The Impact of Ownership Structure on Corporate Debt Financing: Evidence from the Manufacturing Sector of Pakistan

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ABSTRACT

This study investigates the impact of ownership structure on corporate debt financing in Pakistan. We apply panel data analysis on 183 manufacturing firms with 1098 firm-year observations. Results of the analysis indicate that insider ownership is negatively related to total debt ratio, which explains that the owners with substantial control of the firms may decrease debt to maintain their ownership stakes and to reduce the risk of insolvency. Institutional ownership is negatively related to total and short-term debt ratio, which confirms the external monitoring effect. We also find that both profitability and firm size are negatively associated with leverage. The results show quite good congruence with pecking order theory. However, tangibility shows a significant positive relation to long-term debt ratio. The results give important insights into ownership and debt relationship, which might be significant for managers and policy makers for the improvement of corporate governance mechanisms in Pakistan.

Keywords: Debt financing, insider ownership, institutional ownership, ownership structure, Pakistan

INTRODUCTION

Capital structure is perhaps a firm's most fundamental financial decision which involves in depth and careful considerations. Financing with debt is cheaper as compared to equity due to tax advantages. Therefore, lower level of debt can significantly limit profitability. On the other hand, too much debt can cause insolvency even for stable and large firms. Accordingly, firms try to find an optimal level of debt that may maximize their profit and minimize the probability of insolvency. An optimal mix of capital structure and its impact on the firm performance and the firm value are extensively researched topics in financial theory (Titman & Wessels, 1988; Myers, 1984; Jensen & Meckling, 1976).

The seminal paper of Modigliani and Miller (1958) started a serious debate and their theory of capital structure irrelevance became an important topic for discussion. A number of hypotheses, theories, and models have gained prominence either in support of (e.g., Luigi & Sorin, 2009) or against (e.g., Jensen & Meckling, 1976) the theory of irrelevance. Static and dynamic trade-off models, pecking order theory, market timing theory, and agency theory are some of them. There has been a great deal of empirical work to test these theories/models. Most of the empirical work is regarding the determinants of the corporate capital structure. However, corporate governance has also been a popular topic of research over the last few decades and its importance has been increased manifold after several high profile scandals in some of the largest and most prominent organizations in the world. Ownership structure is considered as one of the important aspects of corporate governance. Most of the empirical work regarding the role of ownership structure has been conducted using data in developed and emerging countries. Empirical work regarding the role of ownership structure to determine leverage behavior is rare in Pakistan.

Previous research conducted in Pakistan focuses mostly on determinants of corporate capital structure at aggregate/industry level (Qureshi, Sheikh, & Khan, 2015; Sheikh & Wang, 2011; Qureshi, Imdadullah, & Ahsan, 2012) and mean reversion property of capital structure (Ahsan, Wang, & Qureshi, 2016). Qureshi & Azid (2006) focused on capital structure of public & private firms, and found out that public firms have higher debt levels as compared to private firms. Butt and Hasan (2009) find that managerial ownership is negatively related to debt ratio based on a small sample of firms. So, there has not been significant amount of research regarding ownership structure of firms in Pakistan. And the existing research is mostly based on small samples or targets certain sectors (Butt & Hasan, 2009; Qureshi et al., 2012). Thus, a gap in the literature in terms of studies focusing on the relationship between ownership structure and leverage has evoked the need for this empirical investigation. This study aims to investigate the impact of ownership structure of Pakistani firms on their leverage behavior, based on panel data from a relatively larger sample of 183 firms, with 1098 firm-year observations. This study is also important at this time because Pakistani market is at an important stage of growth, undergoing modernization and attracting more foreign investments. Thus a change in the ownership pattern of firms in major industries is highly likely. Keeping this in view, a study focusing on the impact of changes in ownership structure on the financing behaviors will be a very useful contribution.

We use fixed effects estimation procedure to analyze a panel data of 183 listed firms in the Karachi Stock Exchange (KSE)[1] during the period of 2009 to 2014. The results of this study indicate that insider ownership is negatively related to the total debt ratio, confirming the fact that owners with substantial control may decrease debt as a proportion of equity to maintain their ownership stakes and to reduce the risk of insolvency. Institutional ownership is also negatively related to total debt ratio and short-term debt ratio, confirming the external monitoring effect. The study gives valuable insights regarding the preferences of institutional and insider owners about the use of debt financing. The rest of this paper is organized as follows: Section 2 gives a review of the literature on capital structure and ownership structure; section 3 provides a description of data, variables, and methodology used in the paper; section 4 presents the results of statistical analysis; and section 5 includes the discussion on the results and managerial implications.

LITERATURE REVIEW AND HYPOTHESES

There has been a great deal of debate on the capital structure since the presentation of the capital structure irrelevance theory (Modigliani & Miller, 1958). The theory assumes that financing choices do not affect investment decisions when the capital market is perfect. Modigliani and Miller (1958) identify the importance of certain market imperfections such as bankruptcy costs, agency conflicts, and taxes. They also investigate the impact of the imperfections on the determination of optimal capital structure. A popular argument in favor of the theory of irrelevance is that it gives direction on how to find the reasons for why financing is important, although this theory does not give a realistic depiction of how the firms finance their operations (Luigi & Sorin, 2009).

There are some fundamental differences between equity and debt financing due to the costs and benefits associated with both of these in the real world (Graham, 2000). The trade-off model indicates that the decision of the portion of debt and equity in the capital structure depends upon balancing of the costs and benefits that these two entail. Firms have to consider the trade-offs between the advantages of having more debt in the capital structure and the costs of additional levels of debt. It is expected that the firms strive for a targeted leverage and carry out the marginal financing relative to this target, although they have to schedule their transactions to minimize the costs of adjustments (Mjos, 2007).

