

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

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Abstract

The major goal of this research is to study the effect of bank-specific variables on private-sector banks' financial performance. In this study, multiple regression analysis was employed. Return on assets (ROA) and return on equity (ROE) were used as profitability measures in this study to assess the profitability of private sector banks. Both the ROA and the ROE are dependent variables. The independent variables employed in the study to analyze and explain the impact of bank specific variables on the financial performance of private sector banks include liquidity risk, credit risk, capital adequacy, expense management, solvency, growth rate, and efficiency. 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 private sector banks; liquidity risk and expense management have adverse effect on the financial performance of selected private sector banks. However, solvency has positive effect on the financial performance of the selected private sector banks in India. When ROE is taken to represent the profitability of private sector banks; liquidity risk and expense management have negative impact on financial performance of selected private sector banks. Whereas, capital adequacy and solvency have positive impact on the financial performance of selected private sector banks in India.

Keywords: Banking sector, variables, financial performance, profitability, multiple regression analysis

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Introduction

Banks are the key catalysts that circulate money throughout the economy, and they are at the heart of any financial system. With the rapid changes taking place throughout the world, as well as in the Indian economy, it is critical for the general public to be aware of all pertinent financial facts. Commercial banks meet the majority of an individual's financial needs, whether they are an investor, a customer, or a businessperson. Despite the fact that non-banking financial organizations exist in the economy, they mostly serve large multinational corporations as well as private clients. Commercial banks provide financing to the general people as well as small and medium-sized businesses. The financial sector has taken a beating from all sides of the economy in recent years, as seen by their performance. The situation in the banking industry had deteriorated to the point where the Indian government had to step in to compensate public and private sector banks for their losses.

Due to the rapid increase in nonperforming assets (NPAs) and constant losses experienced by public sector banks, the Indian government decided to merge ten different public sector banks to compensate for the rising NPAs and losses. With the mergers and amalgamations of these ten banks, there are presently just 12 public sector banks left out of the 27 that existed previously. Following that, RBI took control of Yes bank, which was on the verge of failing, with the support of SBI and other private sector banks, who purchased the bank's share capital to preserve investors' interests. The study of bank-specific characteristics and their impact on bank profitability is critical in this regard. The profitability of banks is usually measured in terms of internal and external factors. Internal factors that can affect profitability are derived from bank accounts like as balance sheets and profit and loss accounts, and are hence referred to as micro or bank specific variables. The current study examines

the impact of liquidity risk, credit risk, capital sufficiency, expense management, solvency, and growth rate on the financial performance of selected private sector banks.

Any corporate entity, including a bank, relies heavily on capital to operate efficiently and effectively. Because of the critical role it plays in the economy, the banking industry has traditionally received priority in terms of security. As a result, the regulatory body places considerable emphasis on bank stability in order to improve the economy, which would eventually aid in a country's growth and development. The safety of depositors remains the primary concern of bank regulators around the world, as well as the most impressive contribution in the financial sector has been the upward revision of bank capital bases. Banks provide consumers, businesses, and governments with liquid and relatively low-risk savings and credit in a flexible quantity, as well as promoting the payments system by providing significant forms of exchange such as demand depository receipts.

The amount of equity capital and other securities that a bank retains as reserves against volatile assets as a protection against the chance of bank failure is referred to as capital adequacy. Capital adequacy is used to examine if a bank has adequate financial resources to cover the risk on its balance sheet, i.e., to reduce the chance of a bank going bankrupt. However, due to the rapidly changing economic and financial services industries, determining capital adequacy for precautionary purposes is exceedingly difficult. Risks are regarded as uncertainties that result in a negative outcome in contrast to the anticipated goal or expectations. Risk management in the financial industry is a critical source of economic system stability. Unsound risk management methods controlling bank lending are frequently at the root of financial turbulence, as evidenced by the Asian financial crisis of 1997-98.

Liquidity risk is the potential threat of not being able to liquidate an investment in a prompt and fair manner, and it is divided into execution cost (cost of immediacy) and opportunity cost (the cost of waiting). Liquidity risk can come from the management of asset positions and the general funding procedure of a bank's activities, according to this definition. It also includes the failure to fund assets at acceptable maturities and rates, as well as the inability to sell an asset in a reasonable timeframe and at a price that is equivalent to its fair value. Due to the strong link between bank profitability and economic growth, credit risk is the most significant risk exposure for banks. For banks, making the best investment decision implies getting the most return on investment while reducing credit risk. Each credit that is not repaid damages a bank's profit and equity, which might lead to the bank's failure if it is unable to pay all its debts.

