Research Journal of Finance and Accounting
ISSN 2222-1697 (Paper) ISSN 2222-2847 (Online)
Vol.9, No.11, 2018

Effect of Capital Structure on Firms' Profitability: An Empirical Evidence from Pakistan Stock Exchange (PSX)

Assad Naim Nasimi*
Lahore School of Accountancy & Finance, The University of Lahore, Islamabad, Pakistan

Rashid Naim Nasimi
Lahore School of Accountancy & Finance, The University of Lahore, Islamabad, Pakistan

Abstract
This paper examines the impact of capital structure on firms' profitability. In order to examine the relationship, we used annual panel data for 20 non-financial firms listed at Pakistan Stock Exchange during 2009 to 2015. The panel econometric technique used to explore the effect of capital structure on firms' profitability is ordinary least squares (OLS). Each multivariate regression model incorporates two independent and one dependent variables.
The empirical findings showed that debt to equity has significant impact on return on equity and insignificant on net profit margin and return on asset. However, debt to asset has insignificant impact on return on equity and significant on net profit margin and return on asset. It concludes that performance of an organization is sensitive to the type of capital structure the firms adopt, hence, capital structure has significant influence on profitability. Therefore, managers should consider effect of debt on firms' profitability earlier to adjusting debt levels in the capital structure. Moreover, the lenders tenderly inflict the debt covenants considering their impact on firms' profitability. Hence, an optimal level of debt and equity should be incorporated in the capital structure in order to attain the targeted level of efficiency and success in business performance.
Keywords: Panel regression, Capital Structure, Financial Performance, OLS.
JEL CODE: D22, G32

INTRODUCTION

1.1 BACKGROUND

The major financial decisions of any firms include investment decision, financing decision, asset management decision, dividend, and share repurchase decision. However, these decisions relate to the capital budgeting, cost of capital, working capital management, and dividend and share repurchase management, respectively. Furthermore, these decisions are based on the source of finance, that is, the structure of capital. It shows how the firm's capital is made. The concerned sources for the financial decisions are equity source of finance and debt source of finance. Nasimi (2016) defined capital structure as proportion of long term financing sources. Riaz (2015) stated that capital structure is combination of debt and equity to finance assets.[1] However, Pandey (2005) showed that capital structure is referred to combination of debt and equity source of finance. Taylor and Venhorn (1996) defined as sum of long-term securities (equity and debt).

Financial performance of a firm is based on the structure of capital. Firms raise funds either from debt, equity or both. Mostly, firms use both sources in order to maximize performance and value of firms. The equity source of finance is the issuance of ordinary and preference shares to general public whereas the other source to raise funds is external debt. The debt financing refers to issuance debentures, bonds or from any financial institution on interest bases.

The choice of capital structure is most important decision. Therefore, the debate on how to choose the proportion of debt and equity in the making of capital structure has put forward a great deal of attention in the literature. Particularly, it plays a vital role in corporate decision and the managers' decision is maximizing the wealth of shareholders. At the time of promotion, capital structure is planned by firm and subsequently the decision of capital structure is involved when the firm wants to acquire projects or expand its investment. Hence, capital structure decision plays a significant impact on owner's equity return, risk, and the market value of shares.

At firm level, capital structure decision has impact on firms' profitability, growth, and survival. At economic level, efficient allocation and effective planning plays a key role in capital investment decision, which, in turn, has effect on the future survival of firms. The ideal capital structure is necessary for the firms listed on Pakistan Stock Exchange (PSX). A standard ratio for capital structure is not available for firms as the capital structure varies from firm to firm. Therefore, it is very important decision to be taken by the firm executives in order to minimize the risk of loss and the cost of capital which in return maximizes the profits from firms ensuring increase in the wealth of its stakeholders.

[1] Nasimi (2016) that states capital structure is the combination of equity and debt for financing firms' assets. Also, see Weston and Bringham (1978), Watson and Head (2007), Vitor and Badu (2012), Subita and Alsawalhah (2012), and many others.

Plentiful literature exists that on the impact of capital structure on firms' profitability. Some have shown positive influence of capital structure on firm profitability while others have shown negative impact. Modigliani and Miller (1958) showed that firm profitability is not affected between the choice of debt or equity in the structure of capital. Jesen and Meckling (1976) showed positive association exits between profitability and capital structure. Margaritis and Psillaki (2010) showed that debt has positive impact on firms' performance. Similarly, Abor (2005) showed positive association between capital structure and firm profitability. On Contrary, Gleason *et al.* (2000) showed the negative association of capital structure and firms' profitability. Similarly, Ebid (2009) investigated the association between capital structure and profitability. He concluded the negative relationship of capital structure with firms' performance.[1] However, the studies that reported both positive and negative relationship includes Ramkumar et al. (1996), Mahatud and Bhole (2003), Sudhansu et al. (2005), Datta and Agarwal (2009), Singh (2006), Shah and Khan (2007), Boopen et al (2009), Bhattacharjee (2010), Boakye, Appiah and Afolabi (2013), Yegon *et al* (2014), Nasimi (2016), and many others[2].

