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Capital Structure and Financial Performance of Banks

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ABSTRACT

The paper analyses the influence of capital structure on the financial performance of banks in India. The study covers a period of five years from 2011 to 2015 and 21 banks are selected for the study. The objectives of the study are to examine the impact of capital structure on the financial performance of banks and to analyse the interrelation between financial leverage on the financial performance of banks. To measure the capital structure, debt to total assets ratio and debt to equity ratios are used and to measure the financial performance, return on capital employed (ROCE), net profit ratio (NP) and net interest margin (NIM) are used. Regression analysis has been carried out to test the impact of capital structure on profitability considering capital structure as an independent variable and profitability as the dependent variable. The results of the study indicate that the capital structure has a significant impact on the financial performance of the banks in India.

Keywords: Capital structure, financial performance of banks, Debt to equity, Debt to total assets.

1. INTRODUCTION

Capital structure decision is vital for every business organization. This decision is important because of the need of maximizing the returns and the impact of such decisions on the firm's ability to deal with the competitive environment. The firm can choose any proportion of debt and equity. It can issue more debt and less equity or less debt and more equity. In capital investment decision capital structure decision is the

important one as it affects the profitability. Therefore, proper care must be given while capital structure decision is made. While comparing debt with equity, debt is less costly but it has some limitations as it affects the company's leverage after a certain limit. A debt to equity is calculated by dividing total liabilities by stockholder's equity. It indicates the proportion of debt and equity. A high debt equity ratio means company is highly levered and it is more depending on debt than equity. Due to additional interest expense, it can result in volatile earnings.

Profitability is the ability of a firm to make profit from all their business activities. It shows by using all the available resources in the market how efficiently the firm makes profit. In business, profit means the excess of income over expenditure and it's the measure of a firm's performance. In the context of banking industry, size of the bank may vary based on its number of branches or the volume of the business held. So, to measure their performance profitability is an absolute measure. Profitability is an index to measure efficiency. The net profit is considered as a better measure for firm's performance. In addition to the net profit, net interest margin and the return on capital employed are also considered for assessing the profitability.

2. LITERATURE REVIEW

Vitor, D.A. & Badu, J. (2012) studied the capital structure and performance of listed banks in Ghana. The results indicate a negative relationship between capital structure and financial performance. High level gearing among listed banks lead to over dependency on short term debt due to which there was high lending rate and low level of bond market activities. The regression analysis revealed that there is an inverse relationship between capital structure and banks performance in terms of return on equity and Tobin's Q.

Velnampy, T. & Niresh, J.A. (2012) examined the relationship between capital structure and profitability of ten listed Srilankan banks over the past 8-year period from 2002 to 2009.The data was analysed using descriptive statistics and correlation analysis to find out the association between the variables. Results of the analysis show that there is a negative association between capital structure and profitability except the association between debt to equity and return on equity. Further the results suggest that 89% of total assets in the banking sector of Sri Lanka are represented by debt, confirming the fact that banks are highly geared institutions. The outcomes of the study may guide banks, loan -creditors and policy planners to formulate better policy decisions as far as the capital structure is concerned.

Abbadi, S.M. & Abu-Rub, N. (2012) examined the relationship between the market efficiency and capital structure of Palestinian financial institutions. ROE, ROA, total deposit to assets, total loan to assets were used to measure the impact of capital structure on bank efficiency. The impact of all these variables on bank market value was measured by Tobin's q which showed a negative effect on the market value of the bank, a strong and positive relationship between market value and ROA and bank deposits to total deposits.

Taani, K. (2013) examined the impact of capital structure on performance of Jordanian banks. To estimate the relationship between capital structure and banking performance multiple regressions is applied on performance indicators and capital structure variable. Net profit, return on capital employed and net interest margin was used to measure the bank performance which showed positive relation with total debt, but total debt is insignificant in determining return on equity in the banking industry of Jordon. Saeed et.

al., (2013) examined the impact of capital structure on performance of Pakistani banks. The findings of study validated a strong positive dependence of short term debt to capital (STDTC) on all profitability measures (ROA, ROE and EPS). Long term debt to capital (LTDTC) having a negative relationship with return on assets (ROA), return on equity (ROE) and earnings per share (EPS). Total debt to capital and firm size (SIZE) experienced a strong optimistic connection with all dependent variables (ROA, ROE and EPS). The study revealed that there exists a positive relationship among capital structure and profitability of Pakistani banks.

Mujahid et. al., (2014)studied the impact of capital structure on bank performance in Pakistan. The results showed that capital structure has positive impact on bank performance. Anarfo Bugri (2015) examined capital structure and banks performance in sub-Sahara Africa by the using the total debt ratio as a proxy for capital structure since it includes both the short-term and long-term debt ratios. The results show that the capital structure of banks in Africa is statistically insignificant. This implies that capital structure do not impact banks performance that is, banks' performance does not depend on their capital structure but rather it is capital structure that depends on banks' performance.