If a bank's total assets surpass its total liabilities, it is called solvent. If a bank's total assets have been less than its total liabilities, it faces insolvency and is considered too as "technically insolvent." The possibility of a representative bank defaulting is reflected by insolvency risk. The solvency problem seems to be more long-term than the liquidity problem, and banks have always held on to funds and restricted lending when there has been a financial crisis previously. Many distinct determinants may influence profitability, according to the literature review. However, it is difficult to say whether or not any of these criteria are important in a bank's success, and if so, what their respective relevance is. Profitability, which is one of the most significant evaluating and assessing a bank's success, has been under strong pressure as a result of the changing financial environment. Commercial banks must be profitable in order to survive. The importance of the study on commercial bank profitability stems from the fact that it is the largest sector in the banking industry. As a result, a failure in the banking system might have far-reaching economic consequences for the entire economy

Review of Literature

Many researchers have studied the impact of bank specific variables on the financial performance of commercial banks: but these studies have mainly been done in foreign perspective and very few have been studied from Indian perspective. Some of the major studies are reviewed as below:

- (Abdullahi & Usman, 2017) had examined the impact of bank specific variables on the financial performance of Nigerian Deposit Money Banks. The main objective of the study was to examine the

impact of bank specific variables on the financial performance of Nigerian banks. The data collected for the research was secondary in nature. The time period taken was from 2007 to 2016. Correlation test and regression analysis were done as means of statistical methods for research. The results directed that there was insignificant direct relationship between operating expense and financial performance whereas there was a strong positive relationship between capital adequacy ratio and financial performance.

- (Samad, 2015) examined the determinants of profitability of commercial banks in Bangladesh. The main purpose of the study was to determine the effect of bank specific factors and macroeconomic factors on profitability of commercial banks. Sample of the study included 42 commercial banks. Secondary data was collected through annual reports of the banks for the year 2009 and 2010. Descriptive statistics, correlation analysis and panel regression analysis were applied for research purpose. The outcomes of the study suggested that bank specific factors (liquidity, credit risk and capital risk) were significant factors for determining the profitability of Bangladesh banking industry.
- (Artor NUHIU & BEKTASHI, 2017) had conducted a study on determinants of commercial banks profitability through analysis of financial performance indicators. The main objective of the study was to determine the impact of determinants of profitability on banks financial performance. Sample size taken for the study was 10 commercial banks. Secondary data was obtained from the banks for the period of 5 years (2010-2015). CAMLES analysis, correlation and regression analysis was applied for research. The findings of the study indicated that profitability of the commercial banks in Kosovo was mostly affected by bank specific variable also management efficiency and asset quality were the determinants factors because they have the greatest impact on financial performance.
- (MURERWA, 2015) examined the determinants of banks' financial performance in developing economies on Kenyan commercial banks. The main purpose of the study was to determine the industry specific, firm specific and macroeconomic factors which affect the commercial banks' financial performance. Sample of study included 44 commercial banks from Kenya. Primary data was collected through questionnaires and secondary data was obtained from the past financial statements for 3 years (2011-2013). Descriptive and inferential statistics and linear regression model were applied for research. The findings of the study suggested industry specific factors affected the financial performance to a small extent while firm specific factors had significant impact on financial performance.
- (Fawad Ahmad, 2013) examined the explanatory power of Bank specific variables as determinants of non-performing loans in Pakistani banking sector. The main objective of this study was to investigate the explanatory power of bank specific variables as determinants of NPLs. The sample taken for research consist 30 commercial banks operating in Pakistan over the period of 2006 to 2011. The statistical methods used in the present study were panel regression analysis, co-integration analysis, cross-country regression analysis and dynamic panel model. The results of the current study suggested that the increase level of non-performing loans was not because of cost efficiency of management but due to wrong forecasting and bad performance of management although banks should follow the standard rules and procedures of credit allocation to give loans cause the extensive lending of banks in boom period leads to high-risk failures.
- (Khizer Ali & Ahmed, 2011) have done empirical research on bank specific and microeconomic indicators of profitability. The main objective of the study is to provide empirical evidence on indicators of profitability in case of commercial banks of Pakistan. The study employs 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 is measured by ROA capital and credit risk have affected profitability negatively whereas size, operating efficiency, asset management had affected profitability positively. While the profitability was measured by ROE capital, portfolio composition and asset management have affected profitability positively and negatively by size, operating efficiency and credit risk.
- (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. Athanoglou & Delis, 2005) studied the effect of bank specific, industry specific and microeconomic determinants of bank profitability. Secondary data had been collected from 1985 to 2001. The investigation was 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 suggested that increased exposure to credit risk lowers profits. Labor productivity growth had positive impact whereas operating expenses has negative impact on profitability and size as well as ownership status of banks were insignificant in explaining profitability.
- (Ping-fu Lai (Brian), 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. This study covered the time period from 2005 to 2011. 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.
- (Qaisar Maqbool Khan & Abbas, 2015) have examined the impact of bank specific and microeconomic factors on banks profitability. The main objective of the present study is to find the connection between bank specific variables and macro-economic factors on bank's performance. The secondary data has been collected for the time period of 5 years (2011 to 2015) of 32 banks of Pakistan. Pooled OLS, Breusch and Pagan Lagrangian Multiplier test, Hausman test and descriptive statistics methods has been applied for the analysis. The results of the study suggest that earning per share, capital ratio, size and GDP show negative effect on banks' profitability whereas cash equivalents, spread ratio, interest rate and inflation show positive effect.
- (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.