For every business financing assets is very crucial decision. Nonetheless, the firm managers have to consider the maximizing of firms' value while designing the structure of capital. Many empirical literature exists on the subject matter. Some have shown positive effect whereas some showed negative effect. The problem is still there that what is the effect of capital structure on profitability of firms? Therefore, the researcher based on above issues has increased the number of variables in order to investigate the sign and direction of the association between capital structure and profitability that would help managers in achieving optimal capital structure.

This main purpose of the study is to find out the impact of capital structure on profitability of 20 non-financial companies listed on PSX during the period 2009 to 2015. Particularly, it investigates if measure of capital structure by debt to equity and debt to assets have influence on firm performance which is measured by return on assets, net profit margin, and return on equity.

This study will analyze the effect of capital structure on firm profitability. In general, it will cover each and every aspect of the subject but specifically it is related to effect capital structure of firms listed at PSX. It is of very importance to know what association that exists between capital structure and firm profitability since the survivability of firms depend on returns. The finding of this research will be helpful to the investors, owner, managers and all stakeholders to make sound decision on the structure of firms' capital. Furthermore, the findings of the study also help government in collecting taxes and enhancing a specific sector.

LITERATURE REVIEW

2.1 LITERATURE REVIEW:

The theory of capital structure can be outlined back to Modigliani and Miller (1958) who developed a basis financing decisions. In their research, they concluded that total market value of an unlevered firm is equal to that of a levered firm when taxes are not considered. In their subsequent research Modigliani and Miller (1963) they took tax into consideration. They concluded that a levered firm has a higher market value than an unlevered firm because of tax shield on debt, and that this extra value was equal to the present value of the tax shield. Later, Modigliani and Miller (1977) modified their research of 1963 by incorporating the effect of personal taxes in their study. Thus, the results signify the existence of an optimal capital structure at the macro level and not at the micro level.

Myers and Majluf (1984) suggested that to undertake the valuable investment opportunity, a firm should rely on the internal sources of funds rather than the external source of finance. Once the internal source of finance is exhausted, the firm should go to the bond markets for the external capital alternative to financing by equity due to the asymmetry of information. The trade-off theory states that firms seek debt levels that sets off the tax advantages from additional debt against the costs of possible financial distress. The pecking order theory states that the firm will prefer to borrow when internal cash flow is insufficient to finance capital expenditures, rather than issuing equity. Thus the amount of debt will reflect the firm's cumulative need for external funds. All theories work under different circumstances and are conditional due to the assumptions that exist within them. Moreover, the business conditions are changing constantly as result of which firms move from one theory to another to adjust their capital structure.

Many reserachers have anlaysed the impact of profitability on the firms leverage and they found different results. Friend & Lang(1988) and Kester (1986) find a significantly negative relation between profitability and debt. Similarly, Rajan & Zingales(1995), Wald (1999), and Fama and French (2002) also confirm a negative relationship between capital structure and profitability.

Omukaga (2017) scrutinized the effect of capital structure on profitability of firms listed at Nairobi Stock Exchange for the sample period covering from 2012 to 2016. The study measured capital structure by debt to

[1] See Vitor & Badu (2012), for negative impact of capital structure on firm profitability.
[2] Also, see Najafov (2017) that examined the effect of debt on economy. He states that debt has an adverse impact on economy. It creates recession in balance sheet, debt-deflationary, and cyclical fluctuations that reduces the efficiency of firms.

equity while firm performance was measured by return on equity, earning per share, profit after tax, and profit before tax. The findings of the study showed that return on equity, profit before tax, and profit after tax are determinants of capital structure.

Nasimi (2016) analyzed the effect on capital structure on profitability of 30 firms listed at FTSE-100 index of the London Stock Exchange for the year starting 2005 to 2014. The results revealed that debt to equity ratio has negative significant impact on return on asset and return on invested capital where positive significant impact on return on equity. It also revealed that interest coverage has positive significant impact on return on asset, return on equity and return on invested capital. The study concluded that an optimal level of capital structure shall be employed to achieve the targeted efficiency level in business.

Nasimi (2016) examined the determinants of capital structure of firms listed at S&P 500 index of New York Stock Exchange. The study sample was constructed using panel date of 15 IT firms for the period from 2010 to 2014. The study concluded tangibility has positive significant impact on capital structure. Thus study concludes that IT firms in the United States prefer debt in the capital structure.

Amin and Jamil (2015) examined the effect of capital structure on profitability of firms listed at Dhaka Stock Exchange. The study comprised of seven cement firms for period covering year 2001 to 2015. They measured the firm capital structure by long term debt to total assets and short term debt to total assets. However, the firm performance was measured by return on equity and return on assets. The findings of the study showed that short term debt to total assets has a significant positive effect on firm profitability.