On the other hand, the pecking order theory argues that firms use a certain preferential order in their financing choices. First priority is internal funds, then debt, and finally the equity. The reason for these preferences is that the outside equity is generally expensive as compared to internal funds, and the equity is even more expensive than debt due to the information asymmetry between a firm and its outside investors pertaining to the value of its present projects and the future ventures. Myers (1984) organizes these findings and introduces the pecking order theory of financing. The theory concludes that the presence of discrepancies of information between managers and shareholders compels firms to use internal funds. The retained earnings or funds from existing owners are considered the first choice of financing, then the risk-free debt and risky debt, prior to finally choosing the new

[1] Karachi Stock Exchange has been merged with the other two stock exchanges of Pakistan to form the Pakistan Stock Exchange.

equity issued to the outside investors. The firms attempt to minimize marginal costs of the information asymmetry using the pecking order theory (Luigi & Sorin, 2009).

There has been considerable research in Pakistan regarding capital structure, focusing mostly on determinants of corporate capital structure but the ownership structure hasn't been given much emphasis. Qureshi et al. (2015) tested the Trade-off Theory and the Pecking Order Theory in Pakistani context and also highlighted the effects of some firm-specific factors on leverage in different industries. Sheikh & Wang (2011) explored the determinants of capital structure in Pakistan and found support for Pecking Order and Trade-off theories through different proxies. Qureshi et al. 2012 studied the determinants of leverage in the chemical sector of Pakistan and concluded that most of the chemical sector firms of Pakistan, having foreign ownership/collaboration, used a mix of local and international strategies for their leverage formation in Pakistan. Ahsan et al. 2016 explored mean reversion property of capital structure and observed that most of the industries did have target leverage ratios and also that profitable firms followed trade-off financing behavior while the lossmaking firms did not. Qureshi & Azid (2006) focused on capital structure of public & private firms, and found out that public firms have higher debt levels as compared to private firms. Butt and Hasan (2009) conducted a small sample based study and found a negative relation between managerial ownership and debt ratio.

A number of studies have previously highlighted the various factors that can affect the mix of capital structure (e.g., Said, 2013; Chung, 2012). The studies have also highlighted the role of ownership structure to determine leverage behavior of the firms (Wansley, Collins, & Dutta, 1995).

Insider ownership

Inside owners have a stake in an organization and care deeply for survival of the organization. They can either keep a lower level of debt to avoid bankruptcy, or increase the level of debt to get benefits of cheaper financing. Grossman & Hart (1986) state that a positive relationship may exist between insider ownership and leverage if high leverage serves as a bond, which may force managers to achieve greater cash flows for covering interest payments. Bathala, Moon, and Rao (1994) find a negative relation between insider ownership and leverage. They use a simultaneous system of insider ownership and leverage in which the institutional ownership is also added as an independent variable.

The prior studies have reported mixed results about the nature of the relationship between debt and insider ownership. In terms of the ownership structure, Pakistani firms may differ from the firms in developed countries as most of these firms are still family owned businesses, meaning a higher proportion of insider ownership in the total outstanding shares. Therefore, the relationship of debt and insider ownership is also expected to be a bit different. Owing to the high levels of uncertainty in the market, and to the largely conservative and risk aversive behavior of firm owners (mostly family owners) in Pakistan whereby they might avoid having higher levels of debt, a negative relationship is expected between insider ownership and leverage.

We form the following hypotheses:

Hypothesis 1a: Total debt has a negative relation with insider ownership.
Hypothesis 1b: Long-term debt ratio has a negative relation with insider ownership.
Hypothesis 1c: Short-term debt ratio has a negative relation with insider ownership.

Institutional ownership

In mitigating agency costs, institutional ownership substitutes the role of insider ownership as the institutional owners monitor the organizational performance just like the creditors and inside owners. Several studies have examined the monitoring role of the institutional ownership for large firms. Brous and Kini (1994) find that firms seem to be monitored by institutions at the time of issuance of equity. Agrawal and Mandelker (1990) state that institutions play a monitoring role at the time of the introduction of anti-takeover charter amendments. Bathala et al. (1994) include the institutional ownership as an independent variable in a simultaneous model of insider ownership and leverage. They indicate that the institutional ownership plays the role of a substitute for insider ownership and leverage. Joher et al. (2006) find a negative relationship between institutional ownership and managerial equity holdings, confirming that institutional investors play an effective role in mitigating agency costs, based on a data sample from Kuala Lumpur Stock Exchange, Indonesia.

Qiang (2007) finds a positive relation of percentage of institutional ownership with debt ratio. He also notices a negative relation of capital structure with the decentralized degree of institutional ownership, which means that the higher decentralization of institutional ownership results in lower debt ratio. Chung (2012) indicates that a simultaneous relationship exists between institutional ownership and leverage of a firm. He finds that the lower the debt level, the higher the level of institutional ownership, implying that a firm uses low leverage when the institutional ownership takes up the monitoring role of the external debt. Said (2013) also confirmed this relationship in a dynamic framework. Again, mixed results are reported regarding the relationship between debt ratio and institutional ownership.

Institutional ownership has a lower proportion in the total outstanding shares in most of local firms in Pakistan. And keeping in view the same reasons stated above for insider ownership, a negative relationship between institutional ownership and leverage is expected. We form the following hypotheses:

Hypothesis 2a: Total debt has a negative relation with institutional ownership.
Hypothesis 2b: Long-term debt has a negative relation with institutional ownership.
Hypothesis 2c: Short-term debt has a negative relation with institutional ownership.

