Country Level Governance as A Capital Structure Determinant: A Case of Pakistani Non-Financial Listed Firms

Taseer Khan[1] ID, Wali Rahman[2] ID

[1] PhD Scholar, Department of Business Administration, Sarhad University of Science and Information Technology (SUIT) Peshawar, Pakistan. Email: tasirkhan199@gmail.com
[2] Head, Department of Business Administration, Sarhad University of Science and Information Technology (SUIT) Peshawar, Pakistan. Email: wali.ba@suit.edu.pk

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ABSTRACT

Current paper investigated the effects of country governance indicators and firm level variables on the capital structure of non-financial listed firms registered with Pakistan Stock Exchange (PSX) for the interval of 2002-18. The collected panel data was analyzed by employing panel data analysis techniques e.g., pooled OLS, fixed effect and random effect (FR/RE) model and 2-step system GMM. The purpose of employing these techniques was to capture the un-observed heterogeneity and endogeneity in the model. FE model with robust standard error was applied to control the heteroskedasticity in the model. The suitability of pooled OLS and RE model was decided on the basis of P-value of "Breusch and Pagan Lagrangian Multiplier Test" (BPLM). The results revealed that corruption perception, country governance variables and firm level variables have a considerable impact on capital structure of non-financial registered firms. Equally theory and practice can benefit from the study's findings. The study aims to theoretically incorporate new independent variables into the capital structure literature in the context of Pakistan, including political patronage, democratic regime, rule of law, abuse of power, quality of regulation, stability of politics, voice and accountability, and government effectiveness. On the practical side, the findings provide guidelines for the firms to be careful about these determinants that may be helpful in minimizing the default risk associated while lending funds. Future research may be conducted by replicating in other sectors to validate the results.

1.   Introduction

A firm capital structure mix is seen very different from firm to firm. It is composed of debts and equity securities with a varying percentage (e Zutter, 2011). Keeping in view, its complex impact on firm value, its understanding is highly critical for financial manager. A proper mix of capital growth, business value and reducing the cost of capital is vital in this regard (Qamar, Farooq, Afzal, & Akhtar, 2016). The concept of the capital structure as a topic of concerned has started from the mid of nineteenth century. There are a number of theories which

have tried to grasp its complexity. These include the trade-off theory, agency cost theory, signaling theory, irrelevance theory, and information asymmetry theory proposed by Modigliani and Miller (1958), among others. Debt financing is a method used to handle the agency problem between stakeholders.

Managers hesitate to opt a negative NPV project for investment as a result of the capital structure's debt financing, which reduces free cash flows of funds as a result (Khan, 2012)**.** Similar to this, the corporation has a greater likelihood of going bankrupt the more debt it finances, but it also offers a tax shelter advantage (Krishnan & Moyer, 1997). Therefore, an optimum capital structure level is needed, which is the level where the WACC is at its lowest and increases company value.

The macro level, national political and economic contexts that also affect the capital structure have received less attention than business-specific characteristics such firm size, tangibility, profitability, etc. (Hussain, Jianfu, & Kamran, 2023; Mohammadzadeh, Rahimi, Rahimi, Aarabi, & Salamzadeh, 2013). The generalizability of past empirical investigations' findings is questioned almost everywhere since they are inconsistent or even conflicting.

Bases of capital structure at the company level have been studied widely, including in Pakistan. However, Pakistan has seldom ever conducted study on the macro-economic factors that affect a country at large as pinpointed by (Balios, Daskalakis, Eriotis, & Vasiliou, 2016; Huong, 2018; Tee, 2018). It is necessary to verify the result of prior academics and investigate the extent to which they have applications in developing economies like Pakistan. These include the perception of fraud, rule of law, the success of regime, voice and answerability, regulatory environment, political stability, volume, tangibility, risk, lucrativeness, the growth of the bond and stock markets, G.D.P growth, and loaning interest rates. Of these, the governance variables are unique to Pakistan, and it is anticipated that they will produce unique results as well.

Current research intends to analyse the capital structure patterns which are popular in Pakistani non-financial registered companies and to inspect the impacts of national governance on capital structure. Additionally, the study attempts to investigate particular capital structure and governance characteristics.