Muhammad, Shah & Islam (2014) examined the effect of capital structure on firms listed at cement sector of Karachi Stock Exchange for period of five years starting 2009 to 2013. The findings the study showed the debt to equity has positive relation with gross profit margin (GPM) and net profit margin (NPM) whereas negative relation with return on assets (ROA) and return on equity (ROE). It also revealed that negative relation between debt to asset ratio, GPM, NPM, ROA and ROE exits. Thus, the study concluded that an optimal level of capital structure shall be developed in order to achieve the efficient levels targeted by business.

Ayesha (2010) examined the factors of capital structure. The study consisted of the 91 government and private corporations. The study used tangibility, profitability, firm size and growth as independent variable where leverage was used as dependent variable. The results of the study revealed that firm size and growth are positively related with leverage. Furthermore, it showed that tangibility in public firms have positive association with leverage. However, firm size showed negative association with leverage in public firms whereas positive relation with leverage in private firms. Moreover, profitability showed positive relation with leverage in public firms and negative relation in private firms.

Mohammadzadeh *et. al.* (2013) The results of the study revealed negative relationship between capital structure and firm profitability which lead to the establishment of Pecking Order Theory in pharmaceutical companies of Iran.

2.2 HYPOTHESIS OF THE STUDY

The researchers, based on the above literature review, expresses the below hypothesis:

$H_{1\ 11}$: There is significant impact of debt to equity ratio on net profit margin.
$H_{1\ 12}$: There is significant impact of debt to asset ratio on net profit margin.
$H_{1\ 21}$: There is significant impact of debt to equity ratio on return on asset.
$H_{1\ 22}$: There is significant impact of debt to asset on return on asset.
$H_{1\ 31}$: There is significant impact of debt to equity ratio on return on equity.
$H_{1\ 32}$: There is significant impact of debt to asset ratio on return on equity.

RESEARCH METHODOLOGY

3.1 EMPIRICAL MODELS

In order to explore the impact of capital structure of firms' performance, below empirical models were estimated:

$$NPM_{it} = \beta_0 + \beta_1 DE_{it} + \beta_2 DA_{it} + f_i + f_t + \varepsilon_{it} \quad (1)$$

$$ROA_{it} = \beta_0 + \beta_1 DE_{it} + \beta_2 DA_{it} + f_i + f_t + \varepsilon_{it} \quad (2)$$

$$ROE_{it} = \beta_0 + \beta_1 DE_{it} + \beta_2 DA_{it} + f_i + f_t + \varepsilon_{it} \quad (3)$$

where β_0 is the intercept and β_1 and β_2 are the coefficients of independent variables. f_i and f_t shows the firm-fixed and year-fixed effects, respectively. ε_{it} denotes the disturbance term.

3.2 DATA AND METHODOLOGY

Secondary data was used to analyze the effect of capital structure on firm profitability. The convenient sampling technique was utilized to draw sample of the study. The sample of the study comprised of 20 non-financial firms for the year 2009 to 2015 that are listed at PSX. However, ordinary least square (OLS) method has been applied. The multiple linear regression model is applied after the fulfilling the assumption of the model on the data for

testing the relationship between the variables. However, the study consists of three models to examine the effect of debt to equity and debt to total assets on net profit margin, return on assets, and return on equity.

3.3 CONCEPTUAL FRAMEWORK

The study includes five variables in order to explore the effect of capital structure on firm profitability as shown below:

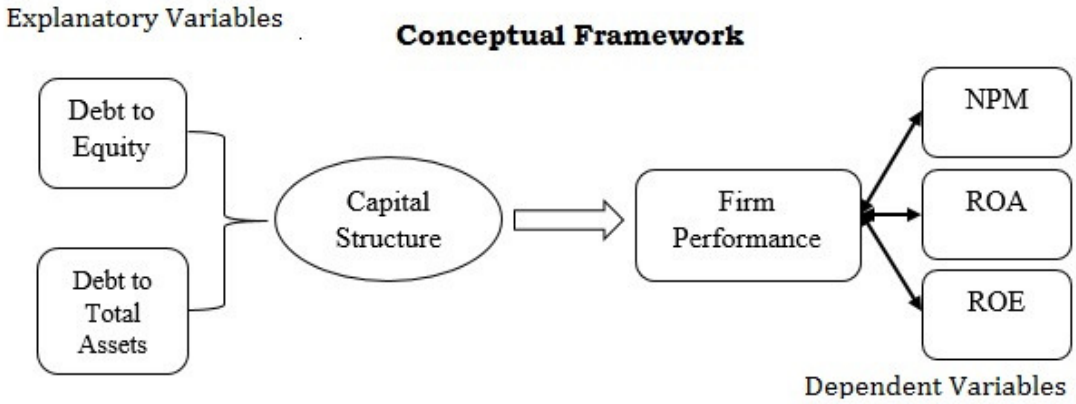

Figure 1: Conceptual Framework

Note: The above figure 1 shows the conceptual framework of the study. Capital structure being independent variable is measured by Debt to Equity (DE) Ratio and Debt to Asset (DA) Ratio are the explanatory variables whereas Firm Profitability being dependent variable is measured by Net Profit Margin (NPM), Return on Asset (ROA) and Return on Equity (ROE) are the dependent variables for the study.

