Firm Specific Determinants of Debt Financing: A Sino-Pak Perspective

Basharat Khan[1]   M. Ramzan Akhtar[2]

Abstract

This study aims to empirically investigate the important firm's specific attributes that influence debt financing in Pakistani and Chinese firms. Using panel data techniques a sample of 180 Pakistani and 661 Chinese firms have been analyzed during 2006 to 2016. Our results for Pakistan show that uniqueness, profitability, liquidity and dividend payout per share have significant negative and size has significant positive influence on long term debt financing. Firms in China with higher profitability and uniqueness make less use of debt financing. While Chinese listed firms having higher tangible assets, growth opportunities, size and liquidity employ higher debt ratios. Non debt tax shields and earning volatility have no significant impact on debt financing in both countries.

Keyword: Debt financing, panel data, Clustering, firms' specific attributes, Sino-Pak

Introduction:

        A careful observation of the available empirical and theoretical literature shows that since the landmark irrelevance prepositions of Modigliani and Miller (1958), financing decisions are still a fascinating area for researchers. According to Myers (1984) capital structure's puzzle is more complicated than dividend puzzle. However extensive research for nearly five and a half decades has unfolded many dimensions of the financing myth. In the light of literature it is evident that financing choices of firms are influenced by firms own strengths and weakness along with overall institutional environment under which those firms operate (De Jong, Kabir & Nguyen, 2008: Fan, Titman & Twite, 2012).

        In the last two decades technological advancement and globalization has caused the world market much more integrated than ever before. As a result we see both cooperation and intense competition among firms. Better coordination and coping competition require sound knowledge of how firms are financed in different countries. Therefore in-depth knowledge of financing policies is of paramount importance. Cross-national comparisons are instrumental to draw such differences and parallel.

Today United States is rethinking its trade deals. US have withdrawn from Trans Pacific Partnership (TPP) and are threatening to withdraw from NAFTA. A 25% tariff on steel and 10% on aluminum imports is under consideration in the United States to help its firms compete and boost US industry. But Chinese firms are expanding and China is entering into new trade deals with different countries. Pakistan and China is working on

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[1] PhD Scholar, Capital University of Science and Technology, Islamabad
[2] Capital University of Science and Technology, Islamabad

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CPEC and some 700 Chinese firms have invested in different sectors of Pakistan. The growing cooperation between China and Pakistan is our main motivation to undertake this study. The growing cooperation between China and Pakistan is our main motivation to undertake this study. This paper focuses to answer two basic questions. Do the decisions to finance assets with long term debt significantly different in Pakistan and China? How the decision to use long term debt is influenced by firms' specific attributes in both the countries? We argue that a comparison of Chinese and Pakistani firms is helpful to understand how firm specific characteristics are exploited by firms to borrow long term debt in both countries.

The remaining study is organized as follows. Section 2 reviews previous literature. Section 3 presents data collection and research methods. Regression results are discussed in section 4. Discussion and conclusions are presented in section 5.

Literature Review

Literature so far has identified a number of firm's attributes that influence borrowing of a firm. Based on currently available literature firm's specific attributes such as non-debt tax shields (NDTS), assets tangibility (TANG), uniqueness (UNIQ), size (SIZE), earning volatility (EVOL), growth opportunities (GROW), profitability (PROF), liquidity (LIQD) and dividend payout per share (DIVP) have been analyzed as far as this study is concerned.

Non-Debt Tax Shields (NDTS)

The tax benefit caused by source/expense other than interest such as tax loss carry forward, research and development expenditure, investments tax credits and depreciation etc are known as non-debt tax shields. According to DeAngelo and Masulis (1980) tax substitution hypotheses expenses such as R&D expenditure, depreciation, investment tax credits etc work as substitutes to interest expense and can effectively shelter income from taxes. Therefore theoretically the relationship between leverage and non-debt tax shields is expected to be negative. Many theoretical and empirical studies support that leverage decreases as Non debt tax shield increases (Deesomsak, Paudyal & Pescetto, 2004; Akhtar & Oliver, 2009). However Bradley, Jarrell and Kim (1984) in contradiction with tax substation hypotheses found that non debt tax shield increases financial leverage of firm. Chang et al. (2009) results also support positive relationship.