Research Methodology

Objectives of the Study:

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

Hypothesis of the Study:

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

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

Population and Sample:

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

- Axis Bank
- Development Credit Bank
- HDFC Bank
- ICICI Bank
- Karur Vasya Bank
- Yes Bank

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)

Theoretical Framework:

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

Definition and Measurement of Study
(Table 3.1)

Variable Name	Notion	Full Form	Formula
Profitability	ROA	Return on Assets	Profit After tax/Average of Total Assets
	ROE	Return On Equity	Net Income /Shareholder's Equity
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	CAR	Capital Adequacy Ratio	(Tier 1 Capital + Tier 2 Capital) / Risk Weighted Assets
	TDDTSE	Total Deposits to Total Shareholder's Equity	(Total Deposits/Total Shareholders' Equity)
Expense Management	CTAR	Cost to Assets Ratio	(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

Statistical Methods for Data Analysis:

- Descriptive Statistics
- Correlation Analysis
- Multiple Regression Analysis
- Anova test

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:

1st model with ROA (Dependent Variable)

$$Y1ROA=b0+b1LTDR+b2CTDR+b3LTTAR+b4CAR+b5TDDTSE+b6CTAR+b7IC+b8DTER+b9IIGR+b10TAGR+ei(1)$$

2nd model with ROE (Dependent Variable)

$$Y2ROE = b_0 + b_1LTDR + b_2CTDR + b_3LTTAR + b_4CAR + b_5TDDTSE + b_6CTAR + b_7IC + b_8DTER + b_9IIGR + b_{10}TAGR + \varepsilon_i \quad (2)$$

where: “b₀” represents the constant term or y intercept of the estimated regression line, “b₁” to “b₁₀” represents the slope or beta coefficients for nine independent variables of the estimated regression lines. “LTDR”, “CTDR”, “LTTAR”, “CAR”, “TDDTSE”, “CTAR”, “IC”, “DTER”, “IIGR”, “TAGR” represents the bank specific variables adopted in this study and “ ε ” 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
ROE:	Return on Equity
LTDR:	Loans to deposits ratio
CTDR:	Cash to deposits ratio
LTTAR:	Loans to Total Assets ratio
CAR:	Capital Adequacy Ratio
TDDTSE:	Total deposits to total shareholders' equity
CTAR:	Cost to Assets Ratio
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.

Result & Discussion

We used descriptive statistics, correlation analysis, and multiple regression analysis in this study to investigate the impact of bank-specific variables on private-sector bank financial performance. We've used ROA and ROE to depict the bank's profitability in this example. Which is used to assess the financial performance of private sector banks in the study. Return on Assets, Return on Equity, Loans to Deposits Ratio, Cash to Deposit Ratio, Loans to Total Assets Ratio, Capital Adequacy Ratio, Total Deposits to Total Shareholders' Equity Ratio, Cost to Assets Ratio, Interest Coverage, Debt to Equity Ratio, Interest Income Growth Rate, and Total Assets Growth Rate are the ratios used in this research. Secondary data was gathered from a variety of sources to calculate such ratios. Secondary data was gathered for the computation of such ratios from annual reports of chosen banks, which were retrieved from the banks' official websites. The statistical test on the collected data was performed using SPSS software. The findings of the tests are detailed in the following sections. The results of the first model are explained first, followed by the results of the second model.