Goyal, A.M. (2013) studied the impact of capital structure on performance of listed public-sector banks in India. For establishing relationship between return on equity, return on assets and EPS with capital structure, regression analysis has been used which showed a positive relationship of short term debt with profitability. Rajkumar, P. (2014)examined the relationship between the financial leverage and the financial performance of the John Keells Holdings plc in Sri Lanka during the periods of 2006-2012. The findings of the study show a negative relationship between the financial leverage and the financial performance of the John Keells Holdings plc. But the financial leverage has a significant impact on the financial performance of the John Keells Holdingsplc in Sri Lanka.

Hawaldar et. al., (2016a) evaluated the financial performance of retail and wholesale Islamic banks in Bahrain from 2009 to 2013 and found that operating efficiency of wholesale Islamic banks was better than retail Islamic banks for the period of 2009-2013 which was evident from asset utilization ratio. Using the result of correlation analysis of wholesale Islamic banks between various performance indicators, their study showed the existence of significant positive correlation of cost to income ratio with operational efficiency ratio and staff cost to income ratio. A similar study by Hawaldar et. al., (2016b) on the evaluation of financial performance level of retail and wholesale conventional banks in Bahrain from 2009 to 2013 confirmed that the operating efficiency of wholesale banks was superior to the retail conventional banks. The empirical results suggested no significant difference between the performance of retail and wholesale conventional banks operating in Bahrain. Another study by Hawaldar et. al., (2017)examined the performance of commercial retail banks (conventional and Islamic) in Bahrain and financial ratios were used for the period of 15 years 2001-2015. The results revealed that conventional retail banks, except for Bahrain development bank, have consistent performance in return on assets and return on equity while among the Islamic retail banks, the performance of Kuwait finance house is satisfactory in terms of profitability. The data also shows that all banks have satisfactory risk assets ratio. The commercial banks' profitability and capital adequacy as well as their profitability and efficiency are statistically correlated. There is a significant difference in the capital adequacy but no significant difference in profitability and liquidity was found among the listed commercial retail banks.

Pinto & Quadras (2016) examined the impact of capital structure on financial performance Indian banks. The study covered a sample of 21 banks from both public sector and private sector. A period of five years was considered for the study. Three variables, viz., Net Profit, Net Interest Margin and Return on Capital Employed were considered as profitability control variables for the study. The debt to equity and debt to total assets have been used as proxy for capital structure. It is observed that the financial risk of the banking industry is reducing as their debt to equity ratio is decreasing year by year. The results of the hypothesis testing reveals significant impact of debt equity ratio and debt to total assets on the net profit, net interest margin as well as return on capital employed indicating that capital structure has a significant impact on the financial performance in the banking industry.

Need for the Study

The present study focused on the impact of capital structure on financial performance of banks in India. Every investment decision taken by the manager affects performance of the banks. Profitability of the bank also depends upon the proportion of debt and equity in the capital structure. The difficulty associated with designing an optimum capital structure policy to enhance profitability is the primary reason for undertaking the present study.

Objectives and Hypotheses of the Study

1. To examine impact of capital structure on the financial performance of banking industry.
2. To analyse the interrelation between financial leverage on the financial performance of banking industry.

Hypotheses

The following hypotheses were formulated to study the impact of capital structure on financial performance of banking industry.

H1: Debt to equity has no significant impact on net profit

H2: There is no significant impact of debt to total assets on net profit

H3: Debt to equity has no significant impact on net interest margin

H4: Debt to total asset has no significant impact on net interest margin

H5: There is no significant impact of debt to equity on return on capital employed

H6: Debt to total assets does not have a significant impact on return on capital employed

3. RESEARCH METHODOLOGY

The present study is undertaken to find out the impact of capital structure on financial performance banking industry. To measure the capital structure, capital structure ratios like, debt to total assets ratio and debt to equity ratios are used and to measure the financial performance profitability ratios return on capital employed (ROCE), net profit ratio (NP) and net interest margin (NIM) are used. Regression analysis is carried out to test the impact of capital structure on profitability where capital structure is independent variable and profitability is the dependent variable.

Variable Description

Independent variable: Debt to equity and debt to total assets.

Dependent variable: Net profit, net interest margin, return on capital employed.