H_1: NDTS has a significant negative impact on long term debt ratio

Tangibility (TANG)

Scott (1977) reports that management can increase equity value by transferring wealth from creditors by means of issuing collateralized debt. Myers and Majluf (1984) suggest that managers have better information than outsiders. To avoid costs of issuing equity and agency cost such as monitoring cost management may issue debt secured by

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collateral. Bondholders can restrict the firm by imposing either positive or negative covenants as a bonding mechanism. Such covenants may not always safeguard interests of the firm. In such circumstances the better way for firm to convince creditors is to offer fixed assets as a real guarantee. Therefore firms with higher level of tangible assets are expected to deploy higher level of financial leverage. Many empirical studies (e.g. Hovakimian & Li, 2011; Akhtar & Oliver, 2009) support positive leverage-tangibility relationship. However Deesomsak et al. (2004); Buferna, Bangassa and Hodgkinson (2005) suggest negative leverage-tangibility relationship.

H_2: TANG has a significant positive impact on long term debt ratio.

Uniqueness of product (UNIQ)

In case firms that produce specialized and unique products go bankrupt, such firms and its stakeholders (workers, suppliers and customers) suffer higher costs. According to Titman and Wessels (1988) firms that deal in specialized products protect their specialized assets and are expected to have lower financial leverage in their capital structures. Because labors in such industries are highly specialized with job specific skills and costs are high in case of financial distress.

H3: UNIQ has a significant negative impact on long term debt ratio

Firm's Size (SIZE)

Large firms with diversified ownership have less control over management. In such firms management may issue debt to minimize their personal losses in case of financial distress (Friend & Lang, 1988). Larger firms have the advantage of economies of scale along with bargaining power with lenders. Therefore such firms bear lower issuing cost of debt and equity (Michaelas et al., 1999). Large firms are mature and expected to have stable cash flows with low volatility (Graham, Lemmon & Schallheim, 1998; Gaud et al., 2005). Size may also be inverse proxy for the probability of financial distress. Larger firms are associated with low degree of information asymmetry compared to smaller firms. A number of studies have confirmed positive relationship between leverage and size (e.g., Akhtar & Oliver, 2009; Hovakimian & Li, 2011; Alves & Ferreira, 2011). But the pecking order suggests that larger firms are expected to use low debt due to lower asymmetry of information. Many empirical studies support negative relation hypothesis (e.g. Kim & Sorensen, 1986; Titman & Wessels, 1988).

H_4: SIZE has a positive significant impact on long term debt

Earning Volatility (EVOL)

Firms with more volatile earnings have higher business risk. It is generally expected that earning volatility would compel managers to restrict the component of debt in their capital structure. Many other researchers in line with Trade-off theory confirm negative leverage-volatility relationship (Handoo & Sharman, 2014; Lemmon, Roberts &

Zender, 2008; Delcoure, 2007; Fama & French, 2002). However the negative leverage-risk relationship can be reversed due to wealth transfer incentives of the management (Boyle & Eckhold, 1997). According to Boyle and Eckhold (1997) a firm with volatile earnings may excessively use debt to take on risky projects. In case of success shareholders enjoys the benefits otherwise bondholders suffer. Many other empirical studies such as Huang and Song (2006); Nguyen and Ramachandran (2006); Filsaraei, Zarifian and Naghizade (2016) also confirm these findings by reporting positive leverage-volatility association.

