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A Study on Relationship between Firm Size and Profitability: Selected Private Sector Banks in India

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ABSTRACT

The study is to identify the relationship between firm size and profitability of selected private sector banks in India. This study is classified as quantitative research followed with a descriptive research design. The Reserve Bank of India's publication of annual trend and progress of banking in India in June 2018, indicates that the total number of private sector banks in India is 21. The study selected the first five banks based on the hierarchy of the value of its total assets.

The study is based on secondary data and it has been collected from the annual reports of the respective banks. The period of study is five years from 2015 to 2019. Firm size such as bank size is measured through the natural log of the book value of deposits, assets, and advances (independent variables) and the profitability is measured through the natural log of the book value of the net profit of the bank (dependent variable). The data analysis includes descriptive statistics, correlation matrix, and linear regression. On the basis of the analysis, the study found that there is a significant relationship between independent variables and the dependent variable. Further, there is a positive correlation and statistically significant between these variables.

KEYWORDS: *Bank size, deposits, assets, advances, net profit*

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1. INTRODUCTION

Profitability is the business result of an organization to utilize its resources to generate revenues in excess of its expenses. Profitability is one of the major performance factors of banks, it is a major building block for analyzing the performance as a whole. An efficient profitability level among the banks is essential for the development of a country as a whole. One of the important functions of the bank is lending money, through lending, the banks encourages industry development as well as entrepreneurial skills in the country, the result of these effect increases the employment and income. Controversially, the low level of profitability of the bank not able to lend money and correspondingly not able to generate revenue for its survival.

Bank deposits constitutes the main source of funds for bank. The bank receives deposits from the public on various accounts. Resource mobilization is the main factor to determine the operational performance of the bank. The private sector banks in India mobilize the deposits through three categories are demand deposits, savings bank deposits and term deposits. Total assets of the bank includes various items. In general the total assets includes cash and bank balances with Reserve Bank of India, balances with banks and money at call short notice, investments, advances, fixed assets and other assets. Banks provide the funds to an individual or an entity for specific purpose that is repayable after specific duration of time with interest is called bank advance. To analyse the private sector banks balance sheet in annual report, the bank advances are classified in to two categories. The first category includes bills purchased and discounted, cash credits, overdrafts and loans payable on demand and term loans. The second category includes secured by tangible assets, covered by bank/Government guarantees and unsecured. Profit is the financial benefit realized when revenue earned from the business. The study consider the bank net profit for the analysis. The private sector banks derives the net profit for the year by deducting the expenditure from the income. The general category of the income are interest earned and other income. The expenditure includes interest expended, operating expenses and provisions and contingencies.

As per the record of Reserve Bank of India (2018) there are 21 private sector banks are functioning in India. Deposits, total value of assets and advances are the important criteria in the bank operation. The current study analyses the relationship between these factors (bank size) with profitability of the bank. The profitability is measured as net profit of the year. The changes in the bank size make some changes in the profitability of the bank. Therefore it is necessary to analyse the relationship between these two variables

Objectives of the study

The main objective of the study is to identify the relationship between firm size and the profitability of private sector banks in India. The sub objective of the study are as follows.

A. To identify the relationship between firm size (Total bank deposits) and profitability (Net profit for the year)
B. To identify the relationship between firm size (Total bank assets) and profitability (Net profit for the year)
C. To identify the relationship between firm size (Total bank advances) and profitability (Net profit for the year)

2. REVIEW OF LITERATURE

An essential part of the research is literature review, the present study reviewed various literatures related to firm size and profitability. Most of the studies have identified the positive result of firm size and profitability in different sectors. The selection of the items for measuring firm size and profitability is differ from one industry to another industry. Most of the studies related to manufacturing sectors measures the firm size through total sales and total assets. On the same time the banking sector measures the firm size through deposits, assets and advances.

A study conducted by Niresh, Aloy, and Velnampy Thirunavukkarasu (2014) selected few manufacturing firms and analyses the effect of firm size and profitability. This study considered total assets and sales as a measure of firm size and return on assets and net profit are applied as indicator of profitability. This study disclosed that there is no indicative relationship between the firm size and profitability of listed manufacturing industries. Another study (John, Akinyomi and Adebayo, Olagunju, 2013) also analyses the firm size and profitability of selected manufacturing companies applied total sales and total turnover as a proxy for measuring the firm size and return on assets used as a proxy for profitability. The study revealed that firm size has a positive effect on the profitability.