Table 3.1 represents the construction and measurement for various variables are incorporated in the regression model of our study for exploring the influence of capital structure on the profitability of firms listed at PSX.

Table 3.1: Construction and Measurement of Variables

Variables	Symbol	Measurement
Explanatory Variables		
Debt to Equity	DE	Total Liabilities to Equity
Debt to total assets	DA	Total Liabilities to Total Assets
Dependent Variables		
Net Profit Margin	NPM	Net Profit after Tax and Interest to Revenue
Return on Assets	ROA	Net Income to Total Assets
Return on Equity	ROE	Net Income to Shareholders Equity

RESULTS AND DISCUSSIONS

4.1 DESCRIPTIVE STATISTICS

The **Table 4.1** shows the descriptive statistics of variables. The mean value of net profit margin is 12.25 percent. However, the mean value of return on asset is 0.079 percent which shows that almost 8 percent of firms' income is generated using the total assets. The mean value of return on equity is 0.240 which indicates that 24 percent of the income is produced using the total equity. The mean value of debt to equity is 0.904. Similarly, the debt ratio has mean value of 0.615 which shows that 61 percent of the firms' assets are financed by the total liabilities.

Table 4.1 Descriptive Statistics

	NPM	ROA	ROE	DE	DA
Mean	0.122517	0.079819	0.240176	0.903750	0.615239
Median	0.134700	0.073650	0.167800	0.495000	0.603300
Maximum	0.371700	0.301800	3.271900	4.930000	1.025000
Minimum	-0.358700	-0.120000	-0.474500	0.010000	0.096200
Std. Dev.	0.113337	0.082978	0.397611	0.974756	0.240449
Skewness	-1.118208	0.316005	3.870660	1.343821	-0.211033
Kurtosis	5.928364	2.845299	27.39379	4.699805	1.971965
Jarque-Bera	79.19839	2.469655	3820.747	58.99108	7.204138
Probability	0.000000	0.290885	0.000000	0.000000	0.027267
Sum	17.15240	11.17460	33.62460	126.5250	86.13340
Sum Sq. Dev.	1.785492	0.957059	21.97518	132.0707	8.036376
Observations	140	140	140	140	140

Furthermore, the Table 4.1 shows that debt ratio has the highest mean value of 0.615239 and the lowest mean value is that of return on asset which is 0.079819. The debt ratio has the highest median value which is 0.603300 and return on asset has the lowest value of median which is 0.073650. The debt to equity has the highest value of standard deviation which is 0.974756 and return on asset has the lowest value of standard deviation which is 0.082978. The highest value of skewness is seen in return on asset which is 3.870660 while net profit margin has the lowest value of -1.118208. When considering the kurtosis, return on equity has the highest value of 27.39379 whereas debt ratio has lowest value which is 1.971965.

4.2 CORRELATION ANALYSIS

Correlation analysis is used to measure the strength and direction of linear association among variable. The coefficient[1] of correlation ranges between ±1.0. The below **Table 4.2** shows the correlation analysis. The pair-wise correlation does not show any evidence of presence of multicollinearity among the variables. The problems of multicollinearity rises at coefficients of 0.80, see Gujarati (2003).

Table 4.2: Correlation Analysis

	NPM	ROA	ROE	DE	DA
NPM	1.000000				
ROA	0.484844	1.000000			
ROE	0.375092	0.565669	1.000000		
DE	0.052056	-0.219234	0.303630	1.000000	
DA	0.082056	-0.505739	0.131376	0.595432	1.000000

The results revealed that net profit margin is positively correlated with return on asset and return on equity whereas negatively correlated with debt to equity ratio and the debt ratio. Similarly, return on asset is positively correlated with return on equity and negatively correlated debt to equity and debt ratio. Return on equity is positively correlated with debt to equity and debt ratio. A positive correlation has been seen between debt to equity and debt ratio.

4.3 REGRESSION ANALYSIS

Regression analysis measures the response of dependent variable to change in independent variable(s). The panel regression of the study consists of common effect, fixed effect and random Effect, in order to select the appropriate test for study.

4.3.1 NET PROFIT MARGIN (NPM) AND INDEPENDENT VARIABLES

The result of Hausman Test (cross section random with Prob. 0.0000) shows that Fixed Effect is the appropriate test.

[1] The coefficient of +1 (perfect positive) shows positive association where is -1 (perfect negative) shows negative association; and a coefficient of 0 indicates no linear correlation exists between variables.

Correlated Random Effects - Hausman Test
Pool: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	31.393924	2	0.0000

The **Table 4.3.1** in appendices show the results of regression analysis. The results show that all 20 firms have a common coefficient of 0.503111. In common coefficients, 12 firms ABOT, ACPL, AGTL, AKZOY, DGKC, FCCL, KOHC, KSBP, LPCL, LUCK, MLCF and SING have decrease value of 0.014943, 0.188651, 0.272255, 0.107857, 0.152527, 0.054571, 0.018497, 0173616, 0.093598, 0.106366, 0.077312 and 0.075459 respectively. And 8 firms BAHL, COLG, DBCI, FABL, GLAXO, MARI, PAKT and SNBL have increase value of 0.365246, 0.127626, 0.0228833, 0.211867, 0.178518, 0.169184, 0.027393 and 0.232925 respectively.