H5: EVOL has a significant negative impact on long term debt ratio

Growth opportunities (GROW)

According to Myers (1977) firms with more growth opportunities are expected to rely less on leverage and great on equity. The negative leverage-growth relationship is consistent with both trade-off theory and agency theory. As per trade-off introduction of debt escalates the problems of bankruptcy and expected bankruptcy cots increases (Bradley et al., 1984). Growth options are not tangible and cannot be pledged as collateral for debt (Delcoure, 2007). Hence growth firms are expected to have lower leverage ratios. According to Agency costs theory (Jensen, 1986) growth firms have incentive to invest in risky projects to transfer bondholder's wealth to shareholders at creditor's risk. Trying to avoid such conflicts and its associated costs, growth firms will use less long term debt. However Feidakis and Rovolis (2007); Filsaraei, Zarifian and Naghizade (2016) suggest positive relationship between growth opportunities and leverage of a firm.

H6: GROW has a significant positive impact on long term debt ratio

Profitability (PROF)

Pecking order implies that asymmetric information and cost of issuing outside equity induce managers to use internally generated funds and avoid using external financing. Consistent with pecking order voluminous empirical evidence suggest that highly profitable firms would make less use of debt to avoid costs of both information asymmetry and issuing outside equity (Hovakimian & Li, 2011). According to Fischer, Heinkel, and Zechner (1989) in a dynamic setting Tradeoff theory where adjustment to a target capital structure is costly suggest a negative relationship between profitability and leverage ratios. It is because firms cannot constantly rebalance its capital structures due to transaction costs. Strebulaev (2003) confirm the predictions of dynamic tradeoff under costly adjustment assumptions. As highly profitable firms face low chances of financial distress, hence based on static trade-off theory profitable firms would try to protect their profits from corporate taxes to get higher tax advantages by employing high level of leverage. Consistent with trade-off theory a number of studies suggest positive

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relationship between leverage and firms' profitability (Long & Malitz, 1985; Buferna et al., 2005: Frank & Goyal, 2009; Akhtar & Oliver, 2009; Alves & Ferreira, 2011; Hovakimian & Li, 2011; Forte, Barros & Nakamura; 2013)

H_7: PROF has a significant negative impact on long term debt

Liquidity (LIQD)

Pecking order theory expects managers in market economies to accumulate liquid reserves using retained earnings to finance growth internally and avoid costs of information asymmetry and issuing new equity. Hence a negative leverage-liquidity relationship is expected in market economies. Firms in bank based economies maintain a close relationship with banks. Hence such firms seem not be bothered by costs of information asymmetries. In line with Pecking order predictions various theoretical and empirical studies suggest a negative leverage-liquidity relationship (Serghiescu & Vaidean, 2014; Sheikh (2015). However Williamson (1988) expects firms having more liquid assets may use higher financial leverage, because such assets are easily monitored and liquidated. Another argument about positive leverage-liquidity relationship is that liquid assets can be liquidated quickly and easily without much discount from their fair values. Firms having more liquid assets face lower costs of financial distress as compared to firms having illiquid assets. Therefore managers with more liquid assets on the balance sheet are expected to use higher leverage ratios (Harris & Raviv, 1990; Shleifer & Vishny, 1992). The positive leverage-liquidity relationship is consistent with trade-off.

H_8: LIQD has a significant positive impact on long term leverage ratio

Dividend payout (DIVP)

According to dividend irrelevance dividend policy has no potency to increase or decrease neither value nor cost of capital of a firm provided certain assumptions hold true (Miller & Modigliani, 1963). However bird in hand theory suggests that investor prefer cash dividends more than future gains as a result the perceived riskiness of dividend paying firms decreases. Which result in lower required rate of return for dividend paying stocks (Lintner, 1962; Gordon, 1963). Investors are expected to prefer cash dividends more than capital gains only if cash dividends are taxed favorably than capital gains. According to Boyle and Eckhold, (1997) if capital gain tax is lower than tax on cash dividends, then shareholders of high dividend payers will demand higher required rate of return. This higher required rate of return will increase the cost of equity. Hence firms will be expected to use more debt than equity.

