Journal of Poverty, Investment and Development
ISSN 2422-846X An International Peer-reviewed Journal
Vol.23, 2016

Firm Size as Moderator to Leverage-Performance Relation: An Emerging Market Review

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Abstract
Present study explored leverage-performance relation while the moderating firm size in developing countries like Pakistan. Data is collected for 304 Pakistani non-financial firms for the period of 2005-2013. It is found that overall leverage-performance relation is negative for all types of firms. However, such losses are more prominent for small size firms. Results also showed that the leverage-performance relation is nonlinear for medium and large size firms.However, in practice these firms are not targeting optimal level and over-leveraging that ultimately decrease their profits.So, financial managers of small size firms should avoid debt financing while for large and medium size firms,managers need to adjust their debt ratio toits optimal level.
Keywords: Leverage, Performance, Capital Structure, Moderation, Firm Size
JEL code: G320

1. Introduction

Capital structure is one of most studied areas of corporate finance from last few decades (Gama & Galvão, 2012; Stretcher & Johnson, 2011). Despite the abundant literature of capital structure, researchers are failed to consent to a single generalized theory. Though, Modigliani & Miller, (1958) proposed irrelevancy theory and argued that firm value is not affected by capital structure decisions but the theory is only applicable within perfect market conditions those are not subsisted in real world. Myers, (1984)argued that in the absence of perfect market conditions, capital structure become more relevant. Consequently, following irrelevancy theory, various theories are devised to explain leverage-performance relation in real world practices.

However, authors documented different results and explained variousrationales in this respect. Some authors found positive leverage-performance relation while others believe conversely and described debt as negative connotation (Abor, 2010). Even some studies found insignificant or inconsistent results in this respect(Fama & French, 1998; Lemmon & Zender, 2001). It is argued that reason behind such contradictory and inconsistent results is contingency and situational factors (Jermias, 2008). O'Brien, (2003) also argued that studying direct leverage-performance relationship could portray misleading conclusions due to situational and contingency factors. Magnitude and even direction of leverage-performance relation can change due to these factors. Therefore, it is important to consider moderating factors while studying leverage-performance relation.

Previously, most of the studies explored direct leverage-performance relation while few articles considered moderating factors in this context. For instance, Jermias, (2008) and O'Brien, (2003) studied firm strategy and competitiveness, Simerly & Li, (2000) explored environment dynamism and McConnell & Servaes, (1995) argued to the growth opportunities as potential moderators to the leverage-performance relation. However, one of the firm specific less researched areas that can also moderate the leverage-performance relation is the firm size. Firm size is viewed as significant factor that can affect the firm's relation withits external environment (Ezeoha, 2008). Since, larger firms have more capacity to influence their stakeholders, their role is more critical in corporate environment. Similarly, these firms play significant role in commercializing innovative ideas provided by small firms. From macroeconomic perspective much part of economic growth came from the growth of large size concerns. So, with its increasing recognition to external business environment firm size can be an important ingredient to corporate finance decisions (Voulgaris, Asteriou, & Agiomirgianakis, 2004).

If these arguments are true then capital structure decisions and their consequences can also be affected by firm size especially in developing countries where environment is found more dynamic.Dynamic environment can variably affect the competitiveness of large and small firms that affects their capital structure decisions. The purpose of this research is also to investigate the leverage-performance relationship within contingency factor of firm size for Pakistani non-financial firms. In Pakistan, existing literature is vacant from study of leverage-performance relation in moderation of firm size. Though, some authors have studied firm size as moderator to the capital structure decisions in other contexts (González & González, 2012; Ozenbas & Portes, 2011; Voulgaris et

al., 2004). However, these studies mainly focused on determinants of debt borrowings while no attention is given to study moderating role of firm size to leverage-performance relation. This research fills this literature gap and investigates leverage-performance relation for small, medium and large size firms in case of Pakistani non-financial firms listed at Karachi Stock Exchange (KSE).