The value of coefficient of DE is 0.019129 which means 1.9129% variation in dependent variable has been explained by DE; a unit increase in DE will result in increase of 0.019129 units in NPM. The value of t-statistics of DE 1.200366 with p-value>0.05 shows that DE has insignificant positive effect on NPM. The value of coefficient of DA is -0.646712 which means 64% negative variation in dependent variable has been explained by DA; a unit increase in DA will result a decrease of 0.646712 units in NPM. The value of t-statistics of DA -6.456693 with p-value<0.05 shows that DA has negative significant impact on NPM.

The value of R-square is 0.608495 which means a total variation of 60.8495% in dependent variable has been explained by independent variables DE and DA. The value of Adjusted R-square is 0.538821 which means if a relevant variable is added to the model, the value of R-square will adjust by 53.8821%. The F-statistics shows significant value of prob. i.e. 0.0000 which means the model is good fitted.

4.3.2 RETURN ON ASSET (ROA) AND INDEPENDENT VARIABLES

The result of Hausman Test (cross section random with Prob. 0.0015) shows that Fixed Effect is the appropriate test.

Correlated Random Effects - Hausman Test
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	13.044704	2	0.0015

The **Table 4.3.2** in appendices show the results of regression analysis. The results show that all 20 firms have a common coefficient of 0.312026. In common coefficients, 11 firms ABOT, ACPL, AGTL, AKZOY, DGKC, FCCL, KSBP, LPCL, LUCK, MLCF and SING have decrease value of 0.027948, 0.039197, 0.045206, 0.074935, 0.131241, 0.063327, 0.086032, 0.044757, 0.045085, 0.046056 and 0.030944 respectively. And 9 firms BAHL, COLG, DBCI, FABL, GLAXO, KOHC, MARI, PAKT and SNBL have increase value of 0.060952, 0.190566, 0.022701, 0.052586, 0.122205, 0.032850, 0.003270, 0.114691 and 0.034907 respectively.

The value of coefficient of DE is -0.005945 which means 0.5945% negative variation in dependent variable has been explained by DE; a unit increase in DE will result in decrease of 0.005945 units in ROA. The value of t-statistics of DE -0.637233 with p-value>0.05 shows that DE has insignificant negative effect on ROA. The value of coefficient of DA is -0.368693 which means 36.8693% negative variation in dependent variable has been explained by DA; a unit increase in DA will result a decrease of 0.368693 units in ROA. The value of t-statistics of DA -6.287301 with p-value<0.05 shows that DA has negative significant impact on ROA.

The value of R-square is 0.749645 which means a total variation of 74.9645% in dependent variable has been explained by independent variables DE and DA. The value of Adjusted R-square is 0.705090 which means if a relevant variable is added to the model, the value of R-square will adjust by 70.5090%. The F-statistics shows significant value of prob. i.e. 0.0000 which means the model is good fitted.

4.3.3 RETURN ON EQUITY (ROE) AND INDEPENDENT VARIABLE

The result of Hausman Test (cross section random with Prob. 0.0134) shows that Fixed Effect is the appropriate test.

Correlated Random Effects - Hausman Test
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.088796	2	0.0134

The **Table 4.3.3** in appendices show the results of regression analysis. The results show that all 20 firms have a common coefficient of 0.533341. In common coefficients, 13 firms ABOT, ACPL, AGTL, AKZOY, DBCI, DGKC, FABL, FCCL, KSBP, LPCL, LUCK, MLCF and SING have decrease value of 0.043958, 0.166219, 0.310738, 0.155805, 0.273571, 0.251240, 0.098115, 0.166468, 0.164904, 0.204125, 0.103827, 0.241468 and 0.083833 respectively. And 7 firms BAHL, COLG, GLAXO, KOHC, MARI, PAKT and SNBL have increase value of 0.078258, 1.070627, 0.489342, 0.011433, 0.091262, 0.425916 and 0.097434 respectively.

The value of coefficient of DE is 0.111064 which means 11.1064% variation in dependent variable has been explained by DE; a unit increase in DE will result in increase of 0.111064 units in ROE. The value of t-statistics of DE 2.022142 with p-value<0.05 shows that DE has significant positive effect on ROE. The value of coefficient of DA is -0.639652 which means 63.9652% negative variation in dependent variable has been explained by DA; a unit increase in DA will result a decrease of 0.639652 units in ROE. The value of t-statistics of DA -1.852952 with p-value>0.05 shows that DA has insignificant negative impact on ROE.