In the presence of asymmetric information it is difficult for outsiders to make a clear discrimination between strong and weak firms (Ross, 1977). In the presence of pooling equilibrium strong firms may employ a signal that is affordable for them but really difficult for weak firms to mimic. One such signal may payment of a huge dividend

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in the form of cash or issuance of a huge debt. Agency models also suggest link between the leverage and dividend payment (Jensen, Solberg & Zorn, 1992). Agency models predict debt issue and dividend payment as an alternate to mitigating agency problems. Chang and Rhee (1990) suggest a positive relationship between leverage and dividend payout ratios. However Frank and Goyal (2009) report a negative relationship between leverage and dividends.

H_9: DIVP has a significant Positive Impact on long term leverage ratio

Data and Methodology

Data

This study analyzes firm's specific characteristics of 180 Pakistani and 661 Chinese non financial firms to know its impact on long term debt financing. Apart from financial firms, those non financial firms having no reasonable data are also excluded. Annual data for long term debt and all firm specific variables during 2004-2016 have been gathered from COMPUSTAT Global database. The data for the year 2004 and 2005 were used as base years to calculate the earnings volatility and dropped. Thus our data period ranges from 2006 to 2016. Data for both the countries are in their respective currencies (e.g. Chinese data in Yuan and Pakistani data in Rupees). This is because all the explanatory and explained variables are in ratio form. Different proxies regarding measurement of financial leverage and its determinants have been used so far in literature. To measure financial leverage (LDBTA) we use long term debt plus current portion of long term debt to book value of total assets. A similar measure has been used by Wald (1999). Measurement of firm and country's specific determinants has been carried out as per table 1 based on previous literature. Dividend payout per share has taken as 1, in case dividend per share exceeds earning per share.

Table 1: *Measurement of Firms' specific Explanatory Variables*

Variable	Symbol	Measurement
Non- Debt Tax:	NDTS	Total annual depreciation to BV of total assets
Tangibility	TANG	BV of property, plant & equip to BV of total assets
Uniqueness	UNIQ	Selling, G. administrative costs to annual sales
size	SIZE	Natural log of BV of total assets
Volatility	EVOL	Standard deviation in three years EBIT
Growth	GROW	Capital expenditure to BV of total assets
Profitability	PROF	EBITDA scaled by BV of total assets
Liquidity	LIQD	Current Assets Scaled by Current Liabilities
Dividend payout /Share	DIVP	Dividend per share scaled by earning per share

Data Source: *COMPUSTAT Global database*

Methodology

This study uses unbalanced panel data and employs panel data methodology for analysis. Panel data methods enhance sample size and are considered appropriate to capture the dynamics of change over time and crossectional units. To investigate the

effects of firms' specific attributes on choice of long term debt ratio, we estimated following three models under three different assumptions. Under the assumption of homogeneity and common intercept, we estimated common constant model as under

$LDBTA_{i,t} = \alpha + \beta_1 NDTS_{i,t} + \beta_2 TANG_{i,t} + \beta_3 UNIQ_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 EVOL_{i,t} + \beta_6 GROW_{i,t} + \beta_7 PROF_{i,t} + \beta_8 LIQD_{i,t} + \beta_9 DIVP_{i,t} + \varepsilon_{i,t}$ ....(1)

However assumption of crossectional homogeneity in panel data is restrictive and disapproved by Breusch Pagan LM in our case. Therefore under crossectional heterogeneity assumption we estimated least square dummy variable (LSDV) model and error component model with year fixed effects (γ_t).

LSDV model takes heterogeneity among cross-sectional units into account and allows each unit to assume its own intercept value using dummy variable. To capture this heterogeneity we introduce time invariant variable (μ_i) into our model. By this we assume that intercept of the model does not vary our time, however it does vary over cross-sections. This model does not allow individual units a different slope. It remains the same for the parameters. The standard errors are clustered by firms.

$LDBTA_{i,t} = (\alpha + \mu_i) + \beta_1 NDTS_{i,t} + \beta_2 TANG_{i,t} + \beta_3 UNIQ_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 EVOL_{i,t} + \beta_6 GROW_{i,t} + \beta_7 PROF_{i,t} + \beta_8 LIQD_{i,t} + \beta_9 DIVP_{i,t} + \gamma_t + u_{it}$ ....(2)

It must be noted that μ_i captures the difference among cross-sections, but this difference is not due to any of the included explanatory variables but due to some hidden variable. That is why if we could not include dummy to capture unobserved variation this will inflate our intercept (omitted variable bias).

