitability and the other bank specific variables.

#### 3.6.3 Multiple Regression Analysis

Regression is applied to explain the variation in one variable usually dependent variable by a set of independent variables. Regression measures the average relationship between two or more variables in terms of the original units of data. In Multiple Regression model, there are at least two independent variables. Multiple Regression analysis is applied for testing the model reliability and significant relation between variables. Multiple Regression analysis is applied to find out the most contributing variables in explaining the financial performance of public sector banks in India. With the value of R<sup>2</sup> the number of changes in the dependent variable compared with independent variables are assessed.

##### 3.6.3.1 Multiple Regression Model

The two linear estimated multiple regression equations are constructed as follows in order to test the relationship between the bank specific variables and financial performance:

##### 1<sup>st</sup> model with ROA (Dependent Variable)

$$Y_{ROA} = b_0 + b_1 LTDR + b_2 CTDR + b_3 LTTAR + b_4 TDTTSE + b_5 TOETTA + b_6 IC + b_7 DTER + b_8 IIGR + b_9 TAGR + \epsilon_i \quad (1)$$

**2<sup>nd</sup> model with NIM (Dependent Variable)**

$$Y2NIM=b0+b1LTDR+b2CTDR+b3LTTAR+b4TDTTE+b5TOETTA+b6IC+b7DTER+b8IIGR+b9TAGR+\epsilon_i \quad (2)$$

where: “b0” represents the constant term or y intercept of the estimated regression line, “b1” to “b9” represents the slope or beta coefficients for nine independent variables of the estimated regression lines. “LTDR”, “CTDR”, “LTTAR”, “TDTTSE”, “TOETTA”, “IC”, “DTER”, “IIGR”, “TAGR” represents the bank specific variables adopted in this study and “ $\epsilon_i$ ” represents the residual or an error term as it shows the net effect of all the variables other than X that influence on Y. The notion of the variables contains in the above two multiple regression equations are representing the following variables:

Notion	Variables
ROA:	Return on Assets
NIM:	Net Interest Margin
LTDR:	Loans to deposits ratio
CTDR:	Cash to deposits ratio
LTTAR:	Loans to Total Assets ratio
TDTTSE:	Total deposits to total shareholders' equity
TOETTA:	Total operating expenses to total assets
IC:	Interest coverage
DTER:	Debt to equity ratio
IIGR:	Interest income growth rate
TAGR:	Total assets growth rate

The findings of such research can provide necessary information through analysis on bank specific variables and their effects on financial performance, hence the study used the data from last twelve years to carried out the statistical test.

**IV. RESULTS AND DISCUSSION:**

In the present study we have applied descriptive statistics, correlation analysis, multiple regression analysis to determine the impact of the bank specific variables on financial performance of public sector banks. Here, we have taken ROA and NIM to represent the bank's profitability. Which is used in the study to measure the financial performance of public sector banks. The ratios used in this study are Return on Assets, Net Interest Margin, Loans to Deposits Ratio, Cash to Deposit ratio, Loans to total assets ratio, Total Deposits to Total Shareholders' Equity Ratio, Operating expenses to Total Assets Ratio, Interest Coverage, Debt to Equity Ratio, Interest Income Growth Rate and Total Assets Growth Rate. For calculation of such ratios, secondary data has been collected from the annual reports of selected banks, these reports were obtained from the official website of these banks. We have used SPSS software to run the statistical test on the collected data. The results of the said tests are explained in depth below. First the results from the first model are explained and later on results from the second model are explained.

**Descriptive Statistics:**

The following table shows the Descriptive Statistics of public sector banks for the period of 12 years. (2008-09 to 2019-20).

**Descriptive Statistics  
(Table 4.1)**

Variables	Mean	Standard Deviation	N	Coefficient of Variation
ROA	0.2356	0.9492	72	4.0288
NIM	2.2993	0.3569	72	0.1552
LTDR	74.0964	5.3619	72	0.0723
CTDR	5.4794	1.4300	72	0.2609
LTTAR	61.0733	3.9944	72	0.0654
TDTTSE	14.4021	1.5741	72	0.1092
TOETTA	1.5553	0.2521	72	0.1620
IC	1.1301	0.2219	72	0.1963
DTER	87.1879	98.5500	72	1.1303
IIGR	78.7907	563.0618	72	7.1462
TAGR	13.3803	10.8309	72	0.8094

Here, the coefficient of variation is derived by dividing standard deviation with mean, usually less value of C.V gives better measure of performance. In the present study loans to total assets ratio has the least value of C.V which is 0.0654; it indicates that LTTAR is the most consistent variable, in comparison Interest Coverage has the highest value of C.V which is 7.1462. It shows that it doesn't have uniformity.