Control Variables

Prior studies on capital structure have examined different firm level variables which can affect the leverage behavior of the firms. On the basis of the previous studies, we include the following control variables in this study:

Profitability*:* The pecking order theory asserts that there is a negative relationship between profitability and debt as the firms give preference to internal financing over external debt. On the other hand, more profitable firms being seen as less risky can raise

debt at lower interest rates. Therefore, the trade-off theory asserts a positive relationship between profitability and debt. Further, agency theory also confirms the positive relation between profitability and debt due to the open cash flows. However, this positive relation is rarely confirmed by empirical evidence. Most of the empirical research endorses the negative relation between profitability and leverage (e.g., Titman & Wessels, 1988; Harris & Raviv 1991; Rajan & Zingales 1995; Wald 1999; Booth, Aivazian, Kunt, & Maksimovic, 2001.)

Firm size*:* In general, firm size has a positive relation with leverage. It acts as an inverse proxy for the possibility of liquidation. Larger firms are often highly diversified with higher stability in their cash flows. Therefore, they have relatively less possibility of insolvency and may raise debt easily. Most studies have confirmed this positive relationship (e.g., Titman & Wessels, 1988; Wald, 1999). Some studies also propose that long-term debt is preferred over short-term debt by the larger firms, and smaller firms prefer short-term debt. Due to higher bargaining power and larger scale of economies, the larger firms have to suffer lower servicing costs associated with issuance of debt and equity (Michaels, Chittenden, & Poutziouris, 1999).

Tangibility: The theoretical evidence indicates that the tangibility has a positive relationship with leverage. The availability of a larger amount of tangible assets helps firms in acquiring debt at lower interest rates because these assets serve as collateral for external debt. The majority of empirical studies in developed countries report a positive relationship between tangibility and debt ratios (Titman & Wessels, 1988; Rajan & Zingales, 1995). In this regard, studies in developing countries report mixed results (e.g., Titman & Wessels, 1988). They find that relationship between the tangibility and debt ratio is positive in case of long-term debt and negative in case of the short-term debt.

Non-debt tax shield*:* This shield has also been a frequently studied determinant of leverage. Theories suggest negative relationship between non-debt tax shield and leverage as it works as a substitute for tax shield. Kolay, Schallheim, and Wells (2011) find that a significant negative relationship exists between non-debt tax shield and leverage. Bradley, Jarrell, and Kim (1984) adopt non-debt tax shield as the total of depreciation charges and investment tax credit. They discover a significant positive relationship between debt and the relative amount of non-debt tax shield. Myers (1977) claims that these two activities (i.e., depreciation charges and investment tax credit) resulted in the formation of assets that could be seen as causing growth opportunities, which in turn enhanced the agency costs of debt.

Uniqueness: Different proxies have been used for uniqueness in various studies. Research and Development (R & D) is perhaps the most common one. Unique assets are assumed to have less collateral value, and hence they can support smaller levels of debt (Fosberg, 2008). Bradley et al. (1984) note a negative relationship between uniqueness and leverage. Unique products incur higher R&D and selling expenses. Manufacturers of unique products also have to face a greater risk of insolvency. Therefore, they should be vigilant about avoiding induced insolvency expense by issuing more debt. As per the trade-off theory, firms producing unique products have less debt in their capital structure.

The studies on the determinants of capital structure or debt structure have reported mixed results pertaining to different variables tested. Most of these prominent studies have

been conducted in large and developed economies. The results may be different in smaller and developing economies because the organizational and economic dynamics in these economies could be quite different from the large developed and emerging economies. We attempt to investigate whether the ownership structure is a significant determinant of corporate debt structure in listed Pakistani manufacturing firms.

DATA, VARIABLES, AND METHODOLOGY

We selected data from the annual reports of Pakistani manufacturing firms listed on Karachi Stock Exchange (KSE) during the period of 2009 to 2014. There are 431 manufacturing firms listed on KSE (2014 stats). Most of the firms do not have available annual reports, or some key data are missing from their annual reports. The final sample consisted of 183 firms with a total of 1098 firm-year observations.

Following a previous study in Pakistan (Ahsan et al., 2016), we use debt as a dependent variable. Three proxies, Total Debt Ratio *(TDR_{it})*, Long-term Debt Ratio *($LTDR_{it}$)*, and Short-term Debt Ratio *($STDR_{it}$)*, have been taken for the debt. There are seven independent variables: Insider Ownership *($INSDR_{it}$)*, Institutional Shareholdings (*$INST_{it}$)*, Firm Size *($SIZE_{it}$)*, Tangibility *($TANG_{it}$)*, Profitability *(ROA_{it})*, Uniqueness *($UNIQ_{it}$)*, and Non-debt Tax Shield *($NDTS_{it}$)*.

Two variables, *insider ownership* and *institutional shareholding*, represent ownership structure. The *insider ownership* is the percentage of shares owned by insiders (managers, directors, and executives) to total outstanding shares. The *institutional shareholding* is the percentage of shares owned by institutions (both financial and non-financial) to total outstanding shares (Crutchley, Jensen, Jahera, & Raymond 1999; Bathala et al., 1994). *Profitability* represents the ratio of profit before interest and taxes to total assets (Lim, Chai, Zhao, & Lim, 2012; Titman & Wessels, 1988). *Firm size* is measured by the natural log of sales. *Tangibility* (or asset structure) represents the ratio of fixed assets plus inventory (collateralizable assets) to total assets. *Non-debt tax shield* is measured as the ratio of depreciation expense to total assets. *Uniqueness* is defined as the ratio of advertising plus research and development expenses to net sales (Bathala et al., 1994; Titman & Wessels, 1988). The basic regression equation is expressed as:

$$y_{it} = \alpha + \beta X_{it} + u_{it} \quad (1)$$
$$i = 1 \rightarrow 183;$$
$$t = 1 \rightarrow 6$$