2. Theoretical Background:

2.1 Capital Structure Theories:

Originally, it was Modigliani & Miller, (1958) who first started the debate of leverage-performance relation. They argued that under efficient market hypothesis such as neutral tax, no agency cost, symmetric information and no transaction cost,the firm value is irrelevant of its capital structure. However, the implication of irrelevancy theory is questioned due to the non-existence of efficient market in real world (Harris & Raviv, 1991). So, after their work various authors established the rationales for the implication of leverage-performance relation in the absence of efficient market. Trade off theory, pecking order theory and agency theory are three most prominent relevancy theories those in this respect.

According to Trade off theory, benefits and costs are associated with debt and firms should follow a targeted debt ratio where benefits are maximum against minimum loss (Graham, 2000; Kim & Sorensen, 1986). Key benefit of debt borrowings is tax advantages. Conversely, increased debt levelaugments the chance of default and the cost of financial distress. Such costs are segregated into two categories of direct cost of financial distress and indirect cost of financial distress. However, firms can maximize their value to follow optimal debt ratio where its benefits are maximum with minimum cost (Kim & Sorensen, 1986).

Similarly, agency theory articulates debt borrowings as positive connotation in term of controlling mechanism of agency problems (Jensen & Meckling, 1976). Managers are the agent of their shareholders and they should work in the best interest of their principal. However, conflict can arise between the objectives of managers and their shareholders especially in case of free cash flows (Jensen, 1986). It is argued that managers can use free cash flows for their personal benefits while deploying more debt can enforce them to invest such free cash flows to positive NPV projects to meet new-fangled obligations. Moreover, creditors also impose debt covenants that restrict managers to use these cash flows for their personal benefits. This implies that debt borrowings can act as monitoring mechanism and increase managerial performances.

Conversely, Pecking order theory postulates negative leverage-performance relationship. The theory argued that firms prefer their internal funds over debt and equity while financing their operations (Myers & Majluf, 1984). Pecking order theory suggests that firms follow hierarchy of financing options that start from retain earnings to external debts to equity. Since, asymmetric information prevails in the market so pecking order theory believes that investors will under-price newly issued shares. To avoid such losses managers consider equity financing as a last resort. Thus, profitable firms prefer theirinternal funds to finance their operations that lead to negative leverage-performance relation.

However, it is argued that these traditional capital structure theories do not endow with sufficient explanation of capital structure for small, medium or large firms (Ezeoha, 2008). Implication of these theories can vary within these categories of firm size because small and large firms contain different characteristics which can direct to different financial decisions (Voulgaris et al., 2004). Subsequent part will explore that how these categories of firm size differ from each other and affect capital structure decisions.

2.2 Firm Size and Capital Structure:

Previous literature has explored various differentiating factors between large and small size firms. The most prominent distinguishing factors are level of profits and their volatility (González & González, 2012). It is argued that larger firms generate high and less volatile profits while small firms do conversely. Similarly, small firms also document low liquidity as compared to large firms. This indicates that small firms can be more risky due to low liquidity and volatile profits as compared to larger firms. Moreover, larger firms also hold more fixed tangible assets as compared to the small firms. Such characteristics make it easier for larger firms to access debt markets without difficulty. So, it is mush possible that large firms deploy more debts as compared to small firms.

However, important thing is that what will be the value of large and small firms if they deploy more debt. The purpose of this research is to investigate such role of firm size to the leverage-performance relation. Previously, moderating effects of firm size to leverage-performance relation is found to be ignored. Though, one can find studies investigating leverage-performance relation for SMEs without comparing with large firms. For instance Abor, (2010) studied leverage-performance relation for SMEs from Ghana and South Africa and found that in general debt and especially long term debts are negatively associated with firm profitability. On the contrary Jaggi & Gul, (1999) studied moderating effects of size to the relationship between investment opportunities, free cash flow and debt borrowing. Their results revealed that there is a positive relation between debt and free cash flows for low investment opportunity set firms when firm size is high. They found that size is a significant moderator to the relation between investment opportunities, free cash flow and performance.