**Model 1****Correlation Coefficient:**

Correlation Coefficient explains the relationship between two variables. It shows change in one Variable because of any change in other variable. The following table of correlation coefficient is based on 12 years (2008-09 to 2019-20) data from selected public sector banks taking ROA as dependent variable.

## Correlation Coefficient

(Table 4.2)

VARIABLE	ROA	LTDR	CTDR	LTTAR	TDDTSE	TOETTA	IC	DTER	IIGR	TAGR
ROA	1.000 (0.000)									
LTDR	0.529* (0.000)	1.000 (0.000)								
CTDR	0.403* (0.000)	0.355* (0.001)	1.000 (0.000)							
LTTAR	0.722* (0.000)	0.818* (0.000)	0.245* (0.019)	1.000 (0.000)						
TDDTSE	-0.074 (0.270)	-0.219 (0.033)	-0.030 (0.401)	0.095 (0.214)	1.000 (0.000)					
TOETTA	-0.283* (0.008)	0.243* (0.020)	0.315* (0.004)	-0.174 (0.071)	-0.441* (0.000)	1.000 (0.000)				
IC	0.567* (0.000)	0.413* (0.000)	0.311* (0.004)	0.341* (0.002)	-0.010 (0.465)	0.104 (0.192)	1.000 (0.000)			
DTER	0.159 (0.090)	0.332* (0.002)	0.129 (0.139)	0.057 (0.317)	-0.550* (0.000)	0.371* (0.001)	-0.075 (0.266)	1.000 (0.000)		
IIGR	0.052 (0.333)	0.146 (0.111)	0.023 (0.423)	0.100 (0.202)	0.039 (0.373)	-0.059 (0.312)	0.084 (0.241)	-0.068 (0.284)	1.000 (0.000)	
TAGR	0.644* (0.000)	0.256* (0.015)	0.256* (0.015)	0.329* (0.002)	0.004 (0.486)	-0.248* (0.018)	0.452* (0.000)	0.082 (0.246)	0.122 (0.154)	1.000 (0.000)

As per above table, we can clearly see that LTDR, CTDR, LTTAR, IC and TAGR have significant positive association with ROA while TOETTA has significant negative association with ROA. CTDR, LTTAR, IC and TAGR have significant positive association with LTDR while TOETTA has significant negative association with LTDR. LTTAR and TAGR have significant positive correlation with CTDR. TDDTSE, IC and TAGR have significant positive correlation with LTTAR. TDDTSE has significant negative association with TOETTA and DTER. TOETTA has significant positive association with DTER and significant negative association with TAGR. Lastly IC has significant positive correlation with TAGR.

## Regression analysis:

Regression Analysis is a statistics procedure that attempts to access the relationship between a dependent variable and two or more independent variable. Here, ROA (the Dependent variable) is related to 9 more independent variables which includes ATDR, CTDR, LLPTTL, TDDTSE, TOETTA, IC, DTER, IIGR and TAGR.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	0.957 <sup>a</sup>	<b>0.917</b>	0.904	0.29349	0.917	75.638	9	62	0.000	1.796

Multiple Regression Analysis  
Model Summary

(Table 4.3)

- Predictors: (Constant) TAGR, TDDTSE, IIGR, CTDR, LTTAR, IC, DTER, TOETTA, LTDR
- Dependent Variable: ROA

## ANOVA

(Table 4.4)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	58.637	9	6.515	75.638	<b>0.000<sup>b</sup></b>
Residual	5.340	62	0.086		
Total	63.978	71			

- Dependent Variable: ROA
- Predictors: (Constant) TAGR, TDDTSE, IIGR, CTDR, LTTAR, IC, DTER, TOETTA, LTDR

## Coefficients

(Table 4.5)