Where *i* stands for the *i*th cross-sectional unit and *t* stands for the *t*th time period, y_{it} is the debt measure for the *i*th firm at time *t*, and α is the intercept. X_{it} is a 1 x *K* vector of observations on *K* explanatory variables for the *i*th firm in the *t*th period, β is a *K* x 1 vector of parameters, u_{it} is a disturbance term and is defined as:

$$u_{it} = \mu_{it} + v_{it} \quad (2)$$

Where u_{it} denotes the unobservable individual effects and v_{it} denotes the remainder disturbances. Correspondingly the regression equations can be expressed as:

$$TDR_{it} = \beta_0 + \beta_1 INSDR_{it} + \beta_2 INST_{it} + \beta_3 ROA_{it} + \beta_4 SIZE_{it} + \beta_5 TANG_{it} + \beta_7 NDTS_{it} + \beta_6 UNIQ_{it} + \varepsilon_{it} \quad (3)$$

$$LTDR_{it} = \beta_0 + \beta_1 INSDR_{it} + \beta_2 INST_{it} + \beta_3 ROA_{it} + \beta_4 SIZE_{it} + \beta_5 TANG_{it} + \beta_7 NDTS_{it} + \beta_6 UNIQ_{it} + \varepsilon_{it} \quad (4)$$

$$STDR_{it} = \beta_0 + \beta_1 INSDR_{it} + \beta_2 INST_{it} + \beta_3 ROA_{it} + \beta_4 SIZE_{it} + \beta_5 TANG_{it} + \beta_7 NDTS_{it} + \beta_6 UNIQ_{it} + \varepsilon_{it} \quad (5)$$

Where

TDR_{it} is the total debt ratio for the *i*th firm at time *t*.
$LTDR_{it}$ is the long-term debt ratio for the *i*th firm at time *t.*
$STDR_{it}$ is the short-term debt ratio for the *i*th term at time *t.*
$INSDR_{it}$ is the insider ownership of the *i*th firm at time *t*.
$INST_{it}$ is the institutional shareholding of the *i*th firm at time *t*.
ROA_{it} is the profitability of the *i*th firm at time *t*.
$SIZE_{it}$ is the size of *i*th firm at time *t*.
$TANG_{it}$ is the tangibility of the *i*th firm at time *t*.
$UNIQ_{it}$ is the uniqueness of the *i*th firm at time *t*.
$NDTS_{it}$ is the non-debt tax shield of the *i*th firm at time *t*.
β_0 is the intercept, ε_{it} is the random error term for the *i*th firm at time *t*. β_1 to β_7 are the coefficients of the concerned variables.

We used the Stata-13 software package for analysis. We winsorized the data, to get rid of outliers - 5 extreme values on both sides. We calculated the Variance Inflation Factor (VIF) to check for multicollinearity. In calculating beta coefficients, we used fixed effects estimation technique for all the three measures of debt as the dependent variables. The decision was based on the results of the Hausman test for fixed and random models. We used fixed effects technique since the null hypothesis (difference in coefficients and not systematic) of the test is rejected. The betas are BLUE (best linear unbiased efficient) because we control for the issues of heteroskedasticity and autocorrelation through Modified Wald test for group-wise heteroskedasticity and Wooldridge test for autocorrelation in panel data respectively. We also controlled for the time effects on the relationships by using the Joint Test of Significance for dummy variables of all years, and we found that the time factor was not significant.

RESULTS AND DISCUSSION

Table 1 (next page) shows the descriptive statistics for all the dependent and independent variables. It reflects the average indicators of selected variables computed from the annual reports. The statistics includes the standard deviation, minimum, and maximum values for the selected variables along with the number of observations for each variable.

The average Total Debt Ratio (TDR) of the selected companies is about 60% with a standard deviation of 35%. There is considerable deviation in its minimum and maximum values. The table indicates that the portion of Short-term Debt in Total Debt (STDR) is greater than that of the Long-term Debt (LTDR). The mean of short-term debt ratio is 41% as compared to 18% of the long-term debt ratio. Average Insider Shareholding ratio is almost 25% and Institutional Shareholding ratio is 41%, indicating that a greater proportion

of outstanding shares are owned by institutions. Mean Profitability, indicated by ROA, is 7% with a standard deviation of about 14%, indicating a considerable deviation, also shown by a minimum value of 49% in negative (loss) and maximum value of almost 60% in positive (profit).

Table 1: Descriptive Statistics

Variables	Mean	Minimum	Maximum	Std. Deviation	Observations
TDR	0.5985	0.0766	3.0119	0.3574	1098
LTDR	0.1804	0.0000	1.4702	0.2049	1098
STDR	0.4177	0.0200	1.8118	0.2710	1098
INSDR	0.2493	0.0000	0.9644	0.2726	1098
INST	0.4119	0.0000	0.9908	0.3067	1098
ROA	0.0714	-0.4893	0.5275	0.1364	1098
SIZE	15.3943	8.2298	20.4259	1.6888	1098
TANG	0.7617	0.1947	0.9942	0.1722	1098
NDTS	0.0329	0.0005	0.0918	0.0177	1098
UNIQ	0.0093	0.0000	0.1293	0.0231	1098

Mean Tangibility of 76% (ratio of fixed assets plus inventory to total assets) indicates that the proportion of tangible assets is considerably greater than that of current assets in the total assets.