Data and Sample

As the study focuses on the impact of capital structure on profitability of banks India by taking a sample of 21 banks for the period of five years from 2011 to 2015. The selected 21 banks are: Axis Bank, Bank of Baroda, Canara Bank, City Union Bank, Corporation Bank, Dhanalaxmi Bank, Federal Bank, HDFC Bank, ICICI Bank, IDBI Bank, Indian Overseas Bank, Indusind Bank, Karnataka Bank, Kotak Mahindra Bank, Oriental Bank of Commerce, South Indian Bank, State Bank of India, Syndicate Bank, Union Bank of India, Vijaya Bank and Yes Bank.

Model Specification

Four regression models are formulated to check the relationship between capital structure and banking performance. The general model for this study is represented by;

$$P = f(CS)$$

This shows that performance is a function of the capital structure.

P = Performance

CS = Capital structure

Performance is measured with the help of three ratios namely Net profit, return on capital employed (ROCE), net interest margin (NIM). Capital structure is measured through Debt to total assets and Debt to Equity ratio. The regression model is given below.

Model 1:

Net Profit = â0 + â1 × 1 .....

Net Profit = â0 + â1 × 2 .....

Model 2:

Net Interest Margin = â0 + â1 × 1 .....

Net Interest Margin = â0 + â1 × 2 .....

Model 3:

Return on Capital Employed = â0 + â1 × 1 .....

Return on Capital Employed = â0 + â1 × 2 .....

where;

X_1 = Debt to Equity ratio

X_2 = Debt to Total Assets ratio

â0 = Constant

Table 1
Variables and measurements

Concept	*Variable*	*Measurement*
Capital structure	Debt to equity	Debt/Equity
	Debt to total assets	Debt/ Total assets
Financial performance	Net profit ratio (NP)	Net Profit/Sales
	Net interest margin (NIM)	(Investment Returns-Interest Expenses) /Average Earning Assets
	Return on capital employed (ROCE)	Profit Before Interest and Tax/Capital Employed

Discussion and Analysis of the Results of the Study

The results of the study are discussed in this section.

Table 2
Various ratios

Variables	*Period*				
	2011	*2012*	*2013*	*2014*	*2015*
Debt to equity ratio (%)	13.99	13.34	13.11	12.45	12.39
Debt to total assets (%)	88.70	89.07	89.22	89.51	89.19
Net Profit Ratio (%)	11.36	12.02	10.19	10.17	8.09
Net Interest Margin (%)	3.69	3.29	3.13	2.74	2.65
Return on capital employed (%)	9.36	9.12	10.09	10.26	10.06

Debt equity ratio explains the proportion of debt and equity used in financing the assets. Higher the debt equity ratio higher is the proportion of debt used. The data shows that debt to equity ratio was high in 2011 i.e. around 14%. It has decreased during the period of study. Debt to total assets indicates the proportion of total assets financed by debt. Higher the ratio higher is the leverage. Debt to total assets ratio of the banking industry does not show much variation during the sample period. Net profit ratio was high in 2012 i.e. 12.02%. However, it has decreased to 8.09% in 2015. The data indicates that the banking industry showed poor performance in 2015. For net interest margin for the period of study the data indicates a decreasing trend. Return of capital employed (ROCE) was 9.36% in 2011which reduced to 9.12% in 2012. For the years 2013 and 2014 a rise in ROCE is documented i.e. 10.09% and 10.26%. Overall the position of ROCE has improved during the period of the study.

Descriptive Statistics and Regression Analysis

The following section presents the descriptive statistics of the variables under study for banking industry and the regression results to measure the impact of capital structure on profitability of banking industry. The Table below presents the descriptive statistics of the variables under study.

Table 4 shows a summary of descriptive statistics for dependent and independent variables for the banking industry. It is clear from the above table that the mean net profit ratio was 10.36% mean net interest margin was3.0990 and mean ROCE was 9.7791 for the banking industry for the period under study. The debt to equity ratio stood at 13.04% and debt to total assets stood at 89.14% on an average for the banking industry.

Table 3
Descriptive Statistics

	N	*Minimum*	*Maximum*	*Mean*	*Standard Deviation*
Debt to equity	105	3.91	23.44	13.0456	4.78385
Debt to total assets	105	80.07	93.94	89.1403	3.58630
Net profit	105	-18.45	17.96	10.3670	5.35682
Net interest margin	105	1.68	6.83	3.0990	0.90632
Return on capital employed	105	7.19	12.77	9.7791	1.13062

Regression Analysis

The following Tables show regression results of banking industry.

Table 5
Model Summary I

Model	*Dependent variable*	*R*	R^2	*Adjusted R Square*	*Standard Error of the estimate*
1	Net Profit	0.508	0.258	0.251	4.63556
2	Net Interest Margin	0.518	0.269	0.262	0.77880
3	Return on Capital Employed	0.519	0.269	0.262	0.97111

Dependent variables: NP, NIM, ROCE
Predictors: (constant), Debt to Equity Ratio

The above table shows the coefficient of determination for the variables. The R^2 values were 0.258,0.269, 0.269 for net profit, net interest margin and return on capital employed respectively.