González & González, (2012) andVoulgaris*et al.*,(2004) explored determinants of capital structure to the contingency of firm size but did not consider it with respect to leverage-performance relation. This research proposed that leverage-performance relation can vary within different firm size. Since, larger firms generate high and less volatile profits with strong liquidity so their risk premium will also be lower comparatively. Similarly, information is less asymmetric in case of larger firms that also decrease their uncertainty level. Moreover, larger firms also hold high tangible assets that they can use as collateral while borrowing external debt. Consequently, these larger firms access the debt market easily at lower cost to gain tax advantages. So, in accordance with the trade-off theory, one can anticipate positive leverage-performance relation for large size firms. Agency theory also describes such positive leverage-performance relationship for large firms. Since, large firms generate more profits and hold high free cash flows that managers could use for their own benefits. So, to avoid such agency issue debt borrowings can act as monitoring mechanism and enforce managers for better performances. Hence, the first hypothesis of this research will be as follows.

H_1: There is positive relation between debt ratio and firm profitability for larger firms.

On the contrary small firms contain low liquidity and low profits with more volatility that increases their risk premium. It is argued that small firms show more exposure to market dynamism that increases their idiosyncratic risk and ultimately excess returns comparatively. This argument can be more prominent in the case of developing countries where the environment is found more volatile. So, in Pakistan one can also predict high risk premium for small firms that increase their cost of debt. Moreover, information is also more asymmetric for small firms that also make difficult for them to access the debt market at lower cost. So, it is much possible that small firms could not get surpass tax benefits against the high cost of debt. Hence, a second hypothesis of this research will be as follows.

H_2: There is negative relation between debt ratio and firm profitability for small firms.

3. Methodology:

3.1 Data and Sample:

To conclude the proposed theory, 304 non-financial firms listed at KSE are selected for the period of 2005 to 2013. Selected panel data include 2557 number of observations and collected from annual publications of balance sheet analysis of non-financial firms published by State Bank of Pakistan. However, this selection of the sample is made after excluding financial firms, default firms, firms who reported negative equity and firm's observations showed zero sales. Financial sector is excluded because they have difference characteristics especially with respect to their operations. Default firms are also excluded because these firms normally show continuous deteriorating performances due to financial distress. Their inclusion can affect the comparative analysis of debt financing on firm performances. Reason to exclude negative equity observations is due to accumulated losses more than share capital that could mislead the results. Moreover, with zero sales, no activity is performed thatshows no valueto their performances and should not be the part of analysis.

3.2 Model:

To assess the moderating effects of firm size on the leverage-performance relation following fixed effect model is employed. Table 1 shows the detail of variables used in the proposed model. The dependent variable is return on assets (ROA) while independent variables include the debt ratio (DR) and its cross effects with small and large firm size. Since, medium firm size is taken as the reference category, so it's cross effect is not included. Firms are categorized as small, medium and large on the basis of natural log of their sales (ln(Sales)). Firms whose values lie within first quartile of ln(Sales) are considered as small firms. Similarly, firms who lie in fourth quartile are labelled as large firms while remaining second and third quartile are considered as medium size firm. This methodology is consistent with (González & González, 2012) who also categorized firms on the basis of quartiles of ln(sales).

$$ROA_{it} = \alpha + \beta_1 DR_{it} + \beta_2 DR_{it}*Small + \beta_3 DR_{it}*Large + \beta_4 STTA_{it} + \beta_5 CR_{it} + \beta_6 RecTA_{it} + U_t + V_i + \varepsilon_{it}$$

Proposed model also includes three control variables of STTA (sales to total assets), CR (current ratio) and RecTA (receivables to total assets). U_t and V_i represent the unobserved variations due to firm variants and time specific dummy factors. STATA is used to execute proposed models. To check the reliability of results various diagnostics as proposed by Torres-Reyna, (2007) are also employed. It is notable that coefficient of DR ($_1$) will represent the slope of debt ratio for the reference category of medium firms. However, for small and large firms this slope of DR will become ($_1$+ $_2$) and ($_1$+ $_3$) respectively. Here $_2$ and $_3$ will show marginal effects of debt when a firm is small and large respectively as compared to medium size firms. These marginal effects and their slopes will explore that debt financing is optimal decision for small, medium and large firms or not. Consequently, hypotheses of this research could also be testified.