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B		Correlations		
	B	Std. Error				Lower Bound	Upper Bound	Zero-Order	Partial	Part
Constant	-4.671	0.795		-5.878	0.000*	-6.259	-3.082			
LTDR	-0.103	0.018	-0.582	-5.784	0.000*	-0.139	-0.067	0.529	-0.592	-0.212
CTDR	0.181	0.029	0.273	6.273	0.000*	0.124	0.239	0.403	0.623	0.230
LTTAR	0.217	0.022	0.912	9.803	0.000*	0.173	0.261	0.722	0.780	0.360
TDDTSE	-0.161	0.029	-0.267	-5.550	0.000*	-0.219	-0.103	-0.074	-0.576	-0.204
TOETTA	-1.025	0.218	-0.272	-4.702	0.000*	-1.461	-0.569	-0.283	-0.513	-0.173
IC	1.627	0.203	0.381	8.007	0.000*	1.221	2.034	0.567	0.713	0.294
DTER	0.002	0.000	0.234	4.719	0.000*	0.001	0.003	0.159	0.514	0.173
IIGR	-4.699E-0006	0.000	-0.003	-0.073	0.942	0.000	0.000	0.052	-0.009	-0.003
TAGR	0.014	0.004	0.165	3.469	0.001*	0.006	0.023	0.644	0.403	0.127

a. Dependent Variable: ROA

As per the results shown in table 4.3,  $R^2$  is 0.917 which indicates that 91.7% variation in Return on Assets can be explained by the independent variables liquidity risk, credit risk, capital adequacy, expenses management, solvency, growth rate and efficiency. Based on ANOVA results in table 4.4, the level of significance was 0.000 with an F value of 75.638 which indicates a statistically significant relationship between bank specific variables and financial performance of public sector banks in India because the P value which is 0.000 is less than 0.05 ( $P < 0.05$ ). Hence, the null hypothesis ( $H_0$ ) which states that there is no significant effect of selected bank specific factors on financial performance of public sector banks in India was rejected and alternative hypothesis which states that there is significant effect of selected bank specific factors on financial performance of public sector banks in India is accepted because the results from table 4.8 shows that the level of significance was 0.000 with an F value of 75.638 which is less than 0.05 ( $0.000 < 0.05$ ) the significant level of the study.

ESTIMATED MODEL is:

$$ROA = -4.671 - 0.103LTDR + 0.181CTDR + 0.217LTTAR - 0.161TDDTSE - 1.025TOETTA + 1.627IC + 0.002DTER - 0.000IIGR + 0.014TAGR$$

The table 4.5 shows the regression analysis of the variables under study. As per the results it can be seen that CTDR, LTTAR, IC, DTER and TAGR have significant positive impact on ROA while LTDR, TDDTSE and TOETTA have significant negative impact on ROA. Here,  $R^2$  is 0.917 which indicates that 91.7% variation in Return on Assets can be explained by the independent variables LTDR, CTDR, LTTAR, TDDTSE, TOETTA, IC, DTER, IIGR and TAGR; which also proves that the model is relatively strong.

## Model 2

### Correlation Coefficient:

Correlation Coefficient explains the relationship between two variables. It shows change in one Variable because of any change in other variable. The following table of correlation coefficient is based on 12 years (2008-09 to 2019-20) data from selected public sector banks taking NIM as dependent variable.

**Correlation Coefficient**  
(Table 4.6)

VARIABLE	NIM	LTDR	CTDR	LTTAR	TDTTSE	TOETTA	IC	DTER	IIGR	TAGR
<b>NIM</b>	1.000 (0.000)									
<b>LTDR</b>	0.545* (0.000)	1.000 (0.000)								
<b>CTDR</b>	0.350* (0.001)	0.355* (0.001)	1.000 (0.000)							
<b>LTTAR</b>	0.437* (0.000)	0.818* (0.000)	0.245* (0.019)	1.000 (0.000)						
<b>TDTTSE</b>	-0.473* (0.000)	-0.219 (0.033)	-0.030 (0.401)	0.095 (0.214)	1.000 (0.000)					
<b>TOETTA</b>	0.480* (0.000)	0.243* (0.020)	0.315* (0.004)	-0.174 (0.071)	-0.441* (0.000)	1.000 (0.000)				
<b>IC</b>	0.431* (0.000)	0.413* (0.000)	0.311* (0.004)	0.341* (0.002)	0.010 (0.465)	0.104 (0.192)	1.000 (0.000)			
<b>DTER</b>	0.296* (0.006)	0.332 (0.002)	0.129 (0.139)	0.057 (0.317)	-0.550* (0.000)	0.371* (0.001)	-0.075 (0.266)	1.000 (0.000)		
<b>IIGR</b>	0.003 (0.491)	0.146 (0.111)	0.023 (0.423)	0.100 (0.202)	0.039 (0.373)	-0.059 (0.312)	0.084 (0.241)	-0.075 (0.284)	1.000 (0.000)	
<b>TAGR</b>	0.253 (0.016)	0.256* (0.015)	0.256* (0.015)	0.329* (0.002)	0.004 (0.486)	-0.248* (0.018)	0.452* (0.000)	0.084 (0.246)	0.122 (0.154)	1.000 (0.000)

