

# Impact of Capital Structure on Banks Performance: Empirical Evidence from Pakistan

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## Abstract

**Purpose:** The study is attempted to test the significance of the impact of capital structure on financial performance of banks listed on Karachi Stock Exchange. **Methodology:** Study is explanatory in nature and deductive approach was adopted. The study incorporated financial performance variables as dependent and capital structure (financial structure) as independent. The dependent variables are spread ratio, return on assets and earnings per share and independent variables are total debt to total equity, long-term debt to total equity and short-term debt to total equity. Furthermore, the study incorporated data for five years from 2009 to 2013. **Findings:** The capital structure is negatively related with banks performance in Pakistan. All null hypotheses could not be accepted at level of significance 0.01 therefore all estimators are significantly related with performance. **Practical Implications:** The study specially explained that in the researches of capital structure the financial and non-financial sector cannot be combined because the relationships are opposite. Furthermore, the investors can use this work during the investment analysis. **Originality / Value:** It is assumed that the variables for financial performance were used first time in this type of study in Pakistan.

**Keywords:** Capital Structure, Earnings per Share, Return on Assets, Spread Ratio.

**JEL Classifications:** G32

## 1. Introduction

This paper borrows from the empirical literature on non-financial firms to explain the relationship between capital structure and financial performance of commercial banks. The concept of capital structure and its optimal level is the old discussion of scholars and professionals in the field of empirical finance. The basic concept behind the capital structure is the benefits of financial leverage. The benefits those are related with the tax shield because interest on debt financing saves the taxes on earnings. Therefore the capital structure plays a vital role in firms' financial performance. The relative proportion of various sources of funds used in a business is termed as financial structure. Capital structure is a part of the financial structure and refers to the proportion of the various long-term sources of financing. The capital structure is a combination of long-term debt, preferred stock and common equity. If the capital structure is at optimal level it gives significant positive impacts on firms' financial performance otherwise the impact may be negative.

The study is all about the impact of capital structure on firms' financial performance in banking sector of Pakistan. On Karachi Stock Exchange there are 21 banks listed up to the year ended 2014. The Pakistan had only 5 commercial public sectors banks 1990 (International Monetary Fund, 2005). Those banks had been privatized further after and only National Bank of Pakistan is completely owned by public sector as a commercial bank in Pakistan. During 1991 to 1993 the Muslim Commercial Bank Limited and Allied Bank Limited were privatized and later in year 2000 United Bank Limited was privatized. In 2004 the privatization process of Habib Bank Limited was completed. The last National Bank of Pakistan Limited is still state owned bank.<sup>1</sup> Private sector banks are also important part of banking sector and financial performance of private sector banks is better than government owned banks in Pakistan (Bharathi, 2010).

The study uses different measures of financial performance and financial structure. The basic objective of the paper is to explain the impact of capital structure on banks' financial performance. As the many authors explain the same relationship in their works therefore this work adopted the same relationship in Pakistani context. The study incorporated three proxies for banks financial performance those are spread ratio, return on assets and earnings per share and three proxies for banks financial structure those are total debt to total equity, long-term debt to debt to total equity and short-term debt to total equity. These three measures of financial structure were also used by Ooi (1999); Amidu (2007). Amidu (2007) applied these three compositions of financial structure on banking sector of Ghana and Ooi (1999) used on real estate businesses of United Kingdom. Furthermore, the paper also covers the detailed descriptive analysis of all proxies used in this research work. The trends of last five years will be presented in the analysis section of this paper and public sector banks are compared with private sector banks because it has been already mentioned that the private sector banks are better performer than public sector banks.

<sup>1</sup> For details see Pakistan-Financial Sector Assessment Program-Technical Note- Condition of the Banking System (IMF Country Report No. 05/157).

## 2. Review of Literature

Capital structure refers to the use of finance by utilizing different proportions of various sources of debt and shareholders' equities for the benefit of the firm, whether it is measuring in terms of profitability or valuation of the firm. Now a days, the selection of capital structure determines on the basis of cost and benefit analysis between the sources of financing.