Table 1: Definition of Variables

DependentVariable	ROA	Return on Assets	EBIT / Total Assets
Independent Variable	DR	Debt Ratio	Total Liabilities / Total Assets
Moderating Variables	Small	Small Size Firm Dummy	Equals to 1 if ln(Sales) lies in first quartile and 0 otherwise
	Large	Large Size Firm Dummy	Equals to 1 if ln(sales) lies in fourth quartile and 0 otherwise
Control Variables	STTA	Sales to total assets	Total Sales / Total Assets
	CR	Current Ratio	Current Assets / Current Liabilities
	RecTA	Receivable to Total Assets	Total Receivables / Total Assets

4. Results

4.1 Descriptive Analysis:

Descriptive statistics for the sampled data are presented in Table 2. Data is categorized on the basis of small, medium and large size firms. Descriptive analysis is showing that low size firms earned low profitability of only 3.9% average return on assets (ROA) as compared to 10.4% and 14.1% return on assets of medium and large size firms respectively. Moreover, standard deviation (SD) of ROA for small firms is also showing high variations of 14% even with lower average returns. Thus, it can be concluded that comparatively small firms contain less profits with more variation that is consistent with prior discussion. However, not much difference is found between average debt ratio (DR) of small and large firms, but with more variations for small firms.

Results also show usage of high short term debt (STDR, calculated as the ratio of current liabilities to total assets) regardless the type of firm. One of the reasons behind such over reliance on current liabilities can be attributed to the inefficiencies of capital markets in Pakistan. Capital markets especially bond markets are not developed in Pakistan that confined the financing options to short term instruments generally (Raza, Aslam, & Farooq, 2013). The results also revealed that small firms documented better liquidity (1.560) as compared to medium (1.327) and even large firms (1.494). This can be due to more investment in current assets by small firms as a short term debt ratio for both the categories does not differ significantly. STTA for small firms also showed low statistics and indicates that more investment in working capital is not utilized optimally. Hence, it can be concluded that Small firms contain low and volatile profits, better liquidity and low asset efficiencies as compared to large firms in case of Pakistani non-financial firms.

Table 2: Descriptive Statistics

		ROA	DR	STDR	STTA	CR	RecTA
Mean	*Small*	0.039	0.555	0.409	1.073	1.560	0.096
	Medium	0.104	0.593	0.423	1.253	1.327	0.095
	Large	0.141	0.560	0.416	1.450	1.494	0.110
SD	*Small*	0.140	0.237	0.215	1.928	1.867	0.123
	Medium	0.097	0.191	0.168	0.688	1.062	0.094
	Large	0.124	0.191	0.189	1.041	1.013	0.130
Max	*Small*	1.772	0.996	0.959	21.062	14.600	1.183
	Medium	0.604	1.046	0.956	4.525	9.579	0.565
	Large	0.633	0.999	0.972	7.021	12.229	0.704
Min	*Small*	-1.213	0.006	0.000	0.000	0.077	0.000
	Medium	-0.553	0.063	0.000	0.118	0.169	0.000
	Large	-1.236	0.024	0.024	0.182	0.214	0.000

Source: *Authors' calculation*

4.2 Regression Analysis:

Table 3 provides the results of the proposed model.Since, the data is panel so it is important to decide that whether fixed effect model is appropriate or random effect. We employed hausman test to testify the null hypothesis that estimations of both fixed and random effect models are same. Significant value will show that there are substantial differences to the coefficients estimated by fixed and random effect models and one should select fixed effect model. Table 3 shows that hausman test is significant andconfirms that fixed effect is more appropriate as compared to random effect model. We also employed diagnostics test for fixed model as explained by Torres-Reyna, (2007). To check that whether time dummies are important to include,testparm test is used. Results showed that F-value of testparm test is significant and shows that using time dummies to proposed model is more appropriate.