Table 2 (next page) presents the degree of correlation among the explanatory variables. The correlation matrix contains the values for the Variance Inflation Factor (VIF). Values of VIF for all the control variables are less than 2, indicating that there is no issue of multicollinearity. Total debt ratio is positively correlated to long-term debt ratio, short-term debt ratio, tangibility, and non-debt tax shield. All of these correlations are highly significant. Total debt ratio is negatively correlated with institutional shareholding, firm size, and profitability. These correlations are also highly significant. Total debt ratio is positively correlated to insider ownership, which is insignificant and negatively correlated to uniqueness (i.e. advertising and R&D expenditures).

Long-term debt ratio has highly significant positive correlation with short-term debt ratio, insider ownership, tangibility, and non-debt tax shield. The LTDR has negative and highly significant correlation with institutional ownership, firm size, uniqueness, and profitability. Short-term debt has positive and highly significant correlation with non-debt tax shield. The STDR has negative and highly significant correlation with insider ownership, institutional ownership, tangibility, profitability, and firm size. The STDR also has positive and significant correlation with uniqueness.

Table 2: Correlation Matrix

	TDR	LTDR	STDR	INSDR	INST	SIZE	TANG	NDTS	UNIQ	ROA	VIF
TDR	1.000										
LTDR	0.648***	1.000									
STDR	0.823***	0.110***	1.000								
INSDR	-0.003	0.142***	-0.112***	1.000							1.91
INST	-0.114***	-0.108***	-0.067**	-0.650***	1.000						1.75
SIZE	-0.169***	-0.211***	-0.054*	-0.246***	0.187***	1.000					1.30
TANG	0.127***	0.348***	-0.094***	0.325***	-0.205***	-0.236***	1.000				1.17
NDTS	0.207***	0.228***	0.095***	0.081***	-0.139***	-0.126***	0.269***	1.000			1.16
UNIQ	-0.061**	-0.173***	0.051*	-0.094***	0.035	-0.073**	-0.037	-0.025	1.000		1.11
ROA	-0.397***	-0.245***	-0.338***	-0.096***	0.083***	0.260***	-0.293***	-0.131***	0.099***	1.000	1.04

Note: The symbols *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Insider ownership has highly significant and negative correlation with institutional ownership, firm size, profitability, and uniqueness. Insider ownership has positive and highly significant correlation with tangibility and non-debt tax shield. Institutional ownership has highly significant positive correlation with firm size and profitability and highly significant negative correlation with tangibility and non-debt tax shield. Institutional ownership has positive but insignificant correlation with uniqueness. Firm size has highly significant and negative correlation with tangibility, non-debt tax shield, and uniqueness. The firm size has significant and positive correlation with profitability. Tangibility has highly significant and negative correlation with profitability and highly significant and positive correlation with non-debt tax shield. Tangibility has negative but insignificant correlation with uniqueness. Non-debt tax shield has negative and highly significant correlation with profitability, and positive but insignificant correlation with uniqueness. Uniqueness has positive and highly significant correlation with profitability.

We use the fixed effects estimation technique to analyze the impact of independent variables (i.e., insider ownership and institutional ownership) and control variables (i.e., profitability, firm size, tangibility, non-debt tax shield, and uniqueness) on the leverage of the firms. The results were obtained in three steps, taking total debt ratio, long-term debt ratio, and short-term debt ratio as the dependent variables one at a time. Table 3 (next page) presents the estimation results of the regressions.

Total Debt Ratio (TDR)

We observe and control for time fixed effect in the regression analysis. The results indicate that insider ownership has a significant negative relationship with the total debt ratio, which supports hypothesis 1a. It suggests that the level of total debt decreases as shareholding of insiders (i.e. the directors, executives and managers) increases, indicating the decreasing tendency of using debt as a financing tool. It is consistent with the earlier theoretical considerations whereby insiders tend to decrease the external debt with increase in the level of their shares in the firm. The institutional ownership also has a significant negative relationship with the total debt ratio and therefore hypothesis 2a is supported.

Profitability has a significant negative relationship with total debt ratio, which means that as the profitability of a firm increases, the firm tends to lower the levels of external debt, which supports the pecking order theory. Firm size (SIZE) has a significant negative relationship with total debt ratio, which does not confirm earlier findings that larger firms (with larger amounts of sales) can afford to have higher levels of debt.

Tangibility has a positive but insignificant relation with total debt ratio. Non-debt tax shield also has a positive but insignificant relation with the total debt ratio. Uniqueness, which is the combination of advertisement and research and development expenditures in relation to net sales, has a negative but insignificant impact on the total debt ratio.

Long-term Debt Ratio (LTDR)

In the case of long-term debt ratio as a dependent variable, time fixed effect is not significant. The results are quite different from the first model with the total-debt ratio as a dependent variable. Insider ownership shows an insignificant negative relation with the long-term debt. Therefore, Hypothesis 1b is not supported.

Table 3: Regression Results

	TDR			LTDR			STDR		
	Coef.	t-Stat.	Prob.	Coef.	t-stat.	Prob.	Coef.	t-stat.	Prob.
INSDR	-0.1322	-2.25	0.026	-0.0106	-0.24	0.810	-0.1168	-1.35	0.178
INST	-0.0593	-2.08	0.039	-0.0122	-0.51	0.608	-0.0565	-2.01	0.046
ROA	-0.3971	-5.16	0.000	-0.0054	-0.08	0.940	-0.3445	-4.45	0.000
SIZE	-0.0400	-2.24	0.026	-0.0089	-0.57	0.570	-0.0210	-1.22	0.222
TANG	0.0872	0.88	0.381	0.1771	2.86	0.005	-0.0864	-0.88	0.380
NDTS	0.2318	0.43	0.669	0.0837	0.20	0.843	0.0219	0.05	0.964
UNIQ	-0.8360	-1.37	0.171	-0.2270	-0.43	0.668	-0.3798	-0.65	0.516
_cons	1.2325	4.15	0.000	0.0257	0.31	0.758	0.8664	0.31	0.005
F stat.	9.25			4.91			4.09		
Prob > F	0.0000			0.0000			0.0000		
Obs	1082			1082			1082		
Firms	183			183			183		
R-sq	0.1357			0.1579			0.1232		

Notes: The table presents the combined estimation results for the three models.
The results were originally obtained one by one, separate from each other, and combined here for convenience.

