

## Investigating the Moderating Role of Firm Strategy in the Relationship Between Leverage and Performance

*Umar Farooq, Ahsan Ali Ashraf and Naveed Ahmad*

Lahore Leads University, Lahore, Pakistan

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**Abstract:** This study investigates the moderating effect of firms' strategy on the leverage-performance relationship. Data were collected for 125 Pakistani textile firms listed at Karachi Stock Exchange (KSE) for the period of 2006 to 2011. Results revealed that both short term and long term debt borrowings are negatively associated with profitability. These negative relationships, however, are less severe in case of cost leadership comparatively. We argue that debt covenants imposed by creditors enforce managers for operational efficiencies and restrict them from taking riskier decisions required for innovative performance. We also found that the benefits of debt covenants in cost leadership strategy are more prominent for long term debt borrowings as compared to short term debt financing. This research provides useful information for managers to make strategic financing decisions enhance their organizational performance.

**Key words:** Capital Structure • Leverage-Performance • Generic Strategies • Profitability

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### INTRODUCTION

Researchers have paid significant attention to the Leverage-performance relationship especially since 1958 when Modigliani and Millar developed Capital Structure Irrelevancy theory. They argued that capital structure decisions are irrelevant to the firm value under efficient market assumption that do not hold true in real world [1]. However in post to Capital Structure Irrelevancy theory, researchers proposed various notions to explain the leverage-performance relationship in real world practices. Despite such abundant research, researchers could not consent to a single generalized Capital Structure theory so far. Lack of consensus is attributed to the situational factors and contingences of the leverage-performance relationship [2, 3]. Previously leverage-performance relationship is studied within different contingency factors such as firm size [2], firm growth [4], environment stability [5] or even competitive intensity [6] and within different cultures [7].

However, not much importance is given to study firm strategy as moderator to the leverage-performance relationship in this respect. The purpose of this research is to investigate the leverage-performance relationship

within contingency factor of firm strategy in case of Pakistani textile firms listed at Karachi Stock Exchange (KSE). Porter's generic strategies proposed that firms can gain competitive advantages through either cost differentiation or product differentiation [8]. In cost differentiation firms endeavour to make their operations more efficient to reduce their cost as compared to their competitors. On the contrary in product differentiation firms make their products and services in a way that differentiate them from their competitors. This implies that cost leadership firms endeavour to gain operational efficiencies while product differentiation firms focus on innovation and creativity to increase their competitive advantage [8, 9].

Such competitive strategy can affect firms' debt borrowing decisions. The effect of competitive strategy on debt borrowing decision can be explained through the linkage between Agency Theory of Capital and firm strategy [10]. Agency theory argues that managers are independent from shareholders. This independency allows managers to exploit the stakes of shareholders for their own benefits. For instance Jensen argued that managers can use free cash flows for their own stakes in the form of bonuses rather than investing into positive

NPV projects [11]. To control the managers and compel them to work for the best of their stakeholders, debt borrowings can be used [10, 11].

As leverage increases, cost of debt increases. This increase enforces managers for better performance to meet rising financial obligations [12]. Moreover, creditors also impose covenants on managers to use resources in efficient way to ensure their repayments on scheduled time [5]. This phenomenon can be explained as critical agency problem controlling mechanism. The effectiveness of such controlling mechanism depends on firm strategy (cost leadership or product differentiation) [13]. Since operational efficiencies are critical in case of cost leadership, debt covenants imposed by creditors will enforce managers for better performances. So, borrowing strategy in firms that follow cost leadership strategy increases their performances through the imposed covenants by creditors. On the contrary, firms that follow product differentiation strategy, which requires riskier decisions, the imposed covenants could affect of creativity through avoidance of the riskier decisions.

Jermias also provided similar results and found that debt borrowings are more costly for firms following product differentiation as compared to firms following cost leadership strategy [13]. This implies that financing decisions in consistent with firm strategy results into high firm performances. The purpose of this study is also to investigate the moderating role of firm strategy on the leverage-performance relationship. This study will contribute to the literature in many ways. First, this research was conducted in a developing country, Pakistani and in one of the most active sectors in the whole developing economics which is textile sector. Thus, results of this study will be generalizable in all developing countries. Second, based on the argument that each industry has its own leverage-performance relationship effects, this study focused only on textile sector which will give a useful and accurate results. At last, this research also considered both long term debt and short term debt separately rather than focusing only on total debt ratio while studying moderating effects of firm strategy. So, the study of industry specific moderating role of firm strategy on short term and long term leverage-performance relationship in a developing country of Pakistan make this research a significant contribution to the literature of finance.

