

Managers' Risk Taking Behavior for Adjusting Capital Structure

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Abstract: This study is aiming to check that how firms adjust their capital structure in relation to risk exposure. Manager's behavior with respect to business risk is observed mainly, along with other variables namely profitability, size of the firm and sales growth in this study. Data of motor and vehicle sector of Karachi Stock Exchange over the period of 2006-2010 is used for this study. Results of this study show that managers are risk averse, whereas size and profitability are positively related to the capital structure. Profitable firms follow the tax based models. Sales growth is negatively related to capital structure. Firms with high sales growth have the agency problem.

Key words: Business Risk • Profitability • Size • Sales Growth • Capital Structure

INTRODUCTION

Since the theory of irrelevance of firm's value presented by [1], capital structure determinants have been a core research topic for financial researchers. Numerous theories have explained the factors related to capital structure namely packing order theory, market timing theory, signaling theory, free cash flow theory, agency theory and trade-off theory. These theories attempt to verify best combination of debt and equity and enhance the company's value.

There is a disagreement about the effect of business risk on the optimal debt level. [2, 3] and [4] argued favorably about the effect of business risk on debt equity mix; [5] found a negative effect; but [6, 7] and [8] conclude that business risk have no significant relationship with leverage. This study provides a clear answer about the question of effect of business risk on optimal level of debt [9]. All these researches are indicating the importance of the business risk for the business. Therefore it is important to consider the business risk factor for the firms while increasing leverage.

Risk is a critical factor in the capital structure decision. So it is needed to determine the level of risk while selecting the debt equity mix for the firm. This area is of core concern now days when the uncertainty has increased and prevailing everywhere in the economy. It is

needed to know that: Does risk exposure affect the capital structure of the non-financial listed firms at Karachi Stock Exchange?.

This study is contributing in the existing literature by conducting research in the developing country and emerging economy regarding the effect of risk dynamics on the financial policy of the firms. Role of business risk, while forming capital structure by the managers is studied in this paper. This paper explains that do the managers adjust their capital structure in accordance with business risk and how the profitability, size of the firm and sales growth are contributing to the capital structure formation. This paper also gives information to the analysts and investors about the agency problem by considering the behavior of managers.

Lenders, investors and financial analysts will get the benefit by understanding the risk mechanism through this paper. This study will give them the information about the psychology of the management of the Motor and vehicle sector firms about the capital structure formation and risk taking behavior. This study gives the information about the lending behavior of the managers of motor and vehicle sector firms. Lenders can use the information of this study for lending the money to motor and vehicle sector firms.

For the effect of risk dynamics, this study is using the data from five sectors of nonfinancial listed companies on Karachi Stock Exchange for the period of five years from

2006-2010. [10], [11, 12] and [13] studied the effect of risk exposure on the debt equity mix in emerging economy but all these all studies are on Ghana Stock Exchange. According to author's knowledge, no study is carried out in other emerging economy relevant to risk exposure. This study is contributing in research by analyzing the effect of risk on debt equity mix of the firm listed on Karachi Stock Exchange.

Literature

Business Risk: After the path breaking paper of [1] Modigliani and Miller said that increased leverage will lead to higher the firm's value because of imperfect capital market. This rework by MM [14] was the start of research work in the field of capital structure determinants. Researchers started investigating the effects of different variables on capital structure. Resultantly, many studies investigated the factors having impact on capital structure. [15] used the idea of agency cost in defining financial policy and later on [16] investigated the same idea). [17] stated that size is also important in formatting capital structure. [18] affirmed that agency cost is one of significant factor in determining debt equity mix. [4] consider agency cost as partial feature in shaping the debt equity mix. [19] stated that short term debt is the way to shorten the agency conflict and afterward [20] concluded the same in their study.

Financial risk and business risk terms can be used for denoting firm's risk. Abor and Biekpe [10] studied the effect of risk on the firms in the emerging economy of Ghana. [13] describe the financing decision of the firms listed on Ghana Stock Exchange against the risk exposure. Abor and Biekpe [11] evaluate the experience of risk on the capital structure of the firms in developing countries. [12] observed the degree to which corporate executives change their financial policy against risk exposure. All these studies are indicating that risk is important element in determining capital structure as [9] stated that risk is primary determinant of capital structure.

Risk of devastate increased as the leverage increased and it also increases the interest rate. Interest rate increased slowly when the debt is less risky but it increases sharply when the debt become more risky. This debt riskiness depends upon the earning volatility, if the earnings are less volatile then the debt is less risky but if the volatility in earnings is high the debt is highly risky. Likelihood of ruin is less for the corporations having stable cash flows. Therefore the interest rate will be low for these firms. Financer will not demand high interest rates because of less risk [21].