Akbas, Halil Emre, and Hasan Agan Karaduman (2012) study selected few manufacturing companies and analyses the effect of firm size on profitability, this study considered total sales and total assets are the representation of firm size and return on assets is the factor for profitability. A study consider the total number of employees in the organization as a factor for firm size. The study concluded that there is positive impact on these two factors. The indicators of firm size consider assets, sales and total number of employees and profitability indicator is operating return on assets (Isik, Ozcan, Esra Aydin Unal, and Yener Unal, 2017). This study revealed that there is a linear relationship between firm size and profitability.

Sritharan, Vinasithamby (2018) conducted a study on firm size and influence on profitability, the study applied total sales as firm size measure and return on assets considered as profitability measure. This study discloses the firm size influences on profitability of diversified holding companies. Capital structure is also having significant role in profitability of the firm, Yapa Abeywardhana, Dilrukshi (2015) analysed relationship between capital structure and profitability. Long term debt to total assets ratio as a measure of capital structure. As a result of the study reveals that there is a negative relationship between Capital structure and profitability

Abeyrathna, S. P. G. M., and A. J. M. Priyadarshana (2019) study reveals that the total assets and total sales of manufacturing companies are considered as firm size and return on assets and net profit are the indicator of profitability of the firm. The result of the study stated that there is no considerable impact of firm size on profitability. Firm size, growth and profitability (Inder Sekhar Yadav and Phanindra Goyari (2011) the book examines the relationship between the firm size, growth and profitability of 164 Indian companies.

Sritharan, Vinasithamby (2015) conducted a study on the influence of firm's size on firm's profitability of hotel industries in Sri Lanka. According to the study firm size is positively related to profitability measure of return on assets and also study revealed that there is a negative relationship between total debt ratio and profitability. Akbas and Karaduman (2012) selected few manufacturing sectors listed in Islamabad stock exchange and examine the affect of firm size on profitability. The outcome of the study revealed that firm size and profitability has positive effect.

A study organized by Ghafoorifard et al. (2014) and analysed the relationship between the firm size and financial performance of the companies. The result of the research indicated that there is a significant positive relationship between these two variables. Another study conducted by Banchuenvijit (2012), analysed the relationship between firm sizes with profitability. The firm size measured through total sales, total assets and few other variables. The profitability is calculated in the form of ratios of Return on assets, return on sales and return on equity. The outcome of the study indicated that there is no relationship between firm size and return on assets of the selected companies. Kebewar, Mazen (2012) performed a study to analyse the effect of debt on corporate profitability, the study selected 2240 French non listed companies of service sector, calculated various profitability ratio (return on assets, profit) and the study revealed that debt ratio has no effect on profitability.

A study conducted in Korea by Yoo, Seungkyu, and Jaejun Kim (2015) analyse empirically the dynamic relationship between growth and profitability of construction companies as small and medium size. The outcome of the research indicated that the construction companies maintains the balance between these two variables. Abor, Joshua (2005), conducted a quantitative study, selected 130 management consulting firms in Sweden and investigate the relationship between capital structure and profitability. The capital structure defined as total debt to total assets and short-term debt to assets. The profitability is calculated as return on assets, the result indicated that the leverage ratio not captured profitability.

Charles-Anyaogu, Nneka, Ucheoma I. Ezirim, and Chinedu B. Ezirim (2018) examines the impact of capital structure and profitability of listed Nigerian banks. The data collected for this study related to 13 selected banks. The leverage and profitability are the two variables were examined and the result indicated that positive relationship between these two variables in long run further negative but significant relationship between leverage and profitability. Roman, Angela, and I. Tomuleasa (2012), analyses the factors determine the profitability of selected 86 commercial banks in the new EU member states. Various factors are analysed, one of the factors is bank size. The profitability is measured through the common method of ratio such as return on assets and equity. The result of the research indicated that the bank profitability of most countries significantly influenced with various factors including bank size. Shehzad, Choudhry Tanveer, Jakob De Haan, and Bert Scholtens (2013) study conducted on 148 countries of 15,000 banks to investigate the relation between size, growth and profitability of banks. The bank size is measured through total value of bank assets and total value of equity. The profitability is measured by return on equity. The outcome of the study revealed that bank growth and profitability are independent each other.