The study is significant because of its theoretical and practical ramifications. By incorporating elements like Political patronage, the political system, the supremacy of law, corruption, the effectiveness of the regulatory system, political stability, public participation, and the performance of the government the study, which focuses on Pakistan, theoretically adds to the body of literature. Practically, the findings provide investor confidence, to make choices while investing in the stock. The importance of this study lies in its ability to bridge the gap between governance practices and financial decisions in the perspective of Pakistan. By concentrating on non-financial registered companies, this study directly addresses a sector that adds considerably to the country's economy. The understandings gained from this research can inform strategic decisions made by regulators, companies, investors, and researchers, eventually driving improved corporate governance practices and financial outcomes in Pakistan's business landscape.

2.   Literature Review

The literature on structure of capital is based on theories of the structure of capital and numerical investigations they have been carried on it around the globe. In the world of finance, it is regarded as one among the most extensively studied subjects. A brief explanation of the capital structure is under.

2.1. Theories of Capital Structure

In finance research, capital structure is among the most examined field because of its importance that it has an association with the firm performance. The "Irrelevance Theory" by Modigliani and Miller (1958), A revolutionary concept in capital structure doctrines claimed that, in the case of an ideal capital market, the worth of a company was more closely tied to its profitability than to its capital structure. The irrelevance theory was then refined by Modigliani and Miller (1963), who claimed that debt financing is gainful because it gives the company a tax benefit. Hence a firm can eliminate tax payment by using entire debts in its capital structure. Krishnan and Moyer Krishnan and Moyer (1997) investigated that debts finance is beneficial because it pays fixed interest payments, that helps in the elimination of the tax payouts. The "pecking order theory" suggested by Myers and Majluf (1984) explains the rationale behind why businesses prefer to meet their funding needs in that order. Retained earnings are the first internal source, and if these earnings are insufficient, external debts are the second alternative. Issuance of common stock is the third option, regardless of the size of the company. The pecking order theory is advocated by pragmatic researches (Anwar & Ali; Booth, Aivazian, Demirguc-Kunt, & Maksimovic, 2001; Hutchinson, 2004; Tong & Green, 2005). The "trade-off theory" of capital structure was introduced by Stiglitz (1969) to strike a balance between debt and equity financing. According to this hypothesis, having debts has a cost in terms of bankruptcy and financial suffering, but it also offers the benefit of a tax shelter (Kraus & Litzenberger, 1973). The idea so cautions the interested parties to be watchful of appropriate level and to make a trade-off between these two. Jenson and Meckling (1976) hypothesized that excessive debt levels fund lower agency costs, which result from lower free cash flow due to agency conflicts. According to this idea, academics Ebrahim, Girma, Shah, and Williams (2014) claim that when managers shift toward debt financing, they face a hurdle in meeting the borrowing cost. An investor, on the other hand, is focused on return on investment. Managers must therefore convey to the stock market and other patrons that the company anticipates excessive cash flow based on improved operation in order to cover borrowing costs.

Ross (1977) created the "signaling theory" with this element of association among the stock market and company's worth in mind. This theory places a strong emphasis on the importance of specific indications (signals) in markets that pique the interest of market participants. Debt finance is utilized as a indication to differentiate good and bad businesses.

Generally, a manager's view is that high debts firms are high quality with an optimistic future growth compared to low debts firms (Ross, 1977).

The connection of capital structure and business efficiency is explained by a different capital structure theory (conventional theory). According to the hypothesis, when the W.A.C.C. is kept at a low level, it boosts the value of the company, in line with the findings of (Krishnan & Moyer, 1997)

2.1.1. Macro-Economic and the Country Governance Determinants of Capital Structure

Numerous empirical research studies have considered the unique aspects that affect a corporation's capital structure, such as growth, firm size, profitability, liquidity, and tangibility (Alkhatib, 2012). As additional determinants of capital structure, Kayo and Kimura (2011) have included additional components that are divided into three categories and include company, industry, and country-specific characteristics. Among these are the Herfindahl-Hirshman index (HH Index), growth of capital markets, the increase in the gross domestic product (DGP), lending interest rates, inflation, the country's financial system, and a significant effect on capital structure. Johnson and Mitton (2003) also looked into political patronage as a factor affecting capital. According to Basharat, Toqeer, and Abbas (2022), businesses with political ties can

readily apply for bank credit at reduced interest rates, which ultimately promotes the debt-to-income ratio.