Descriptive Statistics:

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

Descriptive Statistics
(Table 4.1)

Variables	Mean	Std Deviation	N	Coefficient of Variation
ROA	1.1261	1.1351	72	1.0079
ROE	12.065	11.995	72	0.9941
LTDR	84.9653	13.1555	72	0.1548
CTDR	6.4687	2.0404	72	0.3154
LTTAR	54.5521	9.8404	72	0.1803
CAR	15.7504	2.0844	72	0.1323
TDDTSE	8.1865	2.2263	72	0.2719
CTAR	2.0868	0.4950	72	0.2372
IC	1.3081	0.2885	72	0.2205
DTER	81.1518	81.0118	72	0.9982
IIGR	19.6543	17.2570	72	0.8780
TAGR	18.1532	14.2369	72	0.7842

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 capital adequacy ratio has the least value of C.V which is 0.1323; it indicates that Loans to Deposit ratio is the most consistent variable, in comparison Return on Assets has the highest value of C.V which is 1.0079. It shows that it is the most inconsistent variable out of all of them and 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 private sector banks taking ROA as dependent variable.

Correlation Coefficient
(Table 4.2)

VARIABLE	ROA	LTDR	CTDR	LTTAR	CAR	TDDTSE	CTAR	IC	DTER	IIGR	TAGR
ROA	1.000 (0.000)										
LTDR	-0.617* (0.000)	1.000 (0.000)									
CTDR	0.066 (0.290)	0.022 (0.427)	1.000 (0.000)								
LTTAR	-0.016 (0.446)	0.238 (0.022)	-0.149 (0.106)	1.000 (0.000)							
CAR	0.473* (0.000)	-0.007 (0.476)	0.233* (0.025)	0.014 (0.452)	1.000 (0.000)						
TDDTSE	0.144 (0.114)	-0.655* (0.000)	-0.264* (0.013)	0.047 (0.347)	-0.408 (0.000)	1.000 (0.000)					
CTAR	-0.306* (0.004)	-0.102 (0.197)	-0.078 (0.259)	-0.293* (0.006)	-0.364 (0.001)	-0.073 (0.271)	1.000 (0.000)				
IC	0.924* (0.000)	-0.489* (0.000)	0.174 (0.072)	0.068 (0.286)	0.489* (0.000)	0.018 (0.439)	-0.296* (0.006)	1.000 (0.000)			
DTER	0.059 (0.311)	0.430* (0.000)	0.305* (0.005)	-0.010 (0.468)	0.333* (0.002)	-0.511* (0.000)	-0.279* (0.009)	0.197 (0.049)	1.000 (0.000)		
IIGR	0.298 (0.006)	-0.357* (0.001)	-0.133 (0.133)	-0.063 (0.300)	0.051 (0.337)	0.486* (0.000)	-0.207 (0.041)	0.298* (0.005)	-0.163 (0.086)	1.000 (0.000)	
TAGR	0.592* (0.000)	0.442* (0.000)	0.021 (0.431)	-0.017 (0.445)	0.313* (0.004)	0.411* (0.000)	-0.386* (0.000)	0.576* (0.000)	-0.081 (0.250)	0.665* (0.000)	1.000 (0.000)

As per above table, it is evident that CAR, IC and TAGR have significant positive correlation with ROA whereas LTDR and CTAR have significant negative correlation with ROA. LTDR has significant negative correlation with TDTTSE, IC, IIGR. CTDR has positive correlation with CAR, IC and DTER and significant negative correlation with TDTTSE. LTAAR has significant negative association with CTAR. TDTTSE has significant positive association with IIGR and TAGR; significant negative association with DTER. CTAR has significant negative correlation with IC, DTER and TAGR. IC has significant positive correlation with IIGR and TAGR. Lastly IIGR has significant positive association 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 LTDR, CTDR, LTTAR, CAR, TDTTSE, CTAR, IC, DTER, IIGR and TAGR.