Institutional ownership has a negative and insignificant relation with long-term debt. Therefore, Hypothesis 2b is not supported. Profitability and firm size have a negative and insignificant relation with the long-term debt. Tangibility has a highly significant positive relation with long-term debt ratio. Non-debt tax shield has an insignificant and positive relationship with the long-term debt, whereas, uniqueness has an insignificant negative relationship with long-term debt ratio. We conclude that level of long-term debt tends to increase with the increase in size of tangible assets.

Short-term Debt Ratio (STDR)

In case of short-term debt ratio as a dependent variable, the time fixed effect is not significant. Both insider ownership and institutional ownership show negative relationship with the short-term debt. However, the relationship is insignificant in the case of insider ownership. Therefore, Hypothesis 1c is not supported and Hypothesis 2c is supported. Profitability has a significant negative relationship with the short-term debt, indicating that the level of short-term debt is lower in firms with higher levels of profitability. Firm size shows a negative relationship with the short-term debt ratio which means that larger firms tend to have a smaller proportion of short-term debt in the total debt. However, the relationship is insignificant. Both tangibility and uniqueness show insignificant and negative relationships with short-term debt. Non-debt tax shield has an insignificant positive relationship with short-term debt.

As table 3 indicates, the R-sq values for TDR, LTDR and STDR are 13.6%, 15.8% and 12.3% respectively. These values may be comparatively lower for the goodness of fit of regression, but the statistically significant coefficients still enable us to draw important conclusions about the relationship between dependent and independent variables. Further, a number of similar studies conducted previously have the similar levels of goodness of fit, which can be attributed to the data characteristics and the presence of large number of variables that can possible affect the dependent variables, e.g. Fama & French (2002), Kolay et al. (2011), Said (2013), Rajan & Zingales (1995), Qiang (2007), Agrawal & Mandelker (1990).

From the results of estimation with all the three proxies, we can infer that short-term debt is the dominating factor in the total debt in comparison with the long-term debt. The short-term estimations are more in accordance with those of the total debt in terms of significance of relationship. The short-term debt is greater in proportion to long-term debt in the total debt (also indicated by the higher mean value of short-term debt). Firms prefer to use short-term debt over long-term debt. This may be due to the high levels of uncertainty in the corporate sector, capital market, and economy.

The negative relationship between insider ownership and debt ratio indicates that the level of debt decreases with increase in the percentage of shares owned by insiders (i.e. directors, executives, and managers) in an organization (Jensen & Meckling, 1976). In other words, the inside owners of the organization prefer a lower level of debt in order to maintain their ownership stakes in the organization and reduce the level of risk. Their preference is consistent with one premise of the pecking order theory whereby internal funds (i.e. retained earnings) are preferred over debt. Thus, the interests of managers and shareholders are aligned according to the external monitoring effect. Both internal and external shareholders tend to share the value saved through lowering of debt.

The negative relationship between insider ownership and debt ratio is against the entrenchment effect. As noted by (Brailsford, Oliver, & Pua, 1999), higher levels of managerial ownership may cause entrenchment effect which offsets the monitoring effect of external ownership. These results are also confirmed by Wansley, Collins, and Dutta

(1995). In the case of Pakistan, a reason for existence of the negative relationship between total debt ratio and insider ownership may be because a lot of these firms are family-owned companies. Most of the shares are owned by family members and relatives, who also hold key management positions in the companies, especially in the textile and sugar sectors, which are major manufacturing sectors in Pakistan. Most inside owners still prefer to run companies in the traditional way, keeping the debt levels as low as possible to minimize the risk of insolvency.

Institutional ownership is negatively associated with leverage, which confirms the general belief that institutional shareholders may perform the disciplinary role in organizational performance which is otherwise performed by the debt. This is so because of greater incentives for institutional investors to monitor the corporate performance (Said, 2013). Profitability is negatively associated with leverage, which means that firms with relatively high internal funds in the form of profits usually tend to avoid leverage. The pecking order theory predicts that more profitable firms will have less leverage because they prefer internal financing over external financing, as discussed by Fama and French (2002). It is inconsistent with some dynamic versions of the trade-off theory according to which profitable firms have higher book leverage. However, it is well established by previous theoretical and empirical literature that leverage is negatively related to corporate profits (Titman & Wessels, 1988; Harris & Raviv, 1991).

Firm size has a significant negative association with total debt ratio, which is contrary to general belief and findings of most previous studies. This may be because of the distinctive features of the economic environment in developing economies and of the organizations operating in these economies. One possible reason is that larger firms usually earn more profits than a lot of smaller firms. Therefore, the larger firms prefer to use internal funds, rather than expensive external debt. Still this finding is contrary to most of the previous studies on the subject. Frank and Goyal (2003) observe a negative relation between firm size and leverage using two different proxies for firm size, log of sales and log of assets. They state that bearing more assets signifies lower debt level for a firm with a certain level of sales.

Short-term debt ratio has a highly significant and positive relation with tangibility. From the trade-off perspective, a firm with more tangible assets can pledge them in support of debt. Under the pecking order theory, a firm with more assets has a greater concern about the adverse selection on those assets. Accordingly, we might predict that leverage is positively related to tangible assets. On the other hand, a firm with more tangible assets is probably safer. Under the pecking order theory, we might predict a negative relationship between tangible assets and debt. This ambiguity stems from the fact that collateral can be viewed as a proxy for different economic forces.