Like there is a disagreement about the effect of business risk on the optimal debt level. [5] found a negative effect; [4, 2] and [3] argued favorably about the business risk effect on debt equity mix but [6, 7] and [8] conclude that business risk have no significant relationship with leverage. Therefore upon the basis of above results we cannot make positive or negative relation of business risk with the capital structure of Pakistani firms.

Financial risk and business risk are denoted to risk of firm. Many researchers used business risk as important determinant of capital structure in their studies. [9] stated risk as primary determinant of capital structure. Many researchers has conducted their studies in the developed countries and used business risk as important dynamic in defining capital structure determinant. There studies reported an inverse relationship between business risk and financial policy. This study is using the standard deviation of earnings before interest and taxes for measuring the business risk.

H_0 = Business risk of the firm influences the financing policy of a firm.

H_i = Business risk of the firm does not influence the financing policy of a firm.

Profitability: Many studies have been conducted after the path breaking paper of [1] but still there is a disagreement regarding the relationship of profitability and capital structure. Tax based model argues about the increased leverage, as for getting the tax shield benefit. Whereas, pecking order is opposite to tax based model. Pecking order theory reports that when the profit is increased, firms go for internal financing [22]. According to pecking order theory, initially profits or retained earnings are utilized for investment and then later on they are incorporated in the capital structure. So, according to pecking order theory, profitable firms imply less debt in their capital structure. Results of [23] also support the pecking theory.

H_0 = Profitability of the firm influences the financing policy of a firm.

H_i = Profitability of the firm does not influence the financing policy of a firm.

Size: Many studies have proposed a positive relationship between capital structure and firm size. As proposed by [24], that firms with larger size go for long term debt as compared to smaller firms, smaller firms prefer short term

debt financing. In the issuance of long term debt, firms with larger size have benefit of economies of scale and they have more bargaining power comparative to firms with smaller size. Larger firms provide more information to lender as argued by [25]. Disclosure of information is more in larger firms, comparative to smaller ones [22], therefore these firms are considered as more reliable for lending. Most of times, larger firms have low leverage as they have more equity. Their cash flows are more stable and more diversified than the smaller firms; therefore bankruptcy probability is low in larger firms.

H_o = Size of the firm influences the financing policy of a firm.

H_i = Size of the firm does not influence the financing policy of a firm.

Sales Growth: Theoretical studies proposed inverse association between sale growth and leverage. Because when the sale will increase, firm's profitability will increase and firm will retain money which finances their projects by using this money. This will lead to less debt financing. This concept is supporting the pecking order theory, where organization first goes financing through retained earnings, then for debt and ultimately goes for equity. Expected future growth lead the firm for short term financing. According to the [15] long term financing is negatively associated with growth.

H_o = Sales growth of the firm influences the financing policy of a firm.

H_i = Sales growth of the firm does not influence the financing policy of a firm.

Methodology: This paper is using the data of the Motor Vehicles, Trailers and Auto parts sector of Karachi Stock Exchange from the period of 2006-2010. All the data is gathered from the balanced sheet analysis printed by the State Bank of Pakistan. This study is using the panel data of 19 firms out of 22 firms of Motor vehicle sector because of data availability issues. Descriptive stats are applied for obtaining the information about the characteristics of the data like the mean values over the period and the deviation of values from the mean values. Collinearity diagnostics are applied for confirming that there is no multi-collinearity in the data so that linear regression model can be applied. As the below mentioned econometric equation suggests that common effect model will be analyzed on this panel data.

$$\gamma_{it} = \alpha + \beta X_{it} + P_{it} + K_{it} + H_{it} + \varepsilon_{it} \quad (1)$$

γ_{it} is denoted to capital structure which is measured through the debt and equity ratio. Subscript i is representing the firm and t is representing the time. α is constant of the linear regression model. βX is depicting the business risk of the firm which is measured through the standard deviation of earnings before interest and taxes. P is denoted to the profitability which is measured by the return on asset ratio. K is denoted to Size and measured through the total assets of the firm and H is denoted for the sales growth which is measured by current year's 'sales - last year's sales / last year's sales. μ_{it} is an error term for the common effect model.

RESULTS AND DISCUSSION

This section is describing the results of descriptive stats, collinearity diagnostics and linear regression model. Descriptive stat table is explaining the mean and standard deviation values over the period of time.

Mean of capital structure is 0.44 with the deviating value of 2.71035. Mean value for business risk is recorded as 3.1746 and the deviating value from mean value is 4.46106. Profitability is showing the 8.1686 mean value and 17.67465 deviating value. Size has 5176955.73 mean value and 5683223.069 deviating value. Sales growth has the mean value .223839 and deviating value .96304.