The value of R-square is 0.622149 which means a total variation of 62.2149% in dependent variable has been explained by independent variables DE and DA. The value of Adjusted R-square is 0.554904 which means if a relevant variable is added to the model, the value of R-square will adjust by 55.4904%. The F-statistics shows significant value of prob. i.e. 0.0000 which means the model is good fitted. However, summary of hypothesis testing in Appendix shows the acceptance or rejection of hypotheses.

CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSION AND DISCUSSION

This paper examines the effect of capital structure on firm profitability in Pakistan. The study sample consists of 20 non-financial firms listed at Pakistan Stock Exchange, KSE-100 index. The annual panel data is collected from firms' financial statement for period of 7 years starting 2009 to 2015. The study comprises of three models; in first model, the researcher has incorporated two independent variables (debt to equity and debt to asset) and one dependent variable (net profit margin); in second model, the researcher has incorporated two independent variables (debt to equity and debt to asset) and one dependent variable (return on asset) and in third model, the researcher has included two independent variables (debt to equity and debt to asset) and one dependent variable (return on equity).

From the model 1 of our study, we find that debt to equity ratio has an insignificant positive impact on the net profit margin. However, debt ratio showed a significant negative impact on net profit margin. This can be explained that the firms with higher debt ratio are more liable and to fulfill their obligations these firms need to pay large portion of their income, consequently the net profit margin of the firms reduces. This is how debt to asset and net profit margin are negatively related.

The findings of the model 2 of our study shows that debt to equity has an insignificant negative impact on return on assets. However, the debt ratio showed a significant negative impact. The reason that debt to asset and return on asset are negatively related is that of fulfillment of the cost of debt for the assets acquired by debt. This means that return on asset decreases as the debt ratio is increased.

In model 3 of our study, we find that the debt ratio has a negative insignificant impact on the return on equity. However, the debt to equity ratio has a positive significant impact on the return on equity. This shows that an increase of 1 unit in the debt to equity ratio will tend to increase the return on equity by 11 units.

The study concludes that firm profitability is statistically and significantly affected by the firms' capital structure. Moreover, the level of debt acquired by business may lead the firm in getting tax shield which increases the profitability of the firm. Therefore, in order to get to the point of targeted efficiency, the business executives may maintain optimum degree of capital structure.

5.2 POLICY IMPLICATIONS AND RECOMMENDATIONS

Groth and Anderson (1997) states that understanding the capital structure is crucial for the managers. For instance, the findings show that above the appropriate levels, debt has negative influence on the performance of the firms. Thus, the managers are compelled to consider the negative influence of leverage prior to any decisions regarding the debt level adjustments. Furthermore, the investors can also consider debt level of a firm to make appropriate investment decisions.

Our paper has laid empirical findings on the impact of capital structure on the profitability for the firms

listed at Pakistan stock exchange. It also provides a pathway for the further researches. The study proposes that further research may include more variables and stretch the study period to achieve more accurate and reliable results.

REFERENCES

Ayesha Mazhar, M. N. (2010). Determinants Of Capital Structure Decisions:Case of Pakistani Government Owned and Private Firms. *International Review of Business Research Papers Vol.6, No.1*, Pp. 40-46.

Abor, J. (2005). The effect of capital structure on profitability: an empirical analysis of listed firms in Ghana. *Journal of Risk Finance, 6, 438-447*.

Amin and Jamil (2015). Capital Structure and Firm Performance: Evidence from Cement Sector of Dhaka Stock Exchange Limited. *Journal of Finance and Banking, Volume 13, Number 1&2.*

Boopen Seetanah, Kesseven Padachi and Rishi Ronoowah (2007). "Determinants of Capital Structure: Evidence from a Small Island Developing State", *The ICFAI Journal of Applied Finance, 13(5): 5-28.*

Bhattacharjee, B.J. (2010). "An Empirical Investigation into the Determinants of Capital
Structure of Indian Industries", *The IASMS Journal of Business Spectrum, II (2): 1-19.*

Oppong-Boakye, Appiah, K. O., & Afolabi, J. K. (2013). Determinants of capital structure: Evidence from Ghanaian firms. *Research Journal of Finance and Accounting, 4(4), 2222-1697.*

Datta, D. and Agarwal, B. (2009). "Determinants of Capital Structure of Indian Corporate Sector in the period of Bull Run 2003-2007: *An Econometric Study", Journal of Finance, 4(9):45-49.*

Ebid, I.E. (2009), "The impact of capital structure choice on firm performance: empirical evidence from Egypt", *Journal of Risk Finance, Vol. 10 No. 5, pp. 477-487.*

Friend, I., & Lang, L. H. (1988). An empirical test of the impact of managerial self-interest on corporate capital structure. *The Journal of Finance, 43(2), 271-281.*

Fama, E. F., & French, K. R. (2002). The equity premium. *The Journal of Finance, 57(2), 637-659.*

Gujarati, D. N., & Porter, D. C. (2003). Basic Econometrics. 4th.

Groth, J. C., & Anderson, R. C. (1997). Capital structure: perspectives for managers. Management Decision, 35(7), 552-561.