Faccio (2006) looked at the impact of politics on businesses and discovered that political influence-using businesses are particularly prevalent in states with high levels of corruption, lax property rights protection, and undemocratic political systems. Firms in this region were discovered to benefit from cheap taxes and inexpensive debts, which encouraged the practice of financing through debt and raised the ratio of debts (Chen, Liu, & Su, 2013; Fungáčová, Kochanova, & Weill, 2015). Thanh (2017) looked into how fraud influences a firm's capital structure. The findings demonstrate how corruption has a detrimental effect on a firm's capital structure. Corruption makes it more expensive for businesses to borrow money, which results in higher borrowing costs for businesses. Panda and Nanda (2020) looked at the empirical relationships between macroeconomic and firm-level factors and how they affected the capital structure of manufacturing enterprises. Their findings demonstrate that factors on company level have major effect on the equilibrium of loans and equity.

Ahsan, Wang, and Qureshi (2016) looked at the factors that affect capital structure at the business and national levels, including inflation, exchange rates, types of governments, capital formation, and economic growth. Their study's findings demonstrated that the capital structure was significantly influenced by factors at the national level.

3. Methodology

The actions conducted together to analyze the data gathered are referred to as the methodology. GMM and Pooled Ordinary Least Square (OLS), which take into account both theoretical and empirical viewpoints, are among these steps.

3.1. Data and Data Collection

For a span of 17 years (2002–18), 172 non-financial registered corporations on the Pakistan Stock Exchange provided panel secondary data of firm level variables. Data on governance and macroeconomic variables have been gathered from reputable sources such the World Bank Government Indicator Database, World Bank Indicators (WGI) Index, and Transparency International Corruption Perception Index.

3.2. Model Equation

The mathematical equation that measures the effect of company, macro-economic and country governance level variables impact on capital structure is given below (equation 1).

$$CS_{it} = \beta_0 + \beta_1 CORR_{it} + \beta_2 LAW_{it} + \beta_3 (Govt. Effectiveness)_{it} + \beta_4 (Voice \& Accountability)_{it} + \beta_5 (Regulatory\ Quality)_{it} + \beta_6 (Political\ Stability)_{it} + \beta_7 Size_{it} + \beta_8 TANG_{it} + \beta_9 RISK_{it} + \beta_{10} PROF_{it} + \beta_{11} BOND_{it} + \beta_{12} STK_{it} + \beta_{13} GDPG_{it} + \varepsilon i \tag{1}$$

Where, DER, LTD, S.T.D., and TD ratios are examples of dependent variables, or CSit. The equation's constant term is 0 (zero). COR is an acronym for the Transparency International Corruption Perception Index, a recognized source. LAW = law is a gauge for how well a nation upholds the law and is rated by the international country risk index. Government Effectiveness is a metric of the "WGI" index and reflects the standard of the public and civil services as well as their independence from political pressure. Voice and Accountability refer to the degree to which state residents have the freedom to choose their leadership and availability of unrestricted media. The government indicator databank that quantifies the governing excellence of the state is known as "regulatory quality." Political stability is a gauge of how much illegal activity undermines the legitimacy of the elected administration. Natural log (natural) of the income from

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a firm's sale is size. TANGI, tangibility is equal to the firm's fixed assets divided by its total assets. Risk is the operational profit margin's percentage variation as a function of the firm's earning volatility. PROF is calculated as total assets divided by earnings before interest and taxes. Ratio of capitalization of public and private bonds to the G.D.P is known as the BOND. STK stands for G.D.P to stock market capitalization, Calculated as the total volume of stock transactions as a proportion to the G.D.P of the country. G.D.PG is the growth rate in the real Gross Domestic Product; ε_i is the error term of the equation.

4.   Resutls and Discussion

The empirical results i.e., Correlation Matrix, Descriptive Statistics, Pooled OLS, and fixed effect models are provided in the following tables.