## MATERIALS AND METHODS

**Data and Sample:** Data were collected from 125 textile firms listed in KSE. The data covered the period of time from 2006 to 2011. Textile sector was chosen because it is one of the biggest sectors of Pakistan in term of number of firms. The data consist of unbalanced panel data with 712 numbers of observations. Data were taken from “*financial statements analysis of companies (non-financial) listed at Karachi Stock Exchange*” published by State Bank of Pakistan for 2011. The financial statement analysis publication provides financial data for 155 listed textile firms. However, it contains 30 default firms under non-conformity to KSE listing regulations are excluded from final sample. Moreover, firms’ observation showing zero sales and negative retain earnings are also excluded to reach to final sample of 712 observations.

**Strategic Orientation:** Methodology is divided into two parts. First, strategic orientation *i.e.* cost leadership or product differentiation of firms is explored through cluster analysis. However, for this purpose methodology of Jermias is partially adopted [13]. Firms’ strategic orientation is measured through operational efficiencies, gross profit margins and inventory turnover. Jermias used sales to total assets, gross profit margins and research and development in their cluster analysis to distinguish firms following cost leadership or product differentiation strategy [13]. They argued that firms following cost leadership show low gross profit margins, high operational efficiencies and low research and development while firms following product differentiation show converse results. Product differentiation firms charge high prices due to their high quality differentiated products or services while cost leadership firms charge low prices to gain economy of scales. In this way one can differentiate firms’ strategic orientation of product differentiation and cost leadership on the basis of gross profit margins.

Similarly, cost leadership firms endeavoured to gain operational efficiencies. While on the contrary product differentiation firms concentrate to improve the quality of their product or services through research and development. So, it can be argued that cost leadership firms concentrate on operational efficiencies while product differentiation firms focus on research and development. This implies that operational efficiencies

and research and development can also be used to distinguish firm's competitive strategy. However, data for research and development is not provided in annual publication of financial statement analysis. So in this research, firms' strategic orientation is defined on the basis of gross profit margins, sales to total assets as defined by Jermias and inventory turnover. It is argued that firms following cost leadership endeavoured to increase their profit through economy of scales. So, it can be predicted that such firms will show low inventory turnover in days. While on the contrary firms following product differentiation gain through high prices rather than economy of scales that could lead to the high inventory turnover in days. In short firms' strategic orientation can be differentiated on the basis of inventory turnover along with gross profit margins and operational efficiencies.

**Regression Models:** On the other hand leverage-performance relationship is tried to explore while considering firms' strategic orientation in second perspective. It is argued that firms' strategic orientation can affect the significance of leverage-performance relationship. However, to conclude proposed theory GLM (generalized linear model) regression analysis is executed for three proposed models 1,2 and 3. In all three models dependent variable is firms' performances measured through return on assets (ROA). Return on assets is the famous accounting based measurement of profitability and used frequently while studying leverage-performance relation [15-17]. Return on assets represents the ratio of earnings before interest and taxes to total assets. However, earnings before interest and taxes are taken to control the effects of interest and taxes those are critical while studying capital structure decisions [18].

$$\text{Model (1): } ROA = \alpha + \beta_1 DR + \beta_2 DR * Strategy + \beta_3 Size + \beta_4 CR + \varepsilon$$

$$\text{Model (2): } ROA = \alpha + \beta_1 STDR + \beta_2 STDR * Strategy + \beta_3 Size + \beta_4 CR + \varepsilon$$

$$\text{Model (3): } ROA = \alpha + \beta_1 LTDR + \beta_2 LTDR * Strategy + \beta_3 Size + \beta_4 CR + \varepsilon$$

Independent variable of leverage is measured through debt ratio (DR), short term debt ratio (STDR) and long term debt ratio (LTDR) for three proposed models

respectively. Using different types of debt borrowings with respect to firm value can provide insight information. However, to investigate the moderating effects of firm strategy cross effects of three proxy of leverage with firm strategy is used as shown in three proposed models. Firm strategy is dummy variable that is equal to 1 if firm is following cost leadership strategy while 0 if firm is following product differentiation strategy. Despite this two control variables of size and current ratio (CR) are also used. Size is measured through natural log of total sales while current ratio is the ratio of current assets and current liabilities. Since, larger firms and firms with high liquidity are more capable of earning profits so it is important to control their effects to explore true leverage-performance relationship within two strategies.