Most famous theories of capital structure like MM theory, pecking order theory, static trade-off theory, agency theory, the theory of free cash flows and many other conditional theories are designed by the researchers for the beneficial financing decisions. Each theory of capital structure focuses in a different way like MM theory emphasizes on the perfect capital model free from taxes, trade-off theory focuses on taxes, pecking order focuses on differences in the available information and free cash flow emphasizes agency cost. In 1958, Modigliani and Miller presented capital structure irrelevancy. Similarly, in 1963 they supported capital structure relevancy and optimal capital structure. According to Modigliani and Miller (1963) optimal capital structure is obtained by taking proper portions of debt and equity hence increases value of firm and decreases weighted average cost of capital. In the static trade-off model firms trade off costs and benefits of the firm and optimally balance the target debt to equity ratio to gain maximum for the firm. In theories, firms want to target their leverage ratio. Empirically there is a difference between actual and target leverage. Actively managing a target leverage ratio was studied by Graham (2009). He concluded that firms slowly manage the deviations between actual and target leverage.

Pecking order theory presented by Myers and Majluf (1984) shows step by step solution of financing decisions. Initially companies utilize its profit and secure retained earnings from the profit and use it as a first source of financing then prefer to use debt financings and choose equity financing as a last option. According to the study of Myers and Majluf (1984), on the basis of security issuance cost firms follow a financing hierarchy. But, according to the study of Titman and Wessels (1988), empirical realities are different from the assumptions that are ruling in the theories.

Capital structure is based on three sources of financing. These are issuing shares, borrowing or by using retained earnings. Each source of financing has its own importance. The study of Shaheen and Malik (2012) contributed that for all long term and short term needs, firms use debt financing tool. The study of Sheikh and Wang (2013) contributed that the firms' priority to use debt is due to the negative relation of firms' performance with the capital structure of the firm negative relationship between capital structure and performance indicates that agency issues may lead the firms to use higher than appropriate levels of debt in their capital structure.

Capital structure varies from industry to industry. Empirical evidences from the world prove that the capital structures are industry specific. According to Amjed (2011), particular industry follows a particular hierarchy for choosing the capital structure. In a particular industry firms prefer to use same fashion. The study of Rafiq et al. (2008) concluded that the capital structure in the chemical industry of Pakistan follows the pecking order hypotheses.

Variables help to determine financing sources called determinants of capital structure. These determinants proved by many researchers. Like, Najjar and Taylor (2008) found some determinants of capital structure as occur in developed markets, namely: profitability, firm size, growth rate, market-to-book ratio, asset structure, solvency and liquidity. The study of Amidu (2007) discussed that the banks have always been concerned with both solvency and liquidity.

Growth is the determinant of capital structure and it is related to the performance of the firm. Capital structure choices determine on the basis of capital structure. According to Graham (2009) equity issuance and returns may both be correlated with growth opportunities? The study of Rafiq et al. (2008) contributed that the correlation between growth and leverage is positive. Therefore, he concluded that due to the positive relation, study proved that internally generated funds (retained earnings) are not enough for financing requirement, so debt financing is the only source to achieve further growth opportunities.

Size of the firm is the controlling variable and also the determinant of capital structure. It impacts on financial leverage. According to many studies it is the most important determinant of capital structure. The study of Ezeoha (2008) further explored the impact of size on financial leverage. He concluded that in a particular company size depends on the development level of financial market.

## 3. Research Methodology

Study uses deductive approach and descriptive and explanatory in nature. Study incorporates data of 10 randomly selected banks listed on Karachi Stock Exchange. The data was balanced panel with 50 observations per variable. The source of data was the last published report of State Bank of Pakistan which had data up to 2013. Therefore the study incorporates five years data from 2009 to 2013. The main reason behind using data up to 2013 is un-availability of data of 2014 in published report of State Bank of Pakistan on balance sheet analysis. The dependent variables are spread ratio, return on assets, return on equity and earnings per share but return on equity was further drop because data of return on equity was not normally distributed. The Jarque-bera of return

on equity was 236.7 and data was negatively skewed with short tailed distribution. The independent variables are total debt to total equity, log-term debt to total equity and short-term debt to total equity. The researches interference is minimal with cross-sectional time horizon. All independent variables were computed with the help of data and dependent variables were directly sorted from the report. The study formulated following hypotheses:

- H<sub>0A</sub>: Capital structure insignificantly impacts spread ratio.
- H<sub>1A</sub>: Capital structure significantly impacts spread ratio.
- H<sub>0B</sub>: Capital structure insignificantly impacts return on assets.
- H<sub>1B</sub>: Capital structure significantly impacts return on assets.
- H<sub>0C</sub>: Capital structure insignificantly impacts earnings per share.
- H<sub>1C</sub>: Capital structure significantly impacts earnings per share.