In error component model we assume that distribution of individual specific effects (α_i) are independent of the regressors. Therefore we add individual specific effects α_i in the model with the idiosyncratic error term (e_{it}) to have a composite error term $\varepsilon_{i,t}$, which equals $\alpha_i + e_{it}$ as

$LDBTA_{i,t} = \alpha + \beta_1 NDTS_{i,t} + \beta_2 TANG_{i,t} + \beta_3 UNIQ_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 EVOL_{i,t} + \beta_6 GROW_{i,t} + \beta_7 PROF_{i,t} + \beta_8 LIQD_{i,t} + \beta_9 DIVP_{i,t} + \gamma_t + \varepsilon_{i,t}$ ....(3)

Results

This section of the study presents descriptive summary, correlation matrix and regression results for both Chinese and Pakistani firms. Table 2 and 3 below presents summary statistics for 180 Pakistani firms with 1511 observations and 661 Chinese firms with 5804 observations respectively. Table 2 and 3 reveal that 16.7% of total assets in Pakistani firms are financed with long term debt compared to 15.1% in Chinese firms. Besides that the aforementioned tables also indicate that Chinese firms have lower overall standard deviation (13.6%) compared to 15.5% in Pakistani firms. Examining the variation breakups reveal that most of the variation in all the variables is "between"

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variation except for earning volatility and growth for both Pakistan and China and dividend payout per share for Chinese firms only.

Table 2: *Descriptive Statistics for Pakistani Firm*

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.137	.167	.155	.000	.797
	between			.146	.000	.787
	within			.087	-.170	.566
NDTS	overall	.033	.035	.019	.000	.285
	between			.014	.004	.090
	within			.013	-.029	.256
TANG	overall	.48	.483	.198	.000	.938
	between			.190	.002	.913
	within			.085	.155	.938
UNIQ	overall	.051	.075	.066	.000	.368
	between			.062	.002	.317
	within			.020	-.045	.332
SIZE	overall	8.589	8.761	1.421	4.870	12.815
	between			1.403	5.475	12.575
	within			.422	6.906	10.632
EVOL	overall	.030	.039	.033	.000	.275
	between			.024	.001	.184
	within			.026	-.038	.226
GROW	overall	.042	.064	.069	.000	.541
	between			.037	.001	.181
	within			.060	-.110	.466
PROF	overall	.134	0.148	.096	.000	1.008
	between			.073	.008	.400
	within			.062	-.113	.756
LIQD	overall	1.13	1.375	.811	.125	4.925
	between			.683	.282	4.704
	within			.483	-.699	4.017
DIVP	overall	.054	.232	.309	.000	1.000
	between			.248	.000	1.000
	within			.199	-.568	1.141

Table 2 presents descriptive summary for a sample of 180 Pakistani firms using annual data from 2006 to 2016.

Table 3: *Descriptive Statistics for Chinese Firms*

Variable		Median	Mean	Std. Dev.	Min	Max
LDBTA	overall	.117	.151	.136	.000	.875
	between			.112	.000	.668
	within			.075	-.239	.783
NDTS	overall	.027	.030	.018	.000	.154
	between			.016	.001	.130
	within			.009	-.038	.105
TANG	overall	.399	.412	.220	.000	.975
	between			.201	.001	.924

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	within			.090	-.215	1.146
UNIQ	overall	.097	.118	.092	.000	.810
	between			.090	.003	.674
	within			.033	-.157	.502
SIZE	overall	8.673	8.82	1.337	4.909	4.693
	between			1.244	5.891	14.35
	within			.533	5.502	12.208
EVOL	overall	.015	.023	.031	.000	.842
	between			.022	.003	.288
	within			.025	-.254	.577
GROW	overall	.050	.065	.056	.000	.477
	between			.036	.001	.226
	within			.044	-.105	.424
PROF	overall	.071	.081	.053	.000	.569
	between			.040	.006	.246
	within			.035	-.077	.489
LIQD	overall	1.092	1.206	.681	.075	4.991
	between			.556	.229	4.147
	within			.423	-1.091	4.945
DIVP	overall	.000	0.099	.207	.000	1.000
	between			.115	.000	1.000
	within			.179	-.350	1.008

Table 3 presents descriptive summary for a sample of 661 Chinese firms using annual data from 2006 to2016.