## RESULTS AND DISCUSSION

**Cluster Analysis:** The first part of this section will explore the cluster analysis to find out the firm strategic orientation. K-mean clustering analysis is used to classify 125 firms with 712 numbers of observations. Table 1 shows the classification table of all the observations. It can be seen that two clusters are constructed from K-mean clustering analysis. There are 519 observations classified under cluster 1 while the rest of 193 observations are classified under cluster 2. The classification was base on sales to total assets, gross profit margin and inventory turnover in days as discussed earlier. Table 2 provides the mean statistics of thee parameters for each cluster. It can be seen that cluster 1 is showing low inventory turnover in days, low gross profit margins and high operational efficiencies as compared to cluster 2. In cluster 1 inventory turnover in days is 65 days while same statistics is 184 days for cluster 2. This implies that firms in cluster 1 convert their average inventory into sales within 65 days while firms in cluster 2 take 184 days.

Similarly, average GP margins in cluster 1 are 0.09 while in cluster 2 average GP margins are 0.11. Nonetheless, operational efficiencies measured with sales to total assets are high in cluster 1 and documented the value of 1.26 times as compared to the 0.66 times in cluster 2. So, characteristics of high operational efficiencies with low inventory turnover days and low gross profit margins are showing cost leadership strategic orientation in cluster 1. While high gross profit margins and inventory turnover in days along with low operational efficiencies in cluster 2 is showing product

Table 1: Classification Table of Cluster Analysis

Cluster	Observations
Cluster 1	519
Cluster 2	193
Total	712

Table 2: Mean For Three Parameter in Each Cluster

	Cluster 1	Cluster 2
Inventory Turnover in days	65 days	184 days
Gross Profit Margin	0.09 times	0.11 times
Sales to total Assets	1.26 times	0.66 times

differentiation strategic orientation. So, it is concluded that firms in cluster 1 are following cost leadership and in cluster 2 firms are following product differentiation strategy. On the basis of these results a new dummy variable of 'strategy' is constructed that is equal to 1 if firms is in cluster 1 or following cost leadership and 0 when firms is in cluster 2 or following product differentiation.

**Regression Analysis:** This section will explain the results obtained from the execution of GLM regression analysis for the three proposed models. Table 3 is providing the results in this respect. All the three models are significant as their Chi-square values are quite high. Model 1 is developed to study the relationship between debt ratio and profitability while moderating the effects of firm strategy. It is found that there is negative relationship between debt ratio and return on assets. Table 3 demonstrates that as the unit increase in debt ratio, return on assets decreases by 10.4% on average. It is consistent with [18] who argued that in developing countries firms overleveraged themselves that result into negative performances.

Another reason can be the environment instability in Pakistan where debt borrowings negatively affect the firm performances as argued by [5]. However, Amjad concluded this negative relationship in term of pecking order theory and argued that due to less developed capital markets in Pakistan firms prefer to utilize their internal funds first before financing through debt or equity [15]. Cross effect of debt ratio and strategy is showing positive (0.021) statistics. Strategy is the dummy variable that is equal to 1 if firm is following cost leadership strategy and 0 if firm is following product differentiation strategy. Results reveal that profitability of cost leadership firms increase by 2.1% as compared to product differentiation firms when a unit increase in debt ratio is evidenced. In other words in general with a unit

increase in debt ratio firm's profitability decreases by 10.4% however, if it is a case of cost leadership strategy then firms' profits decrease by  $(-0.104 + 0.021 = -0.083$  or  $-8.3\%)$  8.3% on average. This indicates that cost of financial distress is more severe for firms following product differentiation as compared to firms following cost leadership strategy.

One of the reasons behind these relationships can be attributed to debt covenants that enforce managers to gain operational efficiencies that are more useful in case of cost leadership strategy and to avoid risk that affects the firm ability to be more creative or innovative as argued by [13]. Though debt covenants increase profits in case of cost leadership strategy comparatively but still the overall results are showing average losses of 8.3%. It can be due to the argument provided by [19] that to solve agency problems in developing countries firms often overleveraged themselves that result into negative performance. So, it can be concluded that to a certain limit of debt borrowings firms' operational efficiencies increase while in practice firms often deploy debt more than that limit that ultimately results into overall losses.