Since, hausman test is found significant so no need to work with Breusch-Pagan Lagrang Multiplier for random effect model. Another important assumption of fixed effect model is cross sectional dependency of residuals. However, such cross section dependency assumption is important for macro panel (Torres-Reyna, 2007). Panel data used in this research is micro data with less number of years and high numbers of entities. Therefore, cross sectional dependency is not critical. However, still we used pasaran CD test but the results are not calculated due to few number of years across high number of entities. Similarly, another assumption of serial correlation is not critical for micro data (Torres-Reyna, 2007).

At last we also check the assumption of hetroskedasticityby modified Wald test in STATA. It is found that chi^2 is highly significant and reject the null hypothesis that variances are constant. This shows that the problem of hetroskedasticity prevails and can affect t-values of each variable. However, to control this problem we used robust fixed effect model as proposed by (Torres-Reyna, 2007). Similarly, significant Model F-value (44.80) concludes that overall model explains significant variations in dependent variable. So, verification of assumptions and taking appropriate measures accordingly indicates that results obtained will be reliable. Subsequent part will interpret the results obtained from proposed model.

Results revealed that all the variables except one control variable of current ratio provide significant results. Results showed that for medium size firms, one unit change in debt ratio decreases their return on assets by 18.7% (or -0.187) on average. However, for small size firms these losses further decrease by 3% (or -0.030). Consequently, slope of DR in case of small firms will become -0.217 (-0.187-0.030). Low and volatile earnings and more asymmetric information can be the main reason of this negative marginal effect. Ozenbas & Portes, (2011) argued that cost of debt is high for smaller firms who are credit constrained due to asymmetric information. Voulgaris et al., (2004) also argued that asymmetric information make reluctant the lenders to lend but with high cost of debt or with collateral.

Table 3: Size and Leverage-Performance Relation

ROA		**t-value**	**Sig.**	**[95% Conf. Interval]**	
Intercept	0.127***	3.99	0.000	.0642	0.189
DR	-0.187***	-6.400	0.000	-0.244	-0.129
DR*Small	-0.030**	-2.250	0.025	-0.057	-0.004
DR*Large	0.036***	2.590	0.010	0.009	0.064
STTA	0.062***	5.510	0.000	0.040	0.084
RecTA	0.067*	1.800	0.072	-0.006	0.141
CR	0.003	0.530	0.599	-0.007	0.013
Time Dummy	*Yes*			*Hausman*	*93.68****
Industry Dummy	*Yes*			*Testparm F*	*4.22****
Adjusted R^2	*16.4%*			*Modified Wald*	*1.0e+36****
Model F	*21.54****				

*** Significant at 1%, ** Significant at 5% * Significant at 10%

Conversely, marginal effect of large size firms is positive and showed that a unit increase in debt ratio increase their profits by 3.6% as compared to the reference category of medium size firms. In this way, the slope of DR for large size firms will be -0.151 (-0.187+0.036). The positive marginal effect can be due to better access to debt market with less asymmetric information. Thus, in general overall debt financing negatively affects the firms' profits for all three types of firms while such losses are more prominent for small size firms. This negative leverage-performance relation can be explained with pecking order theory that argue to the preference of internal funds. Similarly, Zeitun & Tian, (2007) provides another argument that in developing countries, companies often overleverage themselves to solve agency problems that ultimately decrease their performances. Since, no study till date has defined the optimal level of capital structure. This increases the probability that firms do not get optimal level to gain its maximum benefits with minimal cost of debt and become overleveraged. This later argument appears to be more relevant as agency problem persist in developing countries, especially for larger firms who contain high free cash flows. Moreover, the implication of the pecking order theory can also be negated because of positive marginal effects of larger firms who contain more internal funds. However, if argument of overleverage is accepted then leverage-performance relation will be non-linear where till some level of debt ratio its benefits exceeded its cost while after that level cost of debt surpass its benefits. Table 4 provides the results of fixed effect model with squares of cross effects of DR with three types of firms as proposed in following model. Since, quadratic non-linear leverage-performance relationis expected for small, medium and large firm, their squares are used.