Gleason, K.C., Mathur, L.K. and Mathur, I. (2000), "The interrelationship between culture, capital structure and performance: evidence from European retailers", *Journal of Business*
Research, Vol. 50, pp. 185-191.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics, 3(4), 305-360.*

Kester, W. C. (1986). Capital and ownership structure: A comparison of United States and Japanese manufacturing corporations. *Financial management, 5-16.*

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American economic review, 48(3), 261-297.*

Modigliani, F., & Miller, M.H. (1963). *Corporate Income Taxes and the Cost of Capital: A Correlation*. The American Economic Review, Vol. 53(3), 433 - 443.

Modigliani, F., & Miller, M.H. (1977). *Debt and Taxes*. The Journal of Finance, Vol. 32(2), 261 - 275.

Mohammadzadeh, M., Rahimi, F., Arabi, S. M., Rahimi, F. and Salamzadeh, J. (2013). "The Effect of Capital Structure on the Profitability of Pharmaceutical Companies *The Case of Iran". Iranian Journal of Pharmaceutical Research (2013), 12(3): 573-577.*

Myers, S., & Majluf, N. (1984). *Corporate Financing and Investment Decisions when Firms have Information that Investors do not have.* Journal of Financial Economics, Vol. 13(1984), 187 - 221. North Holland.

Mahatud, J.and Bhole L.M(2003). 'Determinants of Corporate Capital Structrue in India :
A Dyanamic Panel Data Analysis' , *ICFAI Journal of Applied Finance, (9) : 34-39.*

Margaritis, D. and Psillaki, M. (2010), "Capital structure, equity ownership and firm
performance", *Journal of Banking & Finance, Vol. 34, pp. 621-632.*

Muhammad, H., Shah, B., & ul Islam, Z. (2014). The impact of capital structure on firm performance: Evidence from Pakistan. *Journal of Industrial Distribution & Business, 5(2), 13-20.*

Nasimi, A.N. (2016). The Effect of Capital Structure on Firm Profitability (An Empirical Evidence from London, UK*). Global Journal of Management and Business: C Finance, Volume 16 Issue 4 Version 1.0, pp-9-19, Online ISSN: 2249-4588 & Print ISSN: 0975-5853.*

Nasimi, R.N. (2016). Determinants of Capital Structure: An Empirical Evidence from United States*. Global Journal of Management and Business: C Finance, Volume 16 Issue 4 Version 1.0, pp-29-42, Online ISSN: 2249-4588 & Print ISSN: 0975-5853.*

Najafov, S. A. (2017). Impact of Debt on Economy.

Omukaga, K. O. (2017). Effect Of Capital Structure On Financial Performance Of Firms In The Commercial And Service Sector In The Nairobi Securities Exchange For The Period 2012-2016 *(Doctoral dissertation,*

United States International University-Africa).

Pandey, I.M. (2005). "Financing Decision; A Study of Management Understanding",
Management Review, Economic and Political Weekly, 7: 46-51.

Riaz, S. (2015). Impact of Capital Structure on Firm's Financial Performance: An Analysis of Chemical Sector of Pakistan. *Journal of Poverty, Investment and Development, 12(1).*

Ramkumar et al.(1996). "Economic Analysis of Capital Structure Determinants", *The Decision, 23(1-4): 73-98.*

Shubita, M. F. and Alsawalhah, J. F. (2012). The Relationship between Capital Structure and Profitability. *International Journal of Business and Social Science, Volume 3, No. 16.*

Sudhansu and Omkarnath, (2005). "Capital structure of Indian Private Corporate Sector- An
Empirical Analysis", *The ICFAI Journal of Applied Finance, 11(10): 40-45.*

Sing, K. (2006). Capital Structure in Competitive Environment-A Guide for Decision
Makers, New Delhi: *Deep & Deep Publications (P) Ltd.,*

Shah, A. and Khan, S. (2007). "Determinants of Capital Structure: Evidence from
Pakistani Panel Data", *International Review of Business Research Papers, 3(4): 265-282.*

Taylor, W.B. Financial Policies of Business Enterprises, 2nd ed, Appleton – Century, Crofts N.Y.

Vitor, D. & Badu, J. (2012). Capital Structure and Performance of Listed Banks in Ghana. *Global Journal of Human Social Science, Volume 12. Issue 5, Online ISSN: 2249-460X & Print ISSN: 0975-587X.*

Wald, J. K. (1999). How Firm Characteristics Affects Capital Structure : An International Comparison . *Journal of Financial Research Volume 22, Issue 2*, pp 161–187.

Weston, F,J ., Brigham, E.F. (1978). Managerial Finance, Holt, Rinehart and Winston,, N.Y.15

Watson, D. and Head, A. (2007), Corporate Finance– Principles and Practices, 4th ed., FT Prentice Hall, UK.

Yegon, C., Cheruiyot, J., Sang, J. & Cheruiyot, P. (2014). The Effect of Capital Structure on Firm's Profitability: Evidence from Kenya's Banking Sector. Research Journal of Accounting and Finance, vol. 5, No.9 2014. ISSN 2222-1697 (Paper), ISSN 2222-2847 (Online).