Table 4 and 5 below present the correlation coefficients between the explained and firm specific explanatory variables for Pakistani and Chinese firms respectively. Both the matrices indicate no sign of multicollinearity. The correlation matrices for both the countries show that non debt tax shields, assets tangibility, size of the firm and growth are positively correlated with long term debt ratio in both countries. Similarly uniqueness, earning volatility, profitability and liquidity are negatively correlated with long term debt ratio in both Pakistani and Chinese firms. However dividend payout is negatively correlated with debt ratio in Pakistan and has opposite sign in Chinese firms.

Table 4: *Correlation Matrix for Pakistani Firms*

Var.	1	2	3	4	5	6	7	8	9	10
LDBTA	1.00									
NDTS	.12	1.00								
TANG	.48	.21	1.00							
UNIQ	-.21	.09	-.17	1.00						
SIZE	.08	-.07	.04	-.06	1.00					
EVOL	-.06	.07	-.04	-.01	-.15	1.00				
GROW	.12	.06	.20	.05	.05	-.01	1.00			
PROF	-.26	.26	-.17	.05	-.05	.30	.06	1.00		
LIQD	-.38	-.09	-.35	.13	-.04	.08	.02	.36	1.00	
DIVP	-.19	.11	-.17	.02	-.01	.03	.07	.24	.13	1.00

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Table 5: *Correlation Matrix for Chinese Firms*

Var.	1	2	3	4	5	6	7	8	9	10
LDBTA	1.00									
NDTS	.10	1.00								
TANG	.40	.60	1.00							
UNIQ	-.22	-.05	-.11	1.00						
SIZE	.25	.06	.07	-.27	1.00					
EVOL	-.02	.12	.08	-.01	-.10	1.00				
GROW	.22	.24	.46	-.03	.07	.04	1.00			
PROF	-.04	.42	.26	-.03	.07	.19	.25	1.00		
LIQD	-.19	-.29	-.45	.20	-.17	.02	-.14	.06	1.00	
DIVP	.01	.03	-.02	-.01	.21	-.08	-.02	.12	.04	1.00

Under Breusch-Pagan LM test our null hypotheses of pooled OLS is rejected in both (Pakistani and Chinese) cases. This means that there is a possibility of any of individual specific effects. Hence under crossectional heterogeneity our estimation results for fixed and random effects are reported in Table 6 and 7 for Pakistani and Chinese firms respectively. Standard errors are clustered in id (firms). Hausman test statistic rejects null hypotheses of random effects and recommends for fixed effects. As per Table 6 fixed effects shows that firms' uniqueness and dividend payout per share have significant negative impact on debt ratios in Pakistani firms with 95% confidence interval. Profitability and liquidity have significant negative impact with 99% confidence interval. Only size influence the debt ratios in Pakistani firms positively. The size and debt relation is significantly positive with 99% confidence. The percentage variation explained by individual specific effects (rho) is 80.3% in Pakistani firms. As rho value is quite high which indicates that rho is not idiosyncratic. Table 7 for Chinese firms reveals that profitability and uniqueness have negative significant influence on long term debt ratio with 99% and 90% confidence interval respectively. Tangibility, size, growth and liquidity show significant positive sign with 99%, 99%, 95% and 90% confidence interval respectively. The percentage variation explained by individual specific effects (rho) is 63.7% in Chinese firms.