The study uses ordinary least square method for the estimation of parameters and simple regression model is used for explaining the impacts. The all dependent variables are the proxies for performance and all independent variables are the proxies for capital structure. The detail of regression models is as under:

**Table 1:** Description of Variables:

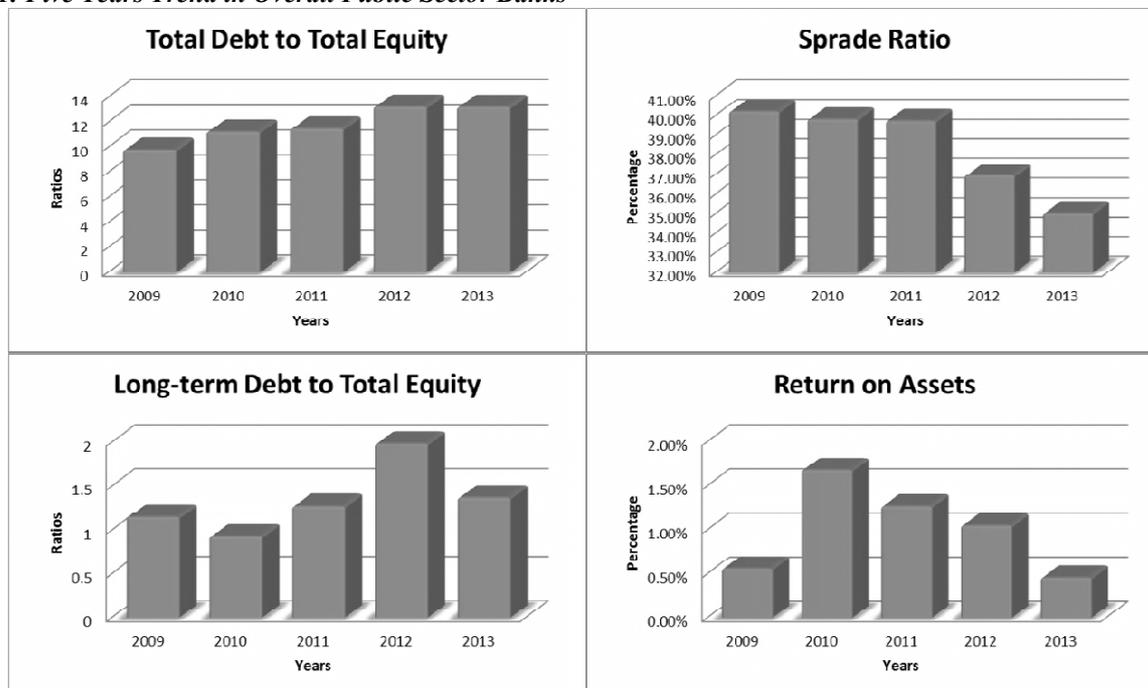
<i>Dependent Variables</i>		<i>Independent Variables</i>	
	<i>Symbols</i>		<i>Symbols</i>
Spread Ratio	<b>SR</b>	Total Debt to Total Equity	<b>TD/TE</b>
Return on Assets	<b>ROA</b>	Long-term Debt to Total Equity	<b>LTD/TE</b>
Earnings per Share	<b>EPS</b>	Short-term to Total Equity	<b>STD/TE</b>

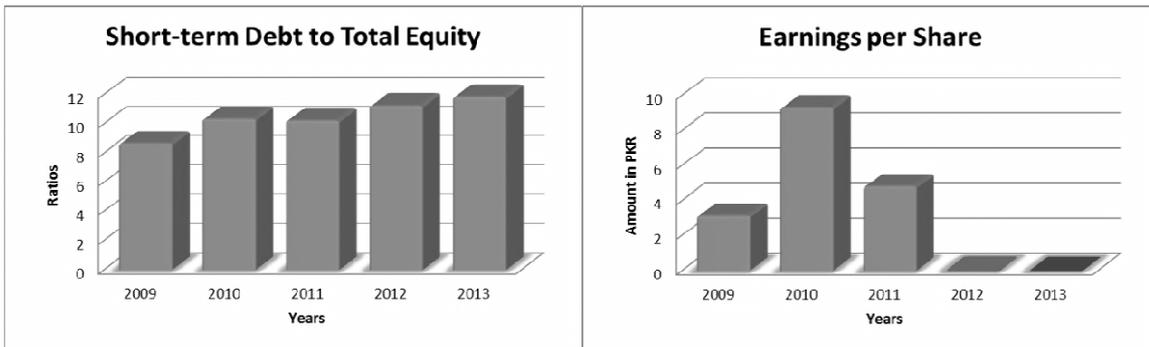
$$Y_{i,t} = \lambda_0 + \lambda_1 X_{i,t} + \alpha_{i,t}$$