The previous studies in the developed and developing countries regarding inter-relationship of ownership structure and leverage have shown mixed results.

Agrawal & Mandelker (1990) confirm the monitoring role of institutional owners at the time of anti-takeover charter amendments, based on a data sample from NYSE (New York Stock Exchange). Bathala et al. (1994) also use a data set from NYSE and find out that the institutional ownership has a negative relation with the level of debt financing, thus confirming that the institutional ownership plays the role of a substitute for insider ownership and leverage. Joher et al. (2006) take a data sample from the Kuala Lumpur

Stock Exchange and find a negative relationship between institutional ownership and managerial equity holdings, confirming that institutional investors play an effective role in mitigating agency costs. Chung (2012), in a study conducted in South Korea, indicates that a negative relationship exists between institutional ownership and leverage of a firm. On the contrary, Qiang (2007) finds a positive relation of percentage of institutional ownership with debt ratio and a negative relation of capital structure with the decentralized degree of institutional ownership based on a sample of listed companies in China. Said (2013) also confirmed this relationship in a dynamic framework, based on the sample of listed companies in France. Thus the results are not consistent even among developed countries and developing countries.

Pertaining to insider ownership, Bathala et al. (1994) find a negative relationship between insider ownership and leverage, using a simultaneous system in which institutional ownership is also included as an independent variable, based on the data from NYSE. On the other hand, Grossman & Hart (1986) advocate a positive relationship between insider ownership and leverage whereby high leverage serves as a bond, which may force managers to achieve greater cash flows for covering interest payments. Butt and Hasan (2009) found a negative relation between managerial ownership and debt ratio in a study conducted on the basis of a small sample of firms listed on Karachi Stock Exchange Pakistan. So, there are inconsistencies in the results between different countries.

SUMMARY AND MANAGERIAL IMPLICATIONS

This study investigates the impact of ownership structure on debt financing using a sample of 1098 firm-year observations from the manufacturing firms listed at the Karachi Stock Exchange (KSE), Pakistan. We extracted the data from the annual reports of the firms during the period of 2009 to 2014. The empirical results indicate that insider ownership, institutional ownership, profitability, and firm size are significantly and negatively related to leverage. Tangibility and non-debt tax shield are positively related to leverage, and uniqueness is negatively related to leverage. However, these relations are not significant. Both total debt ratio and long-term debt ratio have positive relationships with tangibility and non-debt tax shield. Short-term debt ratio, however, has a negative relationship with tangibility and positive relationship with non-debt tax shield. The results vary in the degree of significance.

The negative relation of leverage with insider ownership indicates that inside owners with substantial control over the operations of the business may gradually decrease debt in proportion of equity as their stake in the organization increases. Doing so could reduce the risk of insolvency for the insiders. The negative association of leverage with institutional ownership confirms that the institutional owners may substitute for the disciplinary role of debt. These findings lend support to the external monitoring effect but are against the entrenchment effect. But this may not be in the best interest of all the shareholders because debt is considered as a cheaper source of financing. Thus reducing the debt levels considerably might reduce the profitability and shareholder value. So efforts must be made on part of managers to align the interests of all the stakeholders, and to make optimum use of the available sources of financing. And policy makers also need to ensure that the rights of minority shareholders are protected through the balanced and effective role of institutional shareholders. When necessary laws and governance mechanisms are in place, then the institutional owners can play a vital role for the betterment of not only the firms and their shareholders but also for the overall governance system of the economy.

The findings may be useful not only for future researchers, but also for various parties involved in corporate governance. A decline in leverage levels with an increase in insider ownership is an indicator of risk aversive behavior, and excessive leverage in firms having lower insider ownership involves the risk of insolvency. Both of these behaviors are unhealthy for the corporate environment. Efforts can be made on part of shareholders to maintain effective debt levels. Similarly, policy makers can also take steps to ensure smooth availability of debt, reducing frequent fluctuations in interest rates and ensuring stability in the governance laws and mechanisms. This will reduce the level of uncertainty and boost the confidence of the corporate sector to make more use of debt financing. This will help in resolving the unhealthy trends of debt levels in the firms with changes in the levels of institutional ownership and insider ownership.

Our findings fulfill the aim of this study because the study was aimed at replicating the studies conducted in large and developed economies in small and developing economies. Small and developing economies may have their own dynamics and unique sets of problems, which affect the choice and decision of capital structure.

The future research in this context should first of all try to overcome the limitations of data, and moreover focus on other variables from the realm of corporate governance. Sector-wise exploration of relationships between different variables, and comparison between different developing economies will be useful additions to this research area. As we noticed above that there are inconsistencies in results even among developed countries and among developing countries, so more in depth studies are required, perhaps the cross-discipline studies, to explore the factors underlying the changes in relationship between ownership structure and leverage. Availability of more data will facilitate the use of more variables, and also make possible the comparison between different sectors.

REFERENCES

Agrawal, A. and Mandelker, G. N. (1990). Large shareholders and the monitoring of managers: The case of anti-takeover charter amendments. *Journal of Financial and Quantitative Analysis* 25, 143–161.

Ahsan, T., Wang, M., and Qureshi, M. A. (2016). Mean reverting financial leverage: Theory and evidence from Pakistan. *Applied Economics 48*(5), 379-388.

Bathala, C. T., Moon, K. P., and Rao, R. P. (1994). Managerial ownership, debt policy and the impact of institutional holdings: An agency perspective. *Financial Management 23*, 38–50.