Table 6
Results of ANOVA

Model	*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig*
1. Regression	771.033	1	771.033	35.881	0.000[b]
Residual	2213.306	103	21.488		
Total	2984.339	104			
2. Regression	22.955	1	22.955	37.846	0.000[b]
Residual	62.473	103	0.607		
Total	85.428	104			
3. Regression	35.808	1	35.808	37.970	0.000[b]
Residual	97.135	103	0.943		
Total	132.943	104			

Dependent variables: NP, NIM, ROCE
Predictors: (constant), Debt to Equity

The ANOVA table showsa significant relationship in case of model1, model 2 and model 3 as indicated by *p* value of 0. 000.It is clear that net profit, net interest margin and ROCE are significantly related to the Debt to Equity ratio.

Table 7
Model Summary II

Model	*Dependent variable*	*R*	R^2	*Adjusted R Square*	*Standard Error of the estimate*
1	Net Profit	0.545	0.297	0.290	4.51240
2	Net Interest Margin	0.631	0.398	0.392	0.70688
3	Return on Capital Employed	0.390	0.152	0.144	1.04620

Dependent variables: NP, NIM, ROCE
Predictors: (constant), Debt to Total Assets

The table above shows the coefficient of determination for the variables. The R^2 values were 0.297, 0.398, 0.152 for net profit, net interest margin and return on capital employed respectively.

Table 8
Results of ANOVA

Model	*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig*
1. Regression	887.082	1	887.082	43.566	0.000[b]
Residual	2097.257	103	20.362		
Total	2984.339	104			
2. Regression	33.961	1	33.961	67.967	0.000[b]
Residual	51.466	103	0.500		
Total	85.428	104			
3. Regression	20.206	1	20.206	18.461	0.000[b]
Residual	112.737	103	1.095		
Total	132.943	104			

Dependent variables: NP, NIM, ROCE
Predictors: (constant), Debt to total assets

The *p* value for model 1 is 0.000, which is less than 0.05. Therefore, it is highly significant and changes in the independent variable (debt to total assets) will have an impact on the dependent variable (net profit). Model 2 and 3 also have *p* value as 0.000 which again shows that changes in debt to equity will influence net interest margin and return on capital employed.

Table 9
Coefficients

Model	*Unstandardized Coefficients*		*Standardized coefficient*	*T*	*Sig.*	*95.0% Confidence Interval for B*	
	B	*Std. Error*	*Beta*			*Lower Bound*	*Upper Bound*
1. NP							
(Constant)	17.792	1.320		13.484	0.000	15.175	20.409
Debt to Equity	-0.569	0.095	-0.508	-5.990	0.000	-0.758	-0.381
Debt to total assets	-0.814	0.123	0.545	-6.600	0.000	-1.059	-0.570

Model	*Unstandardized Coefficients*		*Standardized coefficient*	*T*	*Sig.*	*95.0% Confidence Interval for B*	
	B	*Std. Error*	*Beta*			*Lower Bound*	*Upper Bound*
2. NIM							
(Constant)	4.380	0.222		19.758	0.000	3.941	4.820
Debt to Equity	-0.098	0.016	-0.518	-6.152	0.000	-0.130	-0.067
Debt to total assets	-0.159	0.019	-0.631	-8.244	0.000	-0.198	-0.121
3. ROCE							
(Constant)	11.379	0.276		41.165	0.000	10.831	11.928
Debt to Equity	-0.123	0.020	-0.519	-6.162	0.000	-0.162	-0.083
Debt to total assets	-0.123	0.029	-0.390	-4.297	0.000	-0.180	-0.066

Table 10
Resultsof Hypotheses Testing

Number	*Hypotheses*	*Results*	*Tool used*
H1	Debt to equity hasno significant impact on net profit	Rejected	Regression
H2	There is no significant impact of debt to total assets on net profit	Rejected	Regression
H3	Debt to equity has no significant impact on net interest margin	Rejected	Regression
H4	Debt to total asset has no significant impact on net interest margin	Rejected	Regression
H5	There is no significant impact ofdebt to equity on return on capital employed	Rejected	Regression
H6	Debt to total assets does not have a significant impact on return on capital employed	Rejected	Regression

4. CONCLUSION

The study examined the impact of capital structure on financial performance with reference to the banking industry in India. The study covered a sample of 21 banksfrom both public sector and private sector. A period of five years from 2011 to 2015 has been considered for the study. The results of the study indicate that the capital structure has a significant impact on the financial performance of the banks. We conclude that while designing capital structure and financing activities, banks should select an optimum mix of debt and equity as it has important implications for profitability.

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