Multiple Regression Analysis

Model Summary
(Table 4.3)

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	0.958	0.918	0.905	0.35003	0.918	68.575	10	61	0.000	1.961

a. Predictors: (Constant), TAGR, LTTAR, DTER, CTDR, CAR, CTAR, LTDR, IIGR, IC, TDTTSE

b. Dependent Variable: ROA

ANOVA
(Table 4.4)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	84.018	10	8.402	68.575	0.000
Residual	7.474	61	0.123		
Total	91.492	71			

a. Dependent Variable: ROA

b. Predictors: (Constant), TAGR, LTTAR, DTER, CTDR, CAR, CTAR, LTDR, IIGR, IC, TDTTSE

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	0.813	1.719		0.473	0.638	-2.624	4.250			
LTDR	-0.026	0.009	-0.301	-2.879	0.005*	-0.044	-0.008	-0.617	-0.346	-0.105
CTDR	-0.061	0.023	-0.109	-2.680	0.009*	-0.106	-0.015	0.066	-0.325	-0.098
LTTAR	-0.006	0.006	-0.051	-1.044	0.301	-0.017	0.005	-0.016	-0.133	-0.038
CAR	0.030	0.032	0.054	0.925	0.359	-0.034	0.094	0.473	0.118	0.034
TDTTSE	-0.040	0.052	-0.078	-0.761	0.449	-0.144	0.064	0.144	-0.097	-0.028
CTAR	-0.304	0.118	-0.133	-2.587	0.012*	-0.540	-0.069	-0.306	0.314	-0.095
IC	2.891	0.319	0.735	9.071	0.000*	2.254	3.528	0.924	0.758	0.332
DTER	0.000	0.001	-0.027	-0.509	0.613	-0.002	0.001	0.059	-0.065	-0.019
IIGR	-0.005	0.004	-0.076	-1.421	0.160	-0.012	0.002	0.298	-0.179	-0.052
TAGR	0.004	0.005	0.049	0.720	0.474	-0.007	0.015	0.592	0.092	0.026

a. Dependent Variable: ROA

As per the results shown in table 4.3, R^2 is 0.918 which indicates that 91.8% 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 68.575 which indicates a statistically significant relationship between bank specific variables and financial performance of private 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 private 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 private sector banks in India is accepted.

Estimated Model is:

$$\text{ROA} = 0.813 - 0.026\text{LTDR} - 0.0061\text{CTDR} - 0.006\text{LTTAR} + 0.030\text{CAR} - 0.040\text{TDTTSE} - 0.304\text{CTAR} + 2.891\text{IC} + 0.000\text{DTER} - 0.005\text{IIGR} + 0.004\text{TAGR}$$

The above table shows the regression analysis of the variables under study. As per the results it can be seen that IC have positive impact on ROA while LTDR, CTDR and CTAR have negative impact on ROA. Here, R^2 is 0.918 which indicates that 91.8% variation in Return on Assets can be explained by the independent variables LTDR, CTDR, LTTAR, CAR, TDTTSE, CTAR, 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 private sector banks taking ROE as dependent variable.

Correlation Coefficient

(Table 4.6)

VARIABLE	ROE	LTDR	CTDR	LTTAR	CAR	TDTTSE	CTAR	IC	DTER	IIGR	TAGR
ROE	1.000 (0.000)										
LTDR	-0.726* (0.000)	1.000 (0.000)									
CTDR	0.029 (0.404)	0.022 (0.427)	1.000 (0.000)								
LTTAR	-0.028 (0.407)	0.238 (0.022)	-0.149 (0.106)	1.000 (0.000)							
CAR	0.407* (0.000)	-0.007 (0.476)	0.233 (0.025)	0.014 (0.452)	1.000 (0.000)						
TDTTSE	0.312* (0.004)	-0.655* (0.000)	-0.264* (0.013)	0.047 (0.347)	-0.408* (0.000)	1.000 (0.000)					
CTAR	-0.285 (0.008)	-0.102 (0.197)	-0.078 (0.259)	-0.293* (0.006)	-0.364* (0.001)	-0.073 (0.271)	1.000 (0.000)				
IC	0.898* (0.000)	-0.489* (0.000)	0.174* (0.072)	0.068 (0.286)	0.489* (0.000)	0.018 (0.439)	-0.296* (0.006)	1.000 (0.000)			
DTER	-0.034 (0.390)	0.430* (0.000)	0.305* (0.005)	-0.010 (0.468)	0.333* (0.002)	-0.511 (0.000)	-0.279* (0.009)	0.197 (0.049)	1.000 (0.000)		
IIGR	0.417* (0.000)	-0.357* (0.001)	0.133 (0.133)	-0.063 (0.300)	0.051 (0.337)	0.486* (0.000)	-0.207 (0.041)	0.298* (0.005)	-0.163 (0.086)	1.000 (0.000)	
TAGR	0.635* (0.000)	-0.442* (0.000)	0.021 (0.431)	-0.017 (0.445)	0.313* (0.004)	0.411* (0.000)	-0.386* (0.000)	0.576* (0.000)	-0.081 (0.250)	0.665* (0.000)	1.000 (0.000)

From the above table it is evident that CAR, TDTTSE, IC, IIGR and TAGR have significant positive correlation with ROE whereas LTDR has significant negative correlation with ROE. LTDR has significant positive association with DTER and significant negative correlation with TDTTSE, IC IIGR and TAGR. CTDR has significant positive association with IC and DTER. IC have significant positive association with IIGR and TAGR. TDTTSE has significant positive correlation with IIGR and TAGR. CTAR has significant positive association with IC, TAGR and DTER. Lastly, IIGR has significant positive association with TAGR.