Table 1
Summary Statistic

Variables	Obs.	Mean	Median	S.T.D.. Dev.	Min	Max
DER	2924	1.267	0.729	1.571	0.002	1.509
LTD	2924	0.136	0.082	0.155	0.001	0.663
S.T.D.	2924	0.389	0.366	0.210	0.030	1.121
TD	2924	0.309	0.293	0.238	0.001	0.937
Size	2924	15.436	15.402	1.758	9.965	19.142
TANGI	2924	0.468	0.468	0.226	0.020	0.944
RISK	2924	0.021	0.072	2.313	-15.700	8.195
PROF	2924	0.106	0.092	0.116	-0.193	0.491
BMD	2924	40.820	40.806	2.573	35.745	44.340
STK	2924	25.097	26.325	8.295	10.242	41.415
G.D.P	2924	4.528	4.731	1.705	1.607	7.667
COR	2924	18.739	18.932	3.929	13.171	25.758
LAW	2924	22.689	22.066	2.585	17.788	27.488
GE	2924	31.170	28.365	6.958	22.275	41.327
RQ	2924	27.672	28.846	3.862	17.734	34.314
PS	2924	2.579	1.429	2.200	0.300	7.538

Table 2
Pairwise Correlations & Variance Inflation Factor

Variables	DER	LTD	SD	TD	Size	TANGI	RISK	PROF	BMD	STK	G.D.P	COR	LAW	GE	RQ	PS	VIF
DER	1.00																2.00
LTD	0.55	1.00															3.16
S.T.D.	0.30	-0.07	1.00														1.85
TD	0.70	0.72	0.36	1.00													3.58
Size	-0.08	-0.13	0.05	-0.18	1.00												1.23
TANGI	0.29	0.52	-0.24	0.40	-0.17	1.00											1.59
RISK	0.02	0.01	-0.02	0.02	0.01	0.00	1.00										1.01
PROF	-0.36	-0.32	-0.23	-0.42	0.24	-0.27	-0.02	1.00									1.40
BMD	-0.01	0.02	-0.02	0.00	-0.02	0.00	-0.02	0.00	1.00								5.14
STK	-0.02	-0.00	-0.02	-0.01	0.00	-0.00	-0.01	0.01	0.80	1.00							5.95
G.D.P	-0.04	0.01	-0.01	-0.01	-0.06	-0.01	-0.00	0.03	0.54	0.67	1.00						4.02
COR	-0.02	-0.01	0.00	-0.00	0.01	-0.02	0.01	-0.02	0.36	0.05	0.14	1.00					2.48
LAW	-0.01	-0.01	0.02	0.00	-0.01	-0.00	0.02	-0.01	-0.18	-0.32	-0.07	0.45	1.00				1.64
GE	0.04	0.13	-0.03	0.06	-0.24	0.03	0.02	0.07	0.49	0.34	0.59	0.35	0.18	1.00			3.99
RQ	-0.00	-0.07	0.001	-0.02	0.14	-0.01	0.00	-0.03	0.16	0.26	-0.25	0.21	-0.01	-0.32	1.00		3.63
PS	0.04	0.13	-0.02	0.07	-0.23	0.04	0.02	0.04	0.14	-0.02	0.47	0.26	0.29	0.75	-0.66	1.00	5.52

The statistics for each dependent and independent variable are shown in Table 2. All of the variables' correlation coefficients are below the standard values of 0.9 Fidell et al. (1996) and 0.8 (Kennedy, 2003). All regressors have V.I.F. values that are less than 10. According to Baum (2006), Brooks (2019), and Fidell et al. (1996), this shows that the models don't have a multi-collinearity problem.

Table 3
Pooled Ordinary Least Square Regression Analyses

Variable	DER	LTD	STD	TD
Size	.061***	.005***	.012***	-0.001
	(.017)	(.001)	(.003)	(0.002)
TANGI	1.412***	.316***	-.295***	0.311***
	(.120)	(.012)	(.020)	(0.019)
RISK	.002	.010	-.002	0.000
	(.016)	(.002)	(.001)	(0.001)
PROF	-4.490***	-.297***	-.634***	-0.709***
	(.262)	(.022)	(.047)	(0.036)
BMD	-.023	-.002	-.000	-0.003
	(.022)	(.001)	(.003)	(0.003)
STK	.003	.020	-.004	0.001
	(.009)	(.030)	(.001)	(0.001)
G.D.P	-.100***	-.011***	.003	-0.012***
	(.031)	(.002)	(.004)	(0.004)
COR	-.021**	-.001*	-.001	-0.002
	(.010)	(.060)	(.001)	(0.001)
LAW	-.024*	-.003***	.009	-0.202
	(.012)	(.001)	(.061)	(0.001)
GE	.025***	.003***	.006	0.002***
	(.007)	(.001)	(.004)	(0.001)
RQ	.026**	.001	.002	0.002
	(.013)	(.001)	(.001)	(0.001)
PS	.072***	.009***	.001	0.011***
	(.027)	(.002)	(.003)	(0.004)
Cons	.697	.007	.428***	0.340***
	(.898)	(.078)	(.133)	(0.130)
Observations	2918	2918	2918	2918
F (12, 2860)	47.970	91.080	25.890	92.560
R-squared	.185	.337	.162	0.276
Prob > F	.000	.000	.000	0.000

Robust SE are in parentheses

*** p<.01, ** p<.05, * p<.1

Table 3 presents the Pooled OLS estimates of the 172 registered companies from 2002 to 2018.