- Where; Y = Dependent variable performance
- X = Independent variable capital structure
- i, t = Script for the panel data
- $\lambda_1$  = Slope coefficient
- $\lambda_0$  = Intercept
- $\alpha$  = Stochastic disturbance term

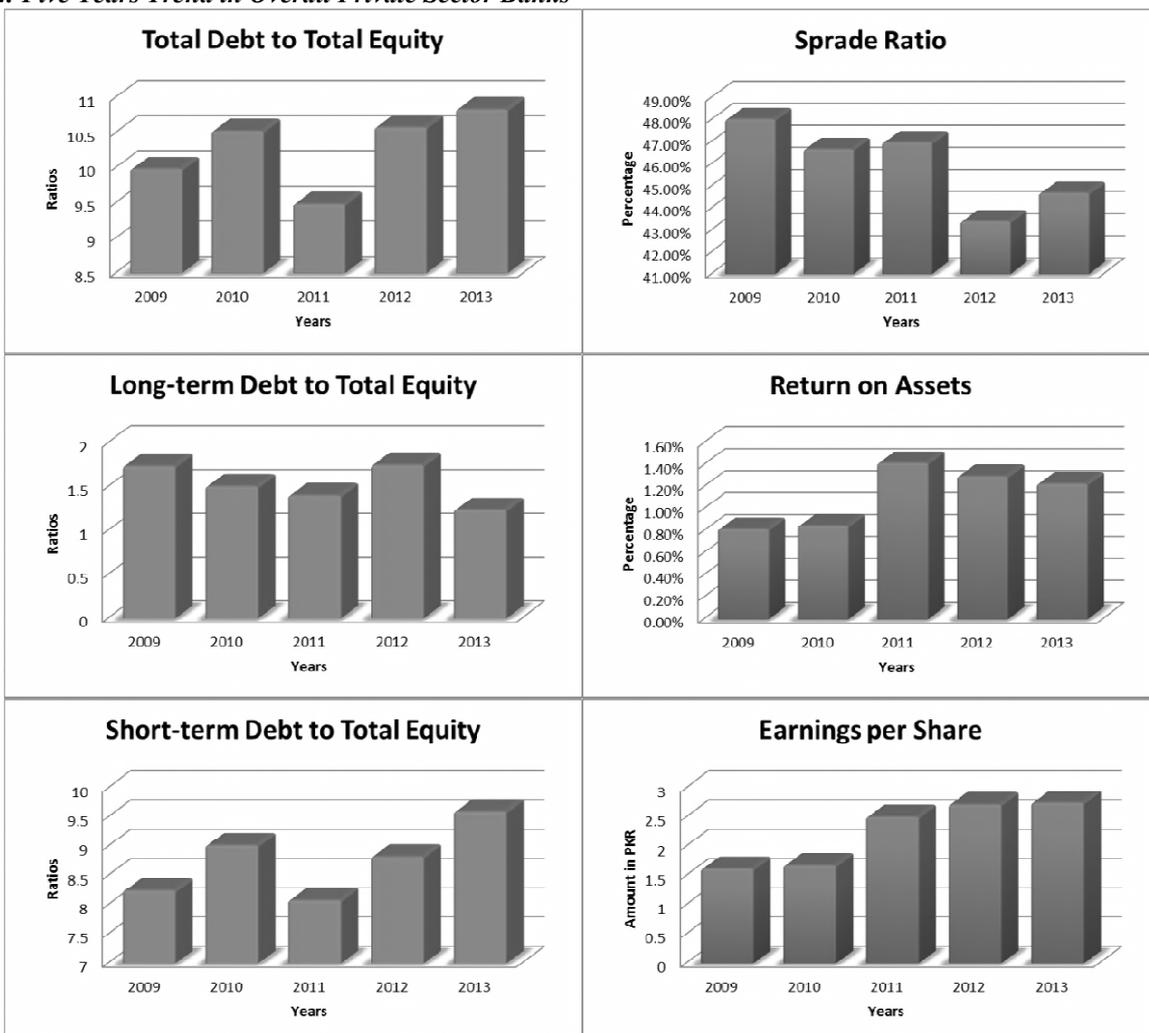
## 4. Results and Findings

### 4.1. Five Years Trend in Overall Public Sector Banks

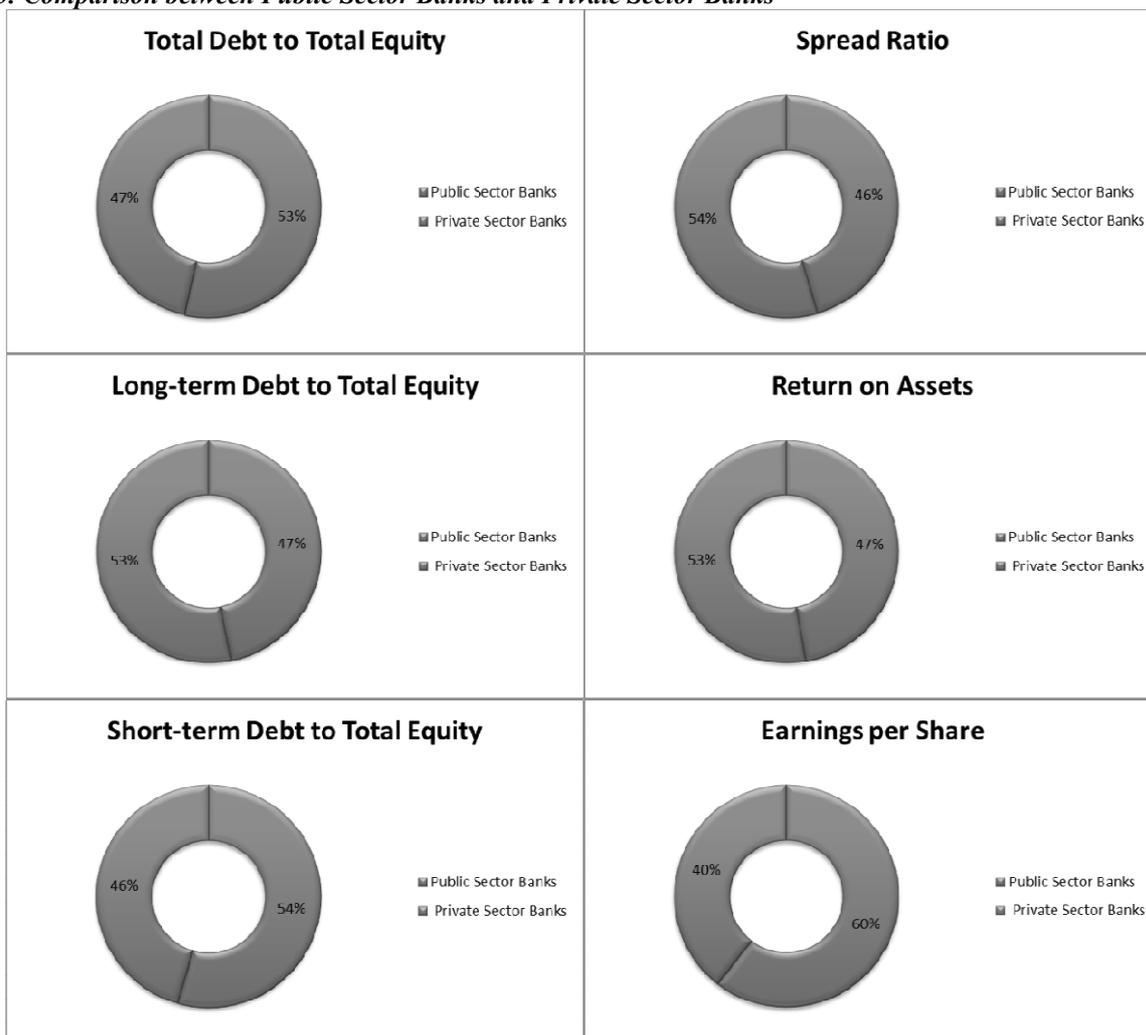




**4.2. Five Years Trend in Overall Private Sector Banks**



### 4.3. Comparison between Public Sector Banks and Private Sector Banks



### 4.4. Empirical Results

This study is done to explain the relationship between capital structure and performance in banking sector of Pakistan. After analyzing data from 10 randomly selected listed commercial banks on Karachi Stock Exchange the results are as under.