ZINGALES, R. G. (December 1995). What Do We Know about Capital Structure? Some Evidence from International Data. *The Journal of Finance Volume 50, Issue 5*, 1421–1460.

APPENDICES

Table 4.3.1: Fixed Effect Test Results

Dependent Variable: NPM_?
Method: Pooled Least Squares
Sample: 2009 2015
Included observations: 7
Cross-sections included: 20
Total pool (balanced) observations: 140

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.503111	0.054134	9.293833	0.0000
DE_?	0.019129	0.015936	1.200366	0.2324
DA_?	-0.646712	0.100161	-6.456693	0.0000
Fixed Effects (Cross)				
ABOT--C	-0.014934			
ACPL--C	-0.188651			
AGTL--C	-0.272255			
AKZOY--C	-0.107857			
BAHL--C	0.365246			
COLG--C	0.127626			
DBCI--C	0.022883			
DGKC--C	-0.152527			
FABL--C	0.211867			
FCCL--C	-0.054571			
GLAXO--C	0.178518			
KOHC--C	-0.018497			
KSBP--C	-0.173616			
LPCL--C	-0.093598			
LUCK--C	-0.106366			
MARI--C	0.169184			
MLCF--C	-0.077312			
PAKT--C	0.027393			
SING--C	-0.075459			
SNBL--C	0.232925			

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.608495	Mean dependent var	0.122517
Adjusted R-squared	0.538821	S.D. dependent var	0.113337
S.E. of regression	0.076967	Akaike info criterion	-2.147543
Sum squared resid	0.699029	Schwarz criterion	-1.685285
Log likelihood	172.3280	Hannan-Quinn criter.	-1.959695
F-statistic	8.733389	Durbin-Watson stat	1.938248
Prob(F-statistic)	0.000000		

Table 4.3.2: Fixed Effect Test Results

Dependent Variable: ROA_?
Method: Pooled Least Squares
Sample: 2009 2015
Included observations: 7
Cross-sections included: 20
Total pool (balanced) observations: 140

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.312026	0.031693	9.845130	0.0000
DE_?	-0.005945	0.009330	-0.637233	0.5252
DA_?	-0.368693	0.058641	-6.287301	0.0000
Fixed Effects (Cross)				
ABOT--C	-0.027948			
ACPL--C	-0.039197			
AGTL--C	-0.045206			
AKZOY--C	-0.074935			
BAHL--C	0.060952			
COLG--C	0.190566			
DBCI--C	0.022701			
DGKC--C	-0.131241			
FABL--C	0.052586			
FCCL--C	-0.063327			
GLAXO--C	0.122205			
KOHC--C	0.032850			
KSBP--C	-0.086032			
LPCL--C	-0.044757			
LUCK--C	-0.045085			
MARI--C	0.003270			
MLCF--C	-0.046056			
PAKT--C	0.114691			
SING--C	-0.030944			
SNBL--C	0.034907			

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.749645	Mean dependent var	0.079819
Adjusted R-squared	0.705090	S.D. dependent var	0.082978
S.E. of regression	0.045062	Akaike info criterion	-3.218245
Sum squared resid	0.239605	Schwarz criterion	-2.755987
Log likelihood	247.2772	Hannan-Quinn criter.	-3.030397
F-statistic	16.82528	Durbin-Watson stat	1.433202
Prob(F-statistic)	0.000000		

Table 4.3.3: Fixed Effect Test Results

Dependent Variable: ROE_?
Method: Pooled Least Squares
Included observations: 7
Cross-sections included: 20
Total pool (balanced) observations: 140

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.533341	0.186573	2.858620	0.0050
DE_?	0.111064	0.054924	2.022142	0.0454
DA_?	-0.639652	0.345207	-1.852952	0.0664
Fixed Effects (Cross)				
ABOT--C	-0.043958			
ACPL--C	-0.166219			
AGTL--C	-0.310738			
AKZOY--C	-0.155805			
BAHL--C	0.078258			
COLG--C	1.070627			
DBCI--C	-0.273571			
DGKC--C	-0.251240			
FABL--C	-0.098115			
FCCL--C	-0.166468			
GLAXO--C	0.489342			
KOHC--C	0.011433			
KSBP--C	-0.164904			
LPCL--C	-0.204125			
LUCK--C	-0.103827			
MARI--C	0.091262			
MLCF--C	-0.241468			
PAKT--C	0.425916			
SING--C	-0.083833			
SNBL--C	0.097434			

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.622149	Mean dependent var	0.240176
Adjusted R-squared	0.554904	S.D. dependent var	0.397611
S.E. of regression	0.265268	Akaike info criterion	0.327179
Sum squared resid	8.303345	Schwarz criterion	0.789437
Log likelihood	-0.902518	Hannan-Quinn criter.	0.515027
F-statistic	9.252014	Durbin-Watson stat	1.484337
Prob(F-statistic)	0.000000		