It is more appropriate to investigate leverage-performance relationship for different types of debts such as short term and long term debt borrowings. Model 2 represents the effects of short term debt ratio on firm performances with moderating effects of firm strategy. It is found that short term debt ratio is negatively associated  $(-0.025)$  with return on assets in model 2. These results are found insignificant. Such insignificant results can be due to the benefits and costs of current liabilities that intersected each others' effects as argued by [20]. On the contrary cross effect of short term debt ratio and firm strategy showed significant positive results. Model 2 is showing that unit increase in short term debt ratio increases the profits by 3.5% in cost leadership strategy as compared to product differentiation strategy. This implies that current liabilities are also more profitable comparatively for firms following cost leadership strategy. However, one cannot conclude about overall effects of short term debt ratio in case of cost leadership as short term debt ratio showed insignificant results.

Long term debt ratio is significantly negatively related with profitability in model 2 too. Results showed that with the unit increase in debt ratio firm's profit decrease by 16.3% on average. However, cross effect of long term debt with strategy is showing significant positive beta of 0.10. This indicates that long term debts are more profitable in cost leadership strategy as

Table 3: GLM Regression Analysis

Parameters	Model 1		Model 2		Model 3	
	$\beta$	Sig.	$\beta$	Sig.	$\beta$	Sig.
<i>Constant</i>	-0.204		-0.298	0.000	-0.259	0.000
<i>DR</i>	-0.104	0.000				
<i>DR * Strategy</i>	0.021	0.015				
<i>STDR</i>			-0.025	0.198		
<i>STDR * Strategy</i>			0.035	0.002		
<i>LTDR</i>					-0.163	0.000
<i>LTDR * Strategy</i>					0.104	0.001
<i>Size</i>	0.023	0.000	0.025	0.000	0.022	0.000
<i>CR</i>	0.023	0.001	0.035	0.000	0.039	0.000
<i>Chi-Square</i>	299.377		291.355		293.207	

compared to product differentiation strategy. In other words firms' profits decrease by 16.3% on average when debt ratio increase by a unit while in case of cost leadership strategy profits only decrease by (-0.163 + 0.104 = -0.059 or -5.9%) 5.9%. So, these results conclude that though long term debt increase profits comparatively for cost leadership strategy but still firms bear overall losses in this respect. It is also notable that cross effect of short term debt ratio with firm strategy is less than the cross effect of long term debt ratio with firm strategy. This shows that the benefits of long term borrowings are more than the benefits of short term borrowings in case of cost leadership strategy comparatively. Such augmented benefits can be due to the more strict debt covenants impose of by long term finance providers as compared to short term loan providers. Moreover, in general long term loans enhance the productive efficiencies while short term borrowings fulfil the working capital requirements. In this way long term loans are more consistent with the firms' strategy of cost leadership.

In summary, these results explore three important findings. First, debt borrowings negatively affect the firms' profits in all cases. Such losses are due to the environment instability in Pakistan and overleveraged firms. Second, firms' strategy significantly moderates the leverage-performance relationship. It is found that cost of financial distress is less severe in case of cost leadership strategy due to debt covenants that result into operational efficiencies. However, still these firms documented overall losses due to over leverage as argued by [19]. Third, it is also found that moderating effects of firm strategy differ with different types of debts including short term and long term debts. Results reveal that benefits of debt covenants in cost leadership strategy are more prominent in case of long term debt borrowings as compared to short term debt borrowings. So, it is

concluded that an integrated approach between business strategy and capital structure decisions can increase the firms' profitability.

### CONCLUSION

Capital structure decisions are viewed significant contributor to the firm profitability. However, it is argued that it is not appropriate to investigate direct leverage-performance relationship as various contingencies and situational factors could affect this relationship significantly. This research endeavoured to explore firm strategy of cost leadership and product differentiation proposed by Porter as contingency factor to the leverage-performance relationship. In order to conclude proposed theory, data for 125 textile firms listed at KSE from 2006 to 2011 are selected after excluding default firms. Since capital structure decision heavily depends on industry characteristics so only textile sector that is biggest sector among Pakistani non financial industries are selected.

Research methodology is segregated in two parts. First, firms are divided into two categories of cost leadership and product differentiation strategy through cluster analysis. However, cluster analysis is conducted on the basis of inventory turnover in days, gross profit margins and sales to total assets. In second stage leverage-performance relationship is studied while moderating firms' strategy defined in cluster analysis. It is found that debt ratio, short term debt ratio and long term debt ratio all are negatively associated with profitability. However, this negative relationship is less severe in case of cost leadership strategy as compared to product differentiation strategy. Results showed that cost leadership strategy followers' profitability increase by 3.5% and 10% as compare to product differentiation

followers when short term debt ratio and long term debt ratio increase by unit respectively. It is argued that reason behind this sever effects can be due to debt covenants imposed by creditors that could affect the innovative ability in product differentiation strategy and operational efficiencies in cost leadership strategy. Further more results also concluded that benefits of debt covenants are more prominent in cost leadership strategy when long term debt is deployed as compared to short term debt financing. It is argued that long term debt financing is more consistent with the firm strategy of cost leadership that results into high performances.