$$ROA = \alpha + \beta_1 \text{DR}_{it}\text{*Small} + \beta_2\,(\text{DR*Small})^2 + \beta_3 \text{DR*Med} + \beta_4(\text{DR*Med})^2 + \beta_5 \text{DR*Large} + \beta_6(\text{DR*Large})^2 + \beta_7\,\text{STTA}_{it} + \beta_8\,\text{CR}_{it} + \beta_9\,\text{RecTA}_{it} + U_t + V_i + \varepsilon_{it}$$

Results revealed that all cross effects of DR are significant except in case of small firms. Insignificant DR*Small accept the null hypothesis that its beta is equal to zero. Conversely, square of cross effect $(\text{DR*Small})^2$ is significant

and negative. Hence, the leverage-performance relation is linear and negative for small firms. It is consistent with the second hypothesis proposed in this research. The reasons behind this can be the volatile and low earnings with asymmetric information that make debt costly financing option for small size firms as argued earlier. Moreover, the implication of the pecking order theory can also be the reason of negative linear relation for small size firms. Results from a descriptive analysis indicates better liquidity position, especially in term of current assets for small size firms. So, it is much possible that small firms rely on their internal funds rather than external debt.

Table 4: Nonlinear Leverage-Performance and Size

		t-value	Sig.	[95% Conf. Interval]	
Intercept	0.031	1.400	0.161	-0.013	0.075
DR*Small	0.100	1.350	0.177	-0.045	0.246
$(DR*Small)^2$	-0.251***	-3.740	0.000	-0.383	-0.120
DR*Med	0.174**	2.530	0.011	0.039	0.309
$(DR*Med)^2$	-0.314***	-5.280	0.000	-0.431	-0.198
DR*Large	0.220***	2.860	0.004	0.069	0.371
$(DR*Large)^2$	-0.332***	-4.430	0.000	-0.479	-0.185
STTA	0.059***	14.880	0.000	0.051	0.066
RecTA	0.065**	2.360	0.019	0.011	0.119
CR	0.009***	3.490	0.000	0.004	0.014
Time Dummy	Yes				
Industry Dummy	Yes				
Adjusted R^2	17.65%				
Model F	39.140***				
Hausman	688.880***				

*** Significant at 1% ** Significant at 5%

However, the leverage-performance relation is found non-linear for medium and large size firms. Results showed that cross effects of DR with medium and large size firms are positive while their squares are negative. These results are also significant. This proves that initially leverage-performance relation is positive for medium and large size firms, while after a particular debt level it becomes negative. More specifically initially with unit increase in DR, ROA of medium and large firms increase by 0.174 and 0.220 respectively. However, after a particular debt ratio unit increase in DR decreases the ROA of medium and large firms by -0.314 and -0.332 respectively. That particular debt level is the optimal debt ratio where profits are maximized.So, the first hypothesis is partially accepted as for larger firms leverage-performance relation is found positive but to a particular debt level.