Table 6: *Regression Results for Pakistan*

Variables	(1) Fixed1 LDBTA	Std. Err. adjusted for clusters in id	(2) Random1 LDBTA	Std. Err. adjusted for clusters in id
NDTS	.286	(.160)	.218	(.201)
TANG	.062	(.065)	.074	(.056)
UNIQ	-.375**	(.182)	-.429***	(.136)
SIZE	.056***	(.018)	.014	(.009)
EVOL	-.045	(.143)	-.06	(.137)
GROW	.042	(.053)	.065	(.052)
PROF	-.222***	(.029)	-.457***	(.060)

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LIQD	-.076***	(.011)	-.079***	(.010)
DIVP	-.037**	(.014)	-.043***	(.014)
Observations	1,511		1,511	
Number of id	180		180	
R^2 (Within)	.412		.403	
Between	.158		.321	
Overall	.214		.340	
F_Stat/Wald_Chi^2	37(.000)		962.6(.000)	
rho	.803		.712	
Hausman_Chi^2	27(.000)		Breusch Pagan LM 2448(.000)	
Alphafehat(Mean)	-2.79*10^{-10}			

Robust standard errors in parentheses,   *** p<.01, ** p<.05, * p<.1

Table 7: *Regression Results for Chinese firms*

Variables	(1) Fixed2 LDBTA	Std. Err. adjusted for clusters in id	(2) Random2 LDBTA	Std. Err. adjusted for clusters in id
NDTS	.250	(.221)	.060	(.205)
TANG	.163***	(.033)	.207***	(.028)
UNIQ	-.087*	(.052)	-.133***	(.034)
SIZE	.041***	(.007)	.028***	(.004)
EVOL	-.033	(.078)	.036	(.076)
GROW	.087**	(.040)	.091**	(.040)
PROF	-.330***	(.050)	-.335***	(.046)
LIQD	.009*	(.005)	.010**	(.005)
DIVP	.001	(.008)	.001	(.008)
Observations	5,804		5,804	
Number of id	661		661	
R^2 (Within)	.141		.136	
Between	.238		.315	
Overall	.197		.248	
F_Stat/Wald_Chi^2	42(.000)		1121.4 (.000)	
rho	.637		.554	
Hausman_Chi^2	237(.000)		Breusch Pagan LM 7951(.000)	
Alphafehat (Mean)	11*10^{-10}			

Robust standard errors in parentheses,   *** p<.01, ** p<.05, * p<.1

Discussion

Empirical findings of this study reveal that non debt tax shield have positive insignificant impact on debt ratios in both countries. These findings contradict tax substitution hypotheses. Reason may be our proxy to measure non debt tax shields is closely correlated with assets tangibility. Thus according to Scott (1977) firms having tangible assets can borrow at reasonably lower rates. Such firms with assets having collateral value can employ more debt in capital structure. These findings are also in line with Chang, Lee and Lee (2009).

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Positive coefficient sign for asset tangibility both in Pakistan and China is consistent with trade-off hypothesis. However it is highly significant in China and insignificant in Pakistan. This implies that Chinese firms relies more on long term debt financing for their assets than their Pakistani counterparts. These findings contradict Booth et al. (2001) and Bauer (2004).

According to Titman and Wessels (1988) firms that deal in specialized products protect their specialized assets and are expected to have lower financial leverage in their capital structures. Because labors in such industries are highly specialized with job specific skills and costs are high in case of financial distress. Our results for firms' uniqueness has significant negative coefficient for Pakistan and China. But in our case we differ with Titman and Wessels (1988) interpretation. We are of the opinion that if firms pay a bigger portion of their sales as selling, general and administrative costs, then employing high debt may make them vulnerable to financial difficulties if sales go down.

Size's coefficient reveals positive and highly significant influence on debt ratios in both countries. These results are in line with trade-off suggesting direct leverage-size relationship. Titman and Wessels (1988) argue that larger firms have ability to diversify their portfolios hence a higher level of debt may be employed.