### REFERENCES

1. Modigliani, F. and M. Miller, 1958. "The Cost of Capital, Corporate Finance and the Theory of Investment." *American Economic Review*, 48(1): 261-297.
2. Jaggi, B. and F. Gul, 1999. "An Analysis of Joint Effects of Investment Opportunity Set, Free Cash Flows and Size on Corporate Debt Policy." *Review of Quantitative Finance and Accounting*, 12: 371-381.
3. Rocca and La. Maurizio, 2007. "The Influence of Corporate Governance on the Relation between Capital Structure and Value." *Corporate Governance* 7(3): 312-325. doi:10.1108/14720700710756580.
4. McConnell, J. and H. Servaes, 1995. "Equity Ownership and the Two Faces of Debt." *Journal of Financial Economics*, 39(1): 131-157.
5. Simerly, R. and M. Li, 2000. "Environmental Dynamism, Financial Leverage and Performance: a Theoretical Integration and an Empirical Test." *Strategic Management Journal*, 21(1): 31-49.
6. O'Brien, J., 2003. "The Capital Structure Implication of Pursuing a Strategy of Innovation." *Strategic Management Journal*, 24(2): 415-431.
7. Gleason, Kimberly, C., Lynette Knowles Mathur and Ike Mathur, 2000. "The Interrelationship Between Culture, Capital Structure and Performance: Evidence from European Retailers." *Journal of Business Research*, 50: 185-191.
8. Porter Michael, E., 1985. *Competitive Advantages*. New York.
9. Porter Michael, E., 2008. *Competitive Advantage: Creating and Sustaining Superior Performance*. Simon and Schuster. <http://books.google.com/books?hl=en&lr=&andid=H9ReAijCK&cCandpgis=1>.
10. Jensen, Michael and W. Meckling, 1976. "Theory of the Firm, Managerial Behavior, Agency Costs and Ownership Structure." *Journal of Financial Economics* 3(1): 30-60.
11. Jensen, Michael, 1986. "Agency Costs of Free Cash Flow, Corporate Finance and Takeovers." *American Economic Review*, 76(2): 323-329.
12. Berger, A.N. and E. Bonaccorsi di patti, 2006. *Capital Structure and Firm Performance: A New Approach to Testing Agency Theory and an Application to the Banking Industry*. *Journal of Banking and Finance*, 30(4): 1065-1102.
13. Jermias Johnny, 2008. "The Relative Influence of Competitive Intensity and Business Strategy on the Relationship Between Financial Leverage and Performance." *The British Accounting Review*, 40: 71-86. doi:10.1016/j.bar.2007.11.001.
14. Balakrishnan, S. and I. Fox, 1993. "Asset Specificity, Firm Heterogeneity and Financial Leverage." *Strategic Management Journal*, 14(1): 3-16.
15. Amjed Sohail, 2007. "The Impact of Financial Structure on Profitability?: Study of Pakistan ' s Textile Sector." *MIBES*: 440-450.
16. Abor, Joshua and Nicholas Biekpe, 2009. "How Do We Explain the Capital Structure of SMEs in Sub-Saharan Africa?: Evidence from Ghana." *Journal of Economic Studies* 36 (1): 83-97. doi:10.1108/01443580910923812. <http://www.emeraldinsight.com/10.1108/01443580910923812>.
17. Aftab, Muhammad, Rehan Ehsan, Saad Naseer and Tahir Awan, 2012. "The Effect of Corporate Strategy and Capital Structure on Performance of Banking Sector of Pakistan." *Global Journal of Management and Business Research*, 12: 17.
18. Raza, Husnain, Sohail Aslam and Umar Farooq, 2013. "Financing Pattern in Developing Nations Empirical Evidence from Pakistan." *World Applied Sciences Journal* 22(9): 1279-1285. doi:10.5829/idosi.wasj.2013.22.09.40.
19. Zeitun, Rami and Gary Gang Tian, 2007. "Capital Structure and Corporate Performance?: Evidence from Jordan." *Australasian Accounting Business and Finance Journal*, 1(4): 40-61.
20. Pindado, J. and L. Rodrigues, 2005. *Determinants of Financial Distress Cost*. *Financial Markets and Portfolio Management*, 19(4): 343-359.