The profitability default is affected by various factors, one of the study analyses (Parrado-Martínez, Purificación, Pilar Gómez-Fernández-Aguado, and Antonio Partal-Ureña (2019) the profitability default of European banks has been affected by several factors, among the factors, size of banks occupies a significant role as well as impact on their risk. In banking sector the firm size is mainly considered as an assets, deposits and loans. Customer deposits and loans are the measure of bank size and it relate to profitability of the bank. Mania, Kiragu and Kamau (2019) study on relationship between firm size and profitability of commercial banks, consider loans and deposits are the measure of firm size.

Based on the literate survey there are mixed result of firm size and profitability and specifically in banking sector. Some studies mentioned that there is a relation between these two variables, few other studies indicated not having relationship. Thus the following hypotheses were established to test this study on the basis of literature discussion.

Hypotheses of the study

H1 Total bank deposits has significant relationship with profitability

H2 Total bank assets has significant relationship with profitability

H3 Total bank advances has significant relationship with profitability

3. RESEARCH METHODOLOGY

Research Method

The quantitative research method has been applied in this research. The quantitative research design is specific, structured and possible to test validity and reliability (Kumar, Ranjit, 2019). The research design applied in this research is descriptive research. It analyses the intended relationship between the private sector bank's firm size and its profitability.

Variables of the study

The study analyses relationship between private sector banks firm size such as deposits, assets and advances with profitability of the banks.

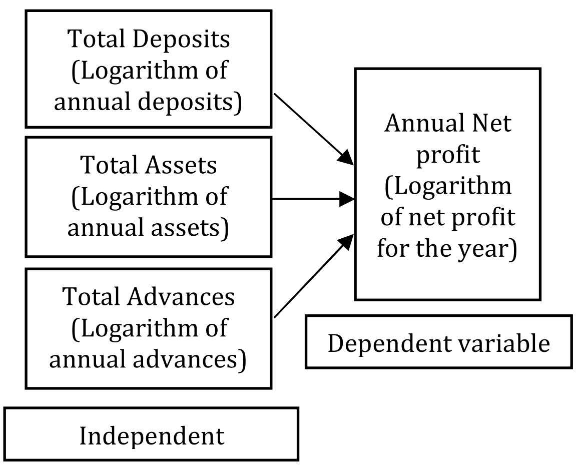
Table1 Variables of the study

Variables of the study		Description and Measurement
Independent variables	Total Deposits	Logarithm of Total Deposits
	Total Assets	Logarithm of Total Assets
	Total Advances	Logarithm of Total Advances
Dependent Variable	Net Profit for the year	Logarithm of Total Net profit for the year

Research framework

The variables of the study has been identified through literature review. The following is the research framework of the study.

Figure1 Research Framework



Population and sampling

Annual trend and progress of Banking in India (June, 2018) published by Reserve bank of India shows that there are 21 private sector banks in India. The study selects five private sector banks for analysis. The first five banks has been selected based on the total value of assets held by the bank. The selected banks are in the order of total value of assets are ICICI bank, Axis bank, HDFC bank, Yes bank and Kotak Mahindra bank. This study is mainly based on secondary data, the data has been collected from the annual reports of the respective banks for the period of 5 years from 2015 to 2019. The data collected is sufficient for to establish the relationship between the variables as they collected 105, which derived from the multiplication of 21 private sector banks and number of years 5.

Statistical tools applied for data analysis

The data interpretation includes descriptive statistics, correlation matrix and linear regression technique to test hypothesis. The average of each variable for the study period has been considered for the overall picture of analysis. The regression model of the study is presented below where used to identify the study variables.

The model is given below:

$$Y_1 = \alpha_1 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \ (1)$$

Where

$Y1$ = Logarithm of Annual Net Income

$\beta_1 X_1$ =Logarithm of Total Deposits

$\beta_2 X_2$ =Logarithm of Total Assets

$\beta_3 X_3$ =Logarithm of Total Advances

α_1 = Intercept

ε = Error term

4. RESEARCH ANALYSIS

Descriptive statistics

Table 2 indicated that the variables of the study are positive and the mean value lies in appropriate order. It reveals that the selected private sector banks deposit, assets, advances and net profit for the study period is positive. Further the table shows that the variability of the study variables, the higher value of standard deviation indicates better extent of data, smaller standard deviation demonstrate the data values are around the mean, the study indicates that the standard deviation are moderated in all variables. Further table shows that the skewness value of the variables, skewness describes whether the data distribution is symmetric or non-symmetric. According to Bulmer (1979) rule of thumb, the skewness is lies between -1 and -0.5 the distribution is moderately skewed. The data related to log deposit and log assets are very near to -0.5 and log advances and log net profit are more than -0.5, therefore all the data are negatively skewed and left tail is longer.