4.1. Pooled OLS Analysis

The results of the pooled OLS are displayed in Table 3 Roodman (2009) for comparison with the random effect (RE) model based on the BPLM test. Tangibility, profitability, G.D.P growth, government efficiency, and political strength have all had a substantial impact on TD ratio. The coefficient values for all computed equations are accompanied with robust standard errors, which are derived as standard errors resilient to heteroskedasticity. While taking into

account the Pooled OLS's restrictions when using Panel data to measure the determinants. The FE/RE have been introduced to quantify effective results based on the BPLM test. The Pooled Ordinary Least Square regression analysis significance levels are *, **, ***, which represent ten percent, five percent, and one percent respectively.

Table 4
Breusch and Pagan (1980), Hausman (1978) Specification Test"

Statistical test	DER	LTD	STD	TD
B.P.L.M, chibar2(01)	515.810	3908.970	5647.570	8575.060
P-value	.000	.000	.000	.000
Hausman Chi^2 test	26.877	11.86	40.928	33.666
P-value	0.008	0.457	0.000	0.001

Results of the Hausman and BPLM tests are shown in Table 4. At 1% significance, BPLM test is applied to select variables in pooled OLS and random effects (Breusch & Pagan, 1980). All of the models' P-values are significant, thus RE may be employed in place of the Pooled OLS estimator. To include random effect against the fixed effect model, the Hausman statistical significance threshold is one percent *(Hausman, 1978)*. For DER, S.T.D., and TD, a fixed effect model is used with p values of 0.008, 0.000, and 0.001 correspondingly. Furthermore, the LTD Hausman value is 0.457, making the RE model applicable.

Table 5
FE and RE Models Analysis

Variables	DER	LTD	STD	TD
COR	-0.023***	-0.001**	-0.001	-0.001
	(0.008)	(0.000)	(0.001)	(0.009)
LAW	-0.023**	-0.003***	0.001	-0.009*
	(0.010)	(0.050)	(0.031)	(0.021)
GE	0.029***	0.003***	-0.006	0.002***
	(0.006)	(0.060)	(0.010)	(0.016)
RQ	0.023**	0.001	0.009	0.001
	(0.010)	(0.000)	(0.001)	(0.001)
PS	0.068***	0.009***	-0.002	0.006***
	(0.023)	(0.001)	(0.002)	(0.002)
Size	0.108***	0.002	-0.008*	-0.013***
	(0.038)	(0.002)	(0.004)	(0.004)
TANGI	0.458**	0.284***	-0.234***	0.175***
	(0.193)	(0.014)	(0.022)	(0.021)
RISK	-0.013	0.009	0.003	0.001
	(0.009)	(0.006)	(0.001)	(0.000)
PROF	-2.905***	-0.190***	-0.206***	-0.392***
	(0.275)	(0.022)	(0.032)	(0.029)
BMD	-0.028	-0.051	0.002	-0.002
	(0.018)	(0.001)	(0.002)	(0.001)
STK	0.005	0.000	-0.001*	0.006
	(0.007)	(0.006)	(0.007)	(0.005)
G.D.PG	-0.118***	-0.019***	0.005*	-0.010***
	(0.025)	(0.005)	(0.003)	(0.002)
Constant	0.471*	0.033*	0.588***	0.535***
	(0.874)	(0.079)	(0.108)	(0.093)
R-squared	0.064	0.193	0.057	0.156
Estimator	FE	RE	FE	FE
Observations	2,918	2,918	2,918	2,918

Note: S.E are in the parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 6
Tow-step system GMM Analysis