From the table 4.6 it is evident that LTDR, CTDR, LTTAR, TOETTA and DTER have significant positive correlation with NIM whereas TDTTSE has significant negative correlation with NIM. LTDR has significant positive association with CTDR, LTTAR, IC and TAGR and TOETTA. CTDR has significant positive association with LTTAR, TOETTA, IC and TAGR. IC and TAGR have significant positive association with LTTAR. TDTTSE has significant negative correlation with TOETTA and DTER. TOETTA has significant positive association with DTER and significant negative association with TAGR. Lastly, IC has significant positive association with TAGR.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	0.850	<b>0.722</b>	0.681	0.20147	0.722	17.874	9	62	0.000	1.070

#### Regression analysis:

Regression Analysis is a statistics procedure that attempts to access the relationship between a dependent variable and two or more independent variable. Here, NIM (Dependent variable) is related to 9 more independent variables which includes ATDR, CTDR, LLPTTL, TDTTSE, TOETTA, IC, DTER, IIGR and TAGR.

#### Multiple Regression Analysis Model Summary

(Table 4.7)

- Predictors: (Constant) TAGR, TDTTSE, IIGR, CTDR, LTTAR, IC, DTER, TOETTA, LTDR
- Dependent Variable: NIM

#### ANOVA

(Table 4.8)

Model	Sum of Squares	df	Mean Square	F	Sig.
<b>Regression</b>	6.530	9	0.726	17.874	<b>0.000<sup>b</sup></b>
<b>Residual</b>	2.517	62	0.041		
<b>Total</b>	9.046	71			

- Dependent Variable: NIM
- Predictors: (Constant) TAGR, TDTTSE, IIGR, CTDR, LTTAR, IC, DTER, TOETTA, LTDR

## Coefficients

(Table 4.9)

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B		Correlations		
	B	Std. Error				Lower Bound	Upper Bound	Zero-Order	Partial	Part
Constant	-0.348	0.545		-0.638	0.526	-1.438	0.742			
LTDR	-0.042	0.012	-0.627	-3.412	0.001*	-0.066	-0.017	0.545	-0.398	-0.229
CTDR	0.006	0.020	0.022	0.280	0.781	-0.034	0.045	0.350	0.035	0.019
LTTAR	0.087	0.015	0.974	5.736	0.000*	0.057	0.117	0.437	0.589	0.384
TDTTSE	-0.099	0.020	-0.437	-4.976	0.000*	-0.139	-0.059	-0.473	-0.534	-0.333
TOETTA	0.885	0.150	0.625	5.915	0.000*	0.586	1.184	0.480	0.601	0.396
IC	0.341	0.140	0.212	2.447	0.017*	0.063	0.620	0.431	0.297	0.164
DTER	- 7.769E- 005	0.000	-0.021	-0.237	0.814	-0.001	0.001	0.296	-0.030	-0.016
IIGR	7.949E- 006	0.000	0.013	0.180	0.858	0.000	0.000	0.003	0.023	0.012
TAGR	0.005	0.003	0.148	1.703	0.094	-0.001	0.011	0.253	0.211	0.114

a. Dependent Variable: NIM

As per the results shown in table 4.7,  $R^2$  is 0.722 which indicates that 72.2% variation in Net Interest Margin can be explained by the independent variables liquidity risk, credit risk, capital adequacy, expenses management, solvency, growth rate and efficiency. Based on ANOVA results in table 4.8, the level of significance was 0.000 with an F value of 17.874 which indicates a statistically significant relationship between bank specific variables and financial performance of public sector banks in India because the P value which is 0.000 is less than 0.05 ( $P < 0.05$ ). Hence, the null hypothesis ( $H_0$ ) which states that there is no significant effect of selected bank specific factors on financial performance of public sector banks in India was rejected and alternative hypothesis which states that there is significant effect of selected bank specific factors on financial performance of public sector banks in India is accepted because the results from table 4.8 shows that the level of significance was 0.000 with an F value of 17.874 which is less than 0.05 ( $0.000 < 0.05$ ) the significant level of the study.