Table2 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
Log DEPOSIT	25	8.86	9.96	9.4934	.30855	-.477
Log ASSETS	25	9.13	10.11	9.7041	.30089	-.466
Log ADVANCES	25	8.88	9.94	9.4828	.29832	-.565
Log NP	25	6.67	8.35	7.7627	.37651	-.929
Valid N	25					

Correlation Matrix

The study presents correlation matrix showing correlation coefficient between the study variables. Each cell in the table 3 indicates the correlation between two specified variables.

Table 3 Correlation Matrix

		Log DEPOSIT	Log ASSETS	Log ADVANCES	Log Net Profit
Log DEPOSIT	Pearson Correlation	1	.980**	.991**	.564**
	Sig. (2-tailed)		.000	.000	.003
Log ASSETS	Pearson Correlation	.980**	1	.993**	.572**
	Sig. (2-tailed)	.000		.000	.003
Log ADVANCES	Pearson Correlation	.991**	.993**	1	.570**
	Sig. (2-tailed)	.000	.000		.003
Log NET PROFIT	Pearson Correlation	.564**	.572**	.570**	1
	Sig. (2-tailed)	.003	.003	.003	

**. Correlation is significant at the 0.01 level (2-tailed).

As per the information from table 3 the p value is .003 in all the three cases (Deposits, assets and advances with net profit) this value is less than 0.01 therefore the hypotheses are accepted such as there is a significant relationship between deposits, assets and advances with net profit. Further the r value for the three cases are .564, .572 and .570 respectively, it indicates that the correlation relationship exists with variables.

Regression summary

The regression equation model is tested through linear regression model and the results presented in table 4

Table4 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.572[a]	.327	.231	.33011

Predictors: (Constant), Log ADVANCES, Log DEPOSIT, Log ASSETS

The table 4 indicates that the R value is .572 it shows there is a moderate correlation between the observed and predicted value of the net profit of the banks (Dependent variable). R square explains the proposition of variance in net profit of the banks which can be explained by deposits, assets, advances (independent variables). The value of R^2 is .327 which shows moderate strength of association between the variables.

ANOVA Table

Statistical significance of the model has been presented in table 5 (ANOVA), it provides information related to observed value of F and significance.

Table5 ANOVA

Model	Sum of Squares	df	Mean Square	F	sig.
Regression	1.114	3	.371	3.407	.036a
Residual	2.288	21	.109		
Total	3.402	24			

The table 5 indicated that the p value of the test result shows .036, it is less than 0.05 significance level, therefore the presented model is statistically significant and the hypotheses is accepted. It indicates the independent variables have positive and significant influence on dependent variable.

Coefficients

Table6 Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.840	2.196		.383	.706
Log DEPOSIT	.072	1.631	.059	.044	.965
Log ASSETS	.588	1.968	.470	.299	.768
Log ADVANCES	.056	2.856	.044	.019	.985

The coefficient for Log Deposits is .072, every unit increase in deposits, a 0.072 unit increase in net profit is predicted, on the same time all other variables are constant. The coefficient for log Assets is .588 and it is positive. Therefore every unit increase in bank assets, a .588 unit increase in net profit. The assets contribute more unit of increase in net profit compare with all other variables. The coefficient value of advances shows .056, proportionately every unit increase in advances, a .056 unit increase in net profit. In overall the result indicates that a positive and significant relationship between the variables.

CONCLUSION

The present research work is an attempt to examine the relationship between (selected private sector banks in India) bank deposits, assets, advances and net profit of the bank for the period of five years from 2015 to 2019.The study indicates that there is a significant relationship between the independent variables (deposits, assets and advances) and dependent variable (net profit). The study is selected only 5 leading private sector banks in India is the limitations of the study. There is an opportunity for the same research to conduct in large scale by selecting all the banks in India and also consider few other factors of independent variables such as capital, borrowings, fixed assets etc.

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