Variables	DER	LTD	S.T.D.	TD
DER	0.980***			
	(0.006)			
LTD		0.850***		
		(0.003)		
S.T.D.			0.907***	
			(0.034)	
TD				0.998***
				(0.003)
COR	0.005***	0.003***	-0.000***	0.000***
	(0.002)	(-0.006)	(0.000)	(0.000)
LAW	-0.010***	-0.004***	-0.000**	-0.000*
	(0.001)	-0.009	(0.000)	(0.000)
GE	0.004***	0.001***	-0.000***	-0.000
	(0.030)	(-0.003)	(0.000)	(0.000)
RQ	0.020***	-0.007	0.001***	0.000***
	(0.009)	(-0.008)	(0.000)	(0.000)
PS	0.039***	0.006	0.008***	0.001**
	(0.001)	(0.000)	(0.003)	(0.000)
Size	0.017***	0.001***	0.002***	0.000*
	(0.007)	(0.007)	(0.000)	(0.000)
TANGI	-0.210***	0.040***	-0.052***	-0.024***
	(0.013)	(0.003)	(0.003)	(0.003)
RISK	0.018***	-0.009	0.001***	0.002***
	(0.002)	(-0.008)	(0.000)	(0.000)
PROF	-0.931***	-0.080***	-0.190***	-0.120***
	(0.020)	(0.007)	(0.007)	(0.009)
BMD	-0.024***	0.009***	0.000**	0.001**
	(0.000)	(0.000)	(0.000)	(0.000)
STK	0.001***	-0.000***	0.000	0.000
	(0.001)	(-0.006)	(0.000)	(0.000)
G.D.P	-0.0120***	-0.008***	-0.002***	0.000
	(0.009)	(0.031)	(0.000)	(0.000)
Constant	-0.3605***	-0.0533***	0.0102	-0.0570***
	(0.037)	(0.004)	(0.015)	(0.017)
Observations	2,748	2,748	2,746	2,701
AR (1) P-value	0.000	0.000	0.000	0.000
AR (2) P-value	0.552	0.060	0.687	0.592
Sargen P-value	0.000	0.000	0.000	0.005
Hansen P-value	0.206	0.122	0.318	0.234
Observations	2,748	2,748	2,748	2,748

Note: SE values are in the parentheses, *** p<0.01, ** p<0.05, * p<0.

4.2. The Two-step System Generalized Method of Moment (GMM)

We used three estimating techniques—Pooled OLS, FE/RE, and GMM—to estimate the study equations. We used the Hausman specification test on each dependent variable—namely, the DER, LTD, S.T.D., and TD ratios—while maintaining the significance threshold at 1% to help us decide between the random (RE) and fixed effect (FE) econometric methodologies for the study equation.

The pooled OLS is estimated for comparison's sake (Roodman, 2009). Following that, researchers developed GMM estimation (Arellano & Bond, 1991; Blundell & Bond, 1998). When a panel data set has many (N) individuals and few (T) time periods as well as regressors weren't exogenous (i.e., they have a correlation with previous and present understanding of the error, auto-correlated, fixed, and heteroscedastic among the individuals), GMM estimations are

frequently used and appropriate. Because it is more effective, we used GMM estimator during the analysis as opposed to the GMM estimator (Chow, Muhammad, Bany-Ariffin, & Cheng, 2018).

The findings presented that corruption had a conflicted effect on the debt ratios in this research, having both positive and negative effects. An increase in the corruption index (lower corruption) suggests that businesses use equity instead of short-term indebtedness, according to a negative significant association between COR and S.T.D.. These findings validate the findings of other studies Apanisile and Olayiwola (2019); Jõeveer (2013) and lend credence to the pecking-order idea. In contrast, Fan, Titman, and Twite (2012) findings are consistent with the association between corruption and DER, LTD, and TD, which is significantly favorable. Here, it is simple to argue that total loans rise in nations with high corruption perception indices (reduced corruption). From this, it can be concluded that one of the most important macro-level elements that significantly influences a firm capital structure is the corruption control. Corruption has a negative impact on corporate operations. The more corruption there is, the more bribes businesses offer to obtain loans, that ultimately raises the cost of capital and lowers the debt-to-capital ratio (Belkhir, Maghyereh, & Awartani, 2016). According to the COR negative link with debts, businesses can use corruption as a strategy to get past banking restrictions and manage the loan needs, such as default risk and collateral. According to Fan et al. (2012), the relative importance of debt financing over equity financing rises the more corrupt the public sector is.