Earning volatility has negative influence on long term debt ratios both in Pakistan and China. However the result in both countries is insignificant. According to trade-off theory if financial leverage increases beyond a certain level, the risk of financial distress increases (Kraus & Litzenberger, 1973) and the benefit of tax shields diminish. Hence Trade-off predicts that increase in earnings volatility or business risk would push indebted firms into financial distress. Therefore firms having higher variations in their earnings or cash flows are expected to employ lower financial ratios. Thus negative leverage-volatility relationship is consistent with trade-off theory. Negative leverage-risk relationship is also consistent with pecking order hypotheses.

Growth opportunities have positive impact on firms' financial leverage in both countries. However this relationship is insignificant in Pakistani case. Our findings are in contradiction with Myers (1977) results. Our results supports Chen (2004); Filsaraei, Zarifian and Naghizade (2016). This study reports a negative and highly significant relationship between profitability and debt ratios in both the countries. Consistent with pecking order voluminous empirical evidence suggest that highly profitable firms make less use of debt to avoid costs of both information asymmetry and issuing outside equity (Akhtar & Oliver, 2009; Hovakimian & Li, 2011). Our study also supports pecking order for Pakistani and Chinese firms. Thus we say that profitable firms both in Pakistan and China use their internally generated firms to finance their assets rather than issuing long term debt.

Liquidity has highly significant negative relationship with debt financing in Pakistani firms. Antoniou et al. (2002) suggest that managers in market based economies may prefer to make use of firm's liquidity. In the presence of information asymmetry, cost of issuing equity increases. Pecking order theory expects managers in market based economies to accumulate liquid reserves using retained earnings to finance growth internally. This helps managers avoid costs of information asymmetry and issuing new equity. As a result a negative leverage-liquidity relationship is expected more likely in market based economies. However the same relationship in Chinese firms is significantly positive. The positive leverage-liquidity relationship is consistent with trade-off. That is because more liquid assets mean less risky bankruptcy (Harris & Raviv, 1990; Shleifer & Vishny, 1992).

Dividend payout per share has insignificant positive relationship with debt financing in Chinese firms. Consistent with trade-off Chang and Rhee (1990) also suggest a positive relationship between leverage and dividend payout ratios. But the same relationship is negative and significant in Pakistani firms. Pakistani firms show dividend-leverage relationship consistent with pecking order. Frank and Goyal (2009) report a negative relationship between leverage and dividends.

Conclusion and Recommendations

This study empirically attempts to determine the influential firms' specific attributes of long term debt financing in Pakistan and China. 180 and 661 non financial firms from Pakistan and China respectively are included in the analysis during 2006 to 2016. Panel data techniques namely fixed and random effects have been performed for both the countries. We use long term debt to book value of total assets as our explained variable. Based on our empirical findings we reject the tax substitution hypotheses in both countries. Asset tangibility shows highly significant positive influence on debt financing in China as compared to insignificant positive in Pakistan. The possible reason may be larger bond market and banking sector in China makes tangible assets as good collateral as compared to Pakistan. Firms with unique and specialized products in both countries make less use of debt, may be due to higher bankruptcy costs in case of financial distress. Similarly size of firm has significant positive influence on debt financing both in Pakistan and China. The reason may be the ability of larger firms to diversify and overcome information asymmetry. As per earning volatility is concerned, firms in both countries exhibit conservatism by showing negative leverage-earning volatility relationship. Growth firms in China make more use of financial leverage as compared to Pakistani firms. Pecking order with respect to profitability-leverage relationship is validated in both countries. However firms with more liquid assets in Pakistan make significantly less use of debt and their Chinese counterparts make more

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use of debt financing. Firms having higher dividend payout per share in Pakistan use less long term debt for assets financing. On the other hand Chinese dividend paying firms use more debt financing. Chinese firms having higher growth opportunities make significantly higher level of debt financing, the same relationship about Pakistani firms is positive but insignificant. Non debt tax shields and earning volatility in both countries have no significant impact.

Productivity situations (both at firm and country level) are important to be considered in comparisons and competitions. As an extension of this study we expect future studies to consider productivity conditions to assess firms' ability to sustain debt financing.

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