Collinearity Diagnostics: Collinearity diagnostics are used for observing the factor of multi-collinearity in the variables of the study so that linear regression model can be used for data analysis. VIF values and level of tolerance demonstrate the presence or absence of multi-collinearity in the variables.

Significant level of tolerance is below 1 and the VIF value should be above 1 and below 10. All the variables of this study have the tolerance value below 1 and VIF value below 10 and above 1. Therefore, there is no multi-collinearity factor in the variables of this study and regression model can be applied to this data.

Regression Model: Data analysis reports that business risk is negatively related with the capital structure. Business risk is affecting the capital structure with the value of -3.011. Profitability has positive relationship with the capital structure formation and reporting the 0.038 value of effect. Size is also associated with firm's financial policy and has positive correlation with capital structure

Table 1: Descriptive Statistics

	Mean	Std. Deviation	N
Capital Structure	0.4400	2.71035	95
Business Risk	3.1746	4.46106	95
Profitability	8.1686	17.67465	95
Size	5176955.73	5683223.069	95
Sales Growth	.223839	.96304	95

Table 2: *Collinearity Diagnostics*

	Tolerance	VIF
Business Risk	.244	4.100
Profitability	.902	1.108
Size	.235	4.263
Sales Growth	.980	1.020

Table 3: *Regression Analysis*

Variables	Regression Coefficients	T-Statistics	Standard Errors	P Values
(Constant)	-1.126	-2.355	.354	.023
Business Risk	-3.011	-2.649	.000	.010
Profitability	.038	2.522	.015	.013
Size	2.618	2.878	.000	.005
Sales Growth	-.630	-2.398	.263	.019
R-Square	.232			
Adjusted R Square	.198			
F-Statistics	6.789			
Overall P Value	.000			

with the value of 2.618. Sales growth has a strong negative relation with the financial policy of the firms in motor vehicle sector with the value of -0.630.

Results are demonstrating that managers of motor and vehicle sector are considering the business risk while making decisions of capital structure. When the earning become more volatile then managers decrease the portion of debt in their capital structure so that firms can avoid bankruptcy risk. So, managers of the motor vehicle sector have keen concern with the risk factor and they are risk averse. Another reason behind being a risk averse is the uncertainty in the economy of Pakistan. Therefore managers do not go for high risk. These findings are in line with the findings of the study of [5].

Lenders have the opportunity to lend money to motor and vehicle sector as the managers are risk averse themselves. Therefore the chances of bankruptcy are very low and managers will not obtain excess debt which could be harmful for the firm. So, the lenders are secure. Findings of profitability are also supporting this behavior of managers in the motor and vehicle sector. As, when the earning grow up and get stable then managers go for external financing because they have enough money to pay back. Increased profitability leads the managers towards obtaining the benefits of tax shield. By getting

the tax shield benefits, managers also avoid the agency problem and increase the firms' earnings and shareholders' earnings as well. Lenders are also secure about their money because of high profitability and stable earnings.

When the size of the firm increases then ratio of debt and equity also increases. Firms with more total assets are using high debt level in their capital structure. Managers have the opportunity to avail more debt by using the assets as collateral. Lenders also feel secure by having collateral against lending. Therefore, the managers of large firms use this opportunity for increasing debt in their capital structure. Increased debt also increase the profitability of the organization because of tax shield benefits and on the other hand it decreases the ratio of loss against the equity because firm's liability is limited to its capital. When the size of firm increases then managers become risk seekers and imply more debt in capital structure.

Managers of the firms with high sales growth follow the pecking order theory. They go for internal financing and minimize the bankruptcy risk. Agency problem is also created in this scenario as the managers do not pay dividend to the shareholders and invest the earnings in the firms for avoiding the bankruptcy risk.

CONCLUSION AND IMPLICATIONS

This paper studies the behavior of managers of motor and vehicle sector firms with respect to business risk, profitability, size of the firm and sales growth factors on the capital structure decision. Panel data of motor and vehicle sector of Karachi Stock Exchange of Pakistan is used in this study. Analysis demonstrates that managers have risk averse behavior while forming their capital structure when they found volatility in earnings so that they could avoid bankruptcy risk. Profitability is positively associated with the capital structure which shows that managers use more debt when earnings get stable and profit of firm increases for enjoying the tax shield benefits.

Managers use the level of debt in their capital structure in accordance with the size of the firm. The larger the size of firm, the larger the portion of debt is implied in the capital structure. Managers use the assets as collateral for obtaining debt from the lenders. Managers of the firms with high sale growth follow the pecking order theory and use the internal financing so that firm can avoid bankruptcy risk. Use of internal financing becomes the reason for agency problem because managers do not offer dividend to shareholders and it also becomes a reason of decreased earnings because of not having the tax shield benefits. So, the organizations with high sales growth are facing the agency problem.

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