DER, LTD, S.T.D., and TD are all significantly and negatively correlated with LAW. It is assumed that the law index and debt ratios are negatively associated in countries with weak law and order enforcement. In contrast to nations with strict laws and order regulations, such as those in Latin America and Eastern Europe, the governance variables, such as stable politics, transparency, and rule of law, has a considerable beneficial impact on debt ratios (Adeneye, Kammoun, & Ab Wahab, 2023; Matemilola, Bany-Ariffin, Azman-Saini, & Nassir, 2019). Lenders are reluctant to advance loans to firms in Pakistan due to the country's lax law and order system and the accompanying risk of default. Investors tend to be less concerned about their investment in nations whose institutions and individuals uphold the law of the land (Belkhir et al., 2016). As stated by Adusei (2018) and Shen, Hasan, and Lin (2014) literature demonstrates how little political meddling occurs in these nations. Through improved law and order and government efficacy, companies in these nations provide their best work, which encourages performance.

The findings and Results of the current research show that the Government Effectiveness has a significant adverse connection with S.T.D. and has a significant positive association with the long-term debt to total assets ratio and debts to equity ratio. We discover a strong positive correlation between regulatory quality and DER, S.T.D., and TD. Literature demonstrates that in those nations with strong governance, banks are willing to make loans to businesses because the danger of default on their loans is low. Lenders don't charge a risk premium for the money they lend out. As a result, borrowing becomes less expensive. As a result, more debts are being financed using equity in a company's capital structure (Adusei, 2018; Ekpete & Iwedi, 2017).

Political instability shows whether governments use violence, such as terrorism or violence driven by politics or religion. The current study's findings regarding political stability indicate a favorable and significant relationship between DER, S.T.D., and TD ratios. These findings support those of the earlier studies (Adusei, 2018; Nazal, 2017). Kamran, bin Mohamed Arshad, and Omran (2019) looked into the relationship between Pakistan's banking sector's profitability (ROA & ROE) and political stability. The authors claim that a lack of law and order also has an adverse effect on profitability of the banking industry. According to Matemilola et al. (2019), a volatile and unpredictable business and economic environment reduces corporate activity, which ultimately has an adverse effect on the debt-to-income ratio.

The empirical findings of the current study's analysis of firms' SIZE are similarly positively significant when compared to DER, LTD, S.T.D., and TD. These results confirm those of prior studies Graham, Lemmon, and Schallheim (1998); Xu (2012) and are compatible with the trade-

off hypothesis. These results are consistent with research done more than 24 years ago by Graham et al. (1998), which found that large enterprises have better negotiating leverage and can more easily access the credit market at a discount.

Results of the current study on firms' tangibility show that there is a strong inverse link between DER, S.T.D., and TD. These results go counter to the "pecking-order and trade-off hypotheses" and are coherent with agency model, which forecasts a adverse link among the debt-to-asset ratio and tangible assets. According to the rationale, businesses with more physical assets have a higher potential for profitability and will ultimately use internal financing rather than borrowings. Theoretically, results of earlier researches Bayrakdaroglu, Ege, and Yazici (2013); Booth et al. (2001); Smith (2012) supported a significant negative association between tangibility and claimed indebtedness. The association between tangibility and LTD, on the other hand, is highly positive, showing that non-financial enterprises in Pakistan with significant possession of material assets are to be linked to a particularly reliable source of external financing. Accordingly, businesses with greater tangibility have a greater ability to borrow money from lenders over the long term (Hall, Hutchinson, & Michaelas, 2004; Sogorb-Mira, 2005).

The findings also show a substantial positive association between risk and DER, S.T.D., and TD. These results are coherent with the pecking-order theory's basic tenets. The reasoning behind it is that when earnings are volatile, investors want high returns, which increases the cost of issuing shares (Rajan & Zingales, 1995). Past research, such as that by Ariff and Luc (2008) and Deesomsak, Paudyal, and Pescetto (2004), has also validated these findings. However, in typical circumstances, a rise in earnings volatility will result in an increase in the risk of default on debt payments. This circumstance makes investors less willing to lend money and to negotiate loans at high risk premium prices, which has an adverse effect on debt ratios (Frank & Goyal, 2009). The trade-off hypothesis is therefore supported by these results.