Booth, L., Aivazian, V., Kunt, A. D., and Maksimovic, V. (2001). Capital structures in developing countries. *Journal of Finance 56*, 87-130.

Bradley, M.; Jarrell, G. A., and Kim, E. H. (1984). On the existence of an optimal capital structure: Theory and evidence. *Journal of Finance 39*, 857-880.

Brailsford, T. and Oliver, B. R., and Pua, L. H. S., (1999). Theory and evidence on the relationship between ownership structure and capital structure. Available at SSRN:http://ssrn.com/abstract=181888 or http://dx.doi.org/10.2139/ssrn.181888.

Brous, P. A., and Kini, O. (1994). The valuation effects of equity issues and the level of institutional ownership: Evidence from analysts' earnings forecasts. *Financial Management 23*, 33–46.

Butt, S. A. and Hasan, A. (2009). Impact of ownership structure and corporate governance on capital structure of Pakistani listed companies. *International Journal of Business and Management 4*(2). Available at SSRN: http://ssrn.com/abstract=1732511.

Chung, C. Y. (2012). Substitutability between institutional monitoring and debt monitoring. *International Research Journal of Finance and Economics*, Issue 101.

Crutchley, C. E., Jensen, M. R. H., Jahera, J. S. Jr., and Raymond, J. E. (1999). Agency problems and the simultaneity of financial decision making: The role of institutional ownership. *International Review of Financial Analysis 8*(2), 177–197.

Fama, F. E. and French, K. R. (2002). Testing trade-off and pecking order predictions about dividends and debt. *The Review of Financial Studies 15*(1), 1-33.

Fosberg, R. H. (2008). Dividend reductions and the pecking order theory. *Journal of the Academy of Business and Economics 8*(1) 166–170.

Frank, M. Z. and Goyal, V. K. (2003). Capital structure decisions. *AFA 2004 San Diego Meetings.*

Graham, J. R. (2000). How big are the tax benefits of debt? *Journal of Finance 55*, 1901–1941.

Grossman, S. J., and Hart, O. D. (1986). The costs and benefits of ownership: A theory of vertical and lateral integration. *Journal of Political Economy 94*(4), 691-719.

Harris, M. and Raviv A. (1991). The theory of capital structure. *Journal of Finance 46*, 297-356.

Jensen, M. C. and Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and capital structure. *Journal of Financial Economics 3*, 305–360.

Joher, H., Ali, M., and Nazrul, M. (1976). The Impact Of Ownership Structure On Corporate Debt Policy: Two Stage Least Square Simultaneous Model Approach For Post Crisis Period: Evidence From Kuala Lumpur Stock Exchange. *International Business & Economics Research Journal 5(5)*, 51–64.

Kolay, M., Schallheim, J., and Wells, K. (2011). Working Paper: Do non-debt tax shields matter for debt policy? Available at: http://home.utah.edu/~u0519018/Working%20Paper%20-%20Do%20Non-debt%20Tax%20Shields%20Matter%20for%20Debt%20Policy.pdf.

Lim, T. C., Chai, R., Zhao, D., and Lim, X. Y. (2012). Capital structure and political patronage: Evidence from China. *American Journal of Business and Management 1*(4) 177-182.

Luigi, P., and Sorin, V. (2009). A review of the capital structure theories. *Annals of Faculty of Economics 3*(1), 315-320.

Michaels, N., Chittenden, F., and Poutziouris, P. (1999). Financial policy and capital structure choice in UK SMEs: Empirical evidence from company panel data. *Small Business Economics 12*, 113–30.

Mjos, A. (2007). Corporate finance: capital structure and hybrid capital. *Doctoral dissertations*, available at: https://www.nhh.no/en/research-faculty/department-of-business-and-management-science/phd-programme/doctoral-dissertations.aspx.

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

Myers, S. (1977). The determinants of corporate borrowing. *Journal of Financial Economics 5*, 147–75.

Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance 39*, 575–592.

Qiang, L. (2007). Study on the influence of institutional ownership on capital structure of china listed companies. *International Conference on Wireless Communications, Networking and Mobile Computing*, September 2007, WiCom 2007, 3981-3984.

Qureshi, M. A., Sheikh, N. A., and Khan, A. A. (2015). A revisit of pecking order theory vresus trade-off theory: Evidence from Pakistan. *Pakistan Journal of Commerce and Social Sciences 9*(2), 344-355.

Qureshi, M. A., Imdadullah, M., and Ahsan, T. (2012). What determines leverage in Pakistan? A panel data analysis. *African Journal of Business Management 6*, 978-985.

Qureshi, M. A., Azid, T. (2006). Did They Do It Differently? Capital Structure Choices of Public and Private Sectors in Pakistan. *The Pakistan Development Review 45:4 Part II*, 701-709.

Rajan, R. G. and Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *The Journal of Finance* 10(5), 1421-1460.

Said, H. B. (2013). Impact of Ownership Structure on Debt Equity Ratio: A Static and a Dynamic Analytical Framework. *International Business Research 6(6)*, 162-180.

Sheikh, N. A. and Wang, Z. (2011). Determinants of capital structure: An empirical study of firms in manufacturing industry of Pakistan. *Managerial Finance 37*, 117-133.

Titman, S. and R. Wessels, (1988). The determinants of capital structure choice. *Journal of Finance 43*, 1-19.

Wald, J. (1999). How firm characteristics affect capital structure: An international comparison. *Journal of Financial Research 22*, 161-87.

Wansley, J. W., Collins, M. C., and Dutta, A. S. (1995). Evidence of a nonlinear relationship between corporate ownership structure and dividend policy. *Working Paper, University of Tennessee at Knoxville*.