ESTIMATED MODEL is:

$$\text{NIM} = -0.348 - 0.0421\text{LTDR} + 0.006\text{CTDR} + 0.087\text{LTTAR} - 0.099\text{TDTTSE} + 0.885\text{TOETTA} + 0.341\text{IC} - 0.000\text{DTER} + 0.000\text{IIGR} + 0.005\text{TAGR}$$

The table 4.9 shows the regression analysis of the variables under study. As per the results it can be seen that variables LTDR, LTTAR, TDTTSE and TOETTA have significance value which is less than 0.05 which shows that these variables will have significant impact on NIM. However, it can be seen that LTTAR and TOETTA has positive impact on NIM whereas LTDR and TDTTSE have negative impact on NIM.  $R^2$  is 0.722 which indicates that 72.2% variation in Net Interest Margin can be explained by the independent variables LTDR, CTDR, LTTAR, TDTTSE, TOETTA, IC, DTER, IIGR and TAGR; which also proves that the model is strong.

## V. CONCLUSION:

### Model 1:

This portion of testing results represent results for all the hypotheses specified in order to judge how these bank specific variables are related to financial performance. Multiple regression result for model 1 is as follows.

$$\text{ROA} = -4.671 - 0.103\text{LTDR} + 0.181\text{CTDR} + 0.217\text{LTTAR} - 0.161\text{TDTTSE} - 1.025\text{TOETTA} + 1.627\text{IC} + 0.002\text{DTER} - 0.000\text{IIGR} + 0.014\text{TAGR}$$

As seen above, the value of sample correlation coefficient (Multiple R) is 0.957. This result indicates that is positive linear relationship associated with bank specific variables and ROA.

According to the results, the value of  $R^2$  is 0.917, which means that about 91.7% changes in ROA can be explained by the linear effects of various bank specific variables taken in the present study. This result indicates that the current model is extremely good in explain the linear relationship between ROA and bank specific variables. It is also clear that Interest Coverage is the most contributing variables among all the variables.

In other terms, liquidity risk, credit risk, capital adequacy, expense management, solvency and growth rate have significant effect on profitability of selected public sector banks in India. In conclusion, when ROA is taken as dependent variables to represent financial performance of the public sector banks, liquidity risk, credit risk, solvency and growth rate has positive impact on the financial performance of the public sector banks; whereas; liquidity risk, capital adequacy and expense management has negative impact on financial performance of the public sector banks.



**Model 2:**

Multiple regression result for model 2 is as follows.

$$\text{NIM} = -0.348 - 0.0421\text{LTDR} + 0.006\text{CTDR} + 0.087\text{LTTAR} - 0.099\text{TDTTSE} + 0.885\text{TOETTA} + 0.341\text{IC} - 0.000\text{DTER} + 0.000\text{IIGR} + 0.005\text{TAGR}$$

As seen above, the value of sample correlation coefficient (Multiple R) is 0.850. This result indicates that is positive linear relationship associated with bank specific variables and NIM.

According to the results, the value of  $R^2$  is 0.722, which means that about 72.2% changes in NIM can be explained by the linear effects of various bank specific variables take in the present study. This result indicates that the current model is extremely good in explaining the linear relationship between NIM and bank specific variables. It is also very evident that expense management is the most contributing variable among all the variables.

In other terms, liquidity risk, credit risk, capital adequacy, expense management and solvency have significant effect on profitability of selected public sector banks in India.

The objective of this study was to determine the bank specific variables impact on financial performance of public sector banks. This study developed two multiple regression models by using two dependent variables namely ROA and NIM and nine other bank specific variables which are liquidity risk, credit risk, capital adequacy, expense management, solvency, growth rate and efficiency to measure and test the impact on financial performance.

Conferring with the statistical analysis, when ROA is taken to represent the profitability of public sector banks; liquidity risk, capital adequacy and expense management have adverse effect on the financial performance of selected public sector banks. However, credit risk, solvency and growth rate have positive effect on the financial performance of the selected public sector banks in India.

According to the statistical results, when NIM is taken to represent the profitability of public sector banks; liquidity risk and capital adequacy have negative impact on financial performance of selected public sector banks. Whereas, expense management and credit risk have positive impact on the financial performance of selected public sector banks in India.

Between the two model, model 1 with ROA as dependent variable is more reliable and better at explaining the relationship between the financial performance and bank specific variables of public sector banks.

**Recommendation of the study:**

We have only taken six bank's data to analyse the impact of bank specific variables, which limits the research considerably, this study can be further expanded by including the comparison aspect with private sector banks.

For further study, more variables can be added into the equation to expand the scope of the research. One can increase the size of the sample and cover entire banking sector to understand the impact of bank specific variables on financial performance of the banks.

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