The findings relating firm profitability show that DER, LTD, S.T.D., and TD have a negative relationship with it. These findings are harmonious with picking-order hypothesis and other earlier studies, such as those by Booth et al. (2001), Rajan and Zingales (1996) and Titman and Wessels (1988). The adverse link suggests that non-financial businesses prefer using internal finance rather than seeking out loans from lenders and banks in Pakistan. This indicates that a rise in profitability results in a rise in the amount of cash coming into the business to finance its operations. The ratio of debts decreases as a result of this circumstance.

The study also sought to determine the extent to which LTD, S.T.D., and TD positively correlated with bond market development (BMD). The present empirical findings concur with those made by De Jong, Kabir, and Nguyen (2008). These writers contend that when the issue and trading of bonds are simple, it enables the flow of funding lending at cheap cost, stimulating the debt ratios. In contrast, the BOND-related outcomes have a strong inverse relationship with DER. The outcomes here agree with the findings of Kayo and Kimura (2011) investigation.

The outcomes of stock market development (STK) have been conflicting. These findings are negatively significant when it comes to LTD ratios. These findings propose that as the ratio of stock market capitalization to G.D.P rises, so does the preference of the firm for equity financing over debt financing, supporting the pecking-order theory. It emphasizes the value of choosing firm loans and equity in line with other studies' conclusions (Demirgüç-Kunt & Maksimovic, 1996; Nor, Haron, Ibrahim, Ibrahim, & Alias, 2011). But on the other hand, according to Kayo and Kimura (2011), the STK has a strong positive relationship with DER, supporting the earlier findings. Here, we uncover evidence that the trade-off hypothesis is validated. Finally, it has been discovered that the growth rate of the real G.D.P has a detrimentally significant effect on DER, LTD, and S.T.D.. These results support the conclusions of earlier studies (Kayo & Kimura, 2011). This indicates that a low real G.D.P growth rate in Pakistan encourages non-financial companies to raise borrowed capital. In this context,

academics Bukair (2019) claimed that rising real G.D.P improves residents' quality of life and well-being, which also happens to stimulate equity investment prospects.

No correlation is observed in the approximation of GMM, according to the estimated findings of the AR(1) and AR(2) values (Arellano & Bond, 1991). The instruments are valid, according to the Sargan and Hansen statistics, test for over identified restriction P-value (Hansen, 1982).

5. Conclusion

The literature claims that capital structure is significantly influenced by internal factors of the firm as well as external environment. For verification and validation of these findings and to see as to what extent the institutional and macro-environmental factors affect capital structure, this study was undertaken on PSX registered non-financial for the time period 2002-18, for which Panel data were collected from 172 firms.

The four capital structure proxies—DER, LTD, S.T.D., and TD ratios—were each used in this analysis. The constraints of the previously described econometrics methodologies, namely Pooled OLS and RE/FE, were taken into consideration when this study employed the Pooled OLS, EF/RE, and lastly the two-step system GMM. Statistical tests suggest, the estimation and deployment of appropriate approaches that the two-step system GMM has been chosen.

Results of the two-step system GMM demonstrate a substantial among the institutional and firm level variables on capital structure of the non-financial Pakistani listed firms. Findings of current research demonstrate that, the capital structure in Pakistan is largely affected by institutional factors at the macro level as well as firm-specific factors. As a result, when selecting the capital structure, the manager may need to take into account institutional and macroeconomic considerations in addition to firm-level factors.

5.1. Policy Recommendation

There are many stakeholders associated with this research that are directly or indirectly to be benefited from. The corporates financial managers can take direction to raise their debts structure of the corporation. The bank managers can minimize their default risk associated with their lending's. The potential investors can make a rational investment decision while taking the firm's capital structure in concentrations that how much a firm is sound. The government may formulate policies while taking these factors of governance that has a direct impact on the capital structure of the firm.

5.2. Limitations of the Research

The study is limited to the non-financial sector 172 Pakistani registered firms. Future research may be conducted through adding variables, maximized the duration of the research, adding more firms in the sample and may be based on other sectors as well.

5.3. Future research

This research only focused on the non-financial sectors companies, based on secondary data, doesn't accumulate the financial listed companies and the small and medium enterprises and only for a specific period of 17 years 2002-18. Future research is strongly recommended by the authors to investigate the determinants in details covering more aspects related to the topic.

Authors' Contribution
Wali Rahman: Complete the draft.
Saif ur Rehman: Supervise the student and proofread the draft.

Conflict of Interests/Disclosures
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