From the process of optimization one can find that optimal debt ratio. Following process shows the step inthe optimization process. Taking the derivative of the proposed model with respect to DR following results are found.

$$\frac{\Delta \text{ROA}}{\Delta \text{DR}} = \beta_1 \text{Small} + 2\,\beta_2 \text{DR (Small)}^2 + \beta_3 \text{Med} + 2\,\beta_4 \text{DR(Med)}^2 + \beta_5 \text{Large} + 2\,\beta_6 \text{DR(Large)}^2$$

Since, at optimal level *f'* (ROA) will be zero, so following equation is extracted for DR where return on assets is at its optimal value

$$DR = \frac{-\beta_1\,\text{Small} - \beta_3\,\text{Med} - \beta_5\,\text{Large}}{2\,\beta_2\,(\text{Small})^2 + 2\,\beta_4(\text{Med})^2 + 2\,\beta_6(\text{Large})^2}$$

By using table 4 optimal level for small firms will be

$$DR = \frac{-\beta_1}{2\,\beta_2} = \frac{0}{-0.251} = 0 \rightarrow \textit{Relation is linear and no optimal level}$$

For medium size optimal level will be

$$DR = \frac{-\beta_3}{2\,\beta_4} = \frac{-\,0.174}{2\,(-0.314)} = 0.2771\ or\ 27.71\%$$

For large firms, optimal level will be

$$DR = \frac{-\beta_5}{2\,\beta_6} = \frac{-\,0.220}{2\,(-0.332)} = 0.3313\ or\ 33.13\%$$

Thus, for medium size firms their ROA will increase with increase in DR till its value reaches to 0.2771 while after this level of DR profits start decreasing. This implies that Pakistani medium size non-financial firms should target 0.2771 of debt ratio on average to maximize their value.However, in practice average debt ratio for medium size firms is 0.593 as found in table 2 of descriptive statistics.Similarly, for large size firms desired debt ratio is 0.3313 while in practice their average debt ratio is 0.560 as found in table 2. So, in general large firms are also far away from their optimal level. This indicates that on average medium and large firms are over-leveraged that can

be the reason of the overall negative relation found in table 3.

These results also reveal an important implication of the trade-off theory. Results showed that the optimal debt ratio for medium firm is 27.71%, while for large firms this ratio is 33.31%. This proves that optimal level of DR changes for different types of firms. Therefore, the modified trade-off theory is proposed that targeted optimal level under the trade-off theory is not a general value, but could depend on firm specific moderators such as firm size.So, this section provides four important implications. 1) Leverage-performance relation is negative and linear for small firms 2) Leverage-performance relation is non-linear for medium and large size firms 3) In practice medium and larger firms are not following optimal level and over-leveraging that decrease their profits 4) Optimal debt ratio is not a generalized value and depend on firm specific moderations.

5. Conclusion

Present study explored leverage-performance relation while comparing small, medium and large Pakistani non-financial firms. It is found that debt borrowings by small firms affect their profits most severely while for large size firms this adverse effect is found minimum. It is argued that small firms contain more asymmetric information with low and volatile returns that make debt borrowings more costly. Conversely, large firms have better access to the debt market with less asymmetric information so they deploy debt with less cost comparatively. Results also showed that though the marginal effectof large firms is found positive, but still overall slope of debt ratio showed negative results. It is argued that firms overleveraged themselves in pursue of optimal level that decrease their overall profits. Moreover, a leverage-performance relation is also found nonlinear for medium and large firms, while for small firms it is linear and negative. Therefore, debt financing will always affect negatively the value of small size firms. However, for medium and large size firms initially it will affect positively to a certain level while after that,s their profits start decreasing.Results showed that debt financing increases medium firms' profits till the debt ratio reach to 0.2771 while after this profits start decreasing. Similar results are found in case of large size firms, but with optimal level of 0.3313. However, descriptive statistics explored that in real practice medium and large size firms showed an average debt ratio of 0.59 and 0.56 respectively. Thus, both large and medium are not targeting optimal level and overleveraging themselves. So, the outcome of this study has strong practical implications as it will help financial managers in choosing appropriate financing decisions for different types of firms in developing countries like Pakistan. Financial managers of small firms should avoid debt borrowings. However, in case of medium and large size firms optimal targeted debt ratio should be followed to avoid overleveraging problem.

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