Multiple Regression Analysis

Model Summary

(Table 4.7)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	Df1	Df2	Sig. F Change	Durbin-Watson
2	0.971	0.944	0.934	3.0745	0.944	101.978	10	61	0.000	1.376

a. Predictors: (Constant), TAGR, LTTAR, DTER, CTDR, CAR, CTAR, LTDR, IIGR, IC, TDTTSE

b. Dependent Variable: ROE

ANOVA

(Table 4.8)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	9639.711	10	963.971	101.978	0.000
Residual	576.616	61	9.453		
Total	10216.327	71			

a. Dependent Variable: ROE

b. Predictors: (Constant), TAGR, LTTAR, DTER, CTDR, CAR, CTAR, LTDR, IIGR, IC, TDTTSE

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	-4.083	15.099		-0.270	0.788	-34.275	26.109			
LTDR	-0.283	0.079	-0.311	-3.578	0.001*	-0.442	-0.125	-0.726	-0.417	-0.109
CTDR	-0.512	0.198	-0.087	-2.583	0.012*	-0.909	-0.116	0.029	-0.314	-0.079
LTTAR	-0.059	0.049	-0.049	-1.202	0.234	-0.158	0.039	-0.028	-0.152	-0.037
CAR	0.615	0.281	0.107	2.189	0.032*	0.053	1.177	0.407	0.270	0.067
TDTTSE	0.548	0.458	0.102	1.197	0.236	-0.367	1.463	0.312	0.152	0.036
CTAR	-2.384	1.034	-0.098	-2.306	0.025*	-4.451	-0.317	-0.285	-0.283	-0.070
IC	29.046	2.799	0.699	10.377	0.000*	23.449	34.643	0.898	0.799	0.316
DTER	-0.003	0.006	-0.021	-0.470	0.640	-0.016	0.010	-0.034	-0.060	-0.014
IIGR	0.022	0.031	0.031	0.707	0.482	-0.040	0.083	0.417	0.090	0.021
TAGR	-0.033	0.048	-0.040	-0.702	0.485	-0.128	0.062	0.635	0.089	-0.021

a. Dependent Variable: ROE

As per the results shown in table 4.7, R^2 is 0.944 which indicates that 94.4% variation in Return on Equity 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 101.978 which indicates a statistically significant relationship between bank specific variables and financial

performance of private 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 private 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 private sector banks in India is accepted.

ESTIMATED MODEL is:

$$\text{ROE} = -4.083 - 0.283\text{LTDR} - 0.512\text{CTDR} - 0.059\text{LTTAR} + 0.615\text{CAR} + 0.548\text{TDTTSE} - 2.384\text{CTAR} + 29.046\text{IC} - 0.003\text{DTER} + 0.022\text{IIGR} - 0.033\text{TAGR}$$

The above table shows the regression analysis of the variables under study. As per the results it can be seen that IC have positive impact on ROE while LTDR, CTDR and CTAR have negative impact on ROE. Here, R^2 is 0.944 which indicates that 94.4% variation in Return on Equity can be explained by the independent variables LTDR, CTDR, LTTAR, TDTTSE, CTAR, IC, DTER, IIGR and TAGR; which also proves that the model is relatively strong.

Conclusion

The profitability of selected private sector banks in India is influenced by liquidity risk, credit risk, capital sufficiency, expense management, and solvency.

According to the statistical findings of the multiple regression model 1 of private sector banks, liquidity risk and expense management have a negative impact on selected private sector banks' financial performance in India; however, solvency has a favorable impact on the financial performance of a few private sector banks. Liquidity risk and expense management have a negative impact on the financial performance of selected private sector banks, according to multiple regression model 2 of private sector banks in India; however, solvency has a favorable impact on the financial performance of a few private sector banks. Model 2 with ROE as the dependent variable is more dependable and better at explaining the association between private sector bank's financial performance and bank specific variables.

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