**Table 2:** Results of regression analysis:

Dependent Variables	Spread Ratio			Return on Assets			Earnings per Share		
	TD/T E	LTD/T E	STD/T E	TD/T E	LTD/T E	STD/T E	TD/T E	LTD/T E	STD/T E
Coefficients	-0.0184	-0.0687	-0.0209	-0.0011	-0.0043	-0.0012	0.7685	-3.7188	-0.8445
t-statistic	-11.108	-4.279	-11.534	-6.408	-3.483	-6.438	-4.341	-3.272	-4.196
p-value	0.0000	0.0001	0.0000	0.0000	0.0011	0.0000	0.0001	0.0020	0.0001
F-statistic	123.39	18.31	133.05	41.07	12.13	41.44	18.84	10.70	17.61
p-value (F-statistic)	0.0000	0.0000	0.0000	0.0000	0.0011	0.0000	0.0000	0.0019	0.0000
R-square	0.72	0.28	0.73	0.46	0.20	0.46	0.28	0.18	0.27

Study uses simple regression with three dependent variables and three explanatory variables respectively. The ordinary least square method was used and nine models were run with the help of E-Views. The capital structure was measured by three different methods and for each dependent variable the three step-wise regression models were run simultaneously by using each of independent variable respectively. The results of all models are given in table 2 where the capital structure negatively impacts the banks performance. The

capital structure proxy total debt to total equity is negatively related with spread ratio with highly significant evidences and goodness of fit of model is 72%. Second proxy long-term debt total equity is also negatively related with spread ratio and goodness of fit of model is 28% as well as the impact of third proxy short-term debt is also negative on spread ratio and model's goodness of fit is 73%. According to the evidences the study cannot accept  $H_{0A}$  therefore it can be concluded from the results that the capital structure provides the negative impact on spread ratio. The second variable used for measuring financial performance of banks is return on asset. The independent variable total debt to total equity is negatively related with return on assets and the goodness of fit of model is 46%. The dependent variable long-term debt to total equity is also negatively related with return on assets and capital structure also relates the short-term debt to total equity negatively. The goodness of fit of both models is 20% and 46% respectively therefore the study cannot accept  $H_{0B}$  and the impact is negatively significant. Similarly, the capital structure proxy total debt to total equity is negatively related with earnings per share ratio with highly significant evidences and goodness of fit of model is 28%. Second proxy long-term debt total equity is also negatively related with earning per share and goodness of fit of model is just 18% as well as the impact of third proxy short-term debt is also negative on earning per share and model's goodness of fit is 27%. According to the evidences the study cannot accept  $H_{0C}$  therefore it can be concluded from the results that the capital structure provides the negative impact on earnings per share. The overall results indicate the negative impact on performance therefore it can be concluded that the relationship between capital structure and banks financial performance is negative.

## 5. Conclusion and Implications

The study is attempted to test the significance of impact of capital structure on banks performance in Pakistan. For this purpose 10 commercial banks were selected randomly from all listed banks on Karachi Stock Exchange. According to the descriptive results the private sector banks are the better performers than the public sector banks. The measure reason is that the public sector banks face lot of obstacles in strategic control and planning due corrupt management and governance. The bar diagrams of public sector banks related to performance described continuously decreasing on yearly basis but in private sector banks' trends are opposite.

Study used two different methods for analysis where one was descriptive and second was ordinary least square regression. The study used step-wise regression in which three simultaneous equations were used to test the impact of capital structure on banks performance. The basic estimate of the study is financial performance which was measured by three different variables (spread ratio, return on assets and earnings per share). The estimator used for predicting the results was capital structure which was also measured by three different methods first by Ooi (1999) and further by Amidu (2007). All estimators predicted the negative impact in regression analysis of capital structure on banks financial performance. All null hypotheses could not be accepted at level significance 0.01 therefore it can be concluded from the studied evidence that in banking sector of Pakistan the capital structure is negatively related with banks financial performance.

In banking sector portion of debt is very large in financing because the bank is the institution which generates credit money. The measure portion of banks' balance sheet is financed by deposits of the customers therefore the benefits of optimal capital structure cannot be availed by banking sector because the there is no concept of optimal level of capital structure in banking sector. This paper will specially help the scholars to evaluate their research work in better form. Especially in the study of capital structure the impact of capital structure is opposite on financial performance in financial sector and non-financial sector. With the help of this work investors can analyze changes in stock prices of banks due to change in capital structure. There are many other performance indicators of banking sector those can be used in future studies and sample size can be increased to increase the reliability of results in future.

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