Financial Market Evolution and Corporate Finance Strategies in Pakistan

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Abstract

This study examines the nexus between stock market growth, as measured by total market capitalization, and corporate finance dynamics within the context of Pakistan. The empirical findings of this study support the assertion that stock market expansion facilitates enhanced access to equity capital for firms operating in Pakistan. This is represented by an increasing trend in the reliance of the average Pakistani firm on external equity as a component of its capital structure. In quantifiable terms, our analysis spanning the years 2000 to 2022 reveals an annual increment of 0.8 percentage points in the external-equity-to-assets ratio for the average Pakistani firm, coupled with a simultaneous annual reduction of 0.3 percentage points in the debt-to-assets ratio. This evidence of substitution of equity for debt is consistent with the view that stock market development matters to corporate finance or that stock market development matters more to corporate finance more than debt market development does. Furthermore, this study sheds light on the relevance of conventional determinants of capital structure. Notably, factors such as profitability, firm size, market-to-book ratio, and tangibility continue to exert influence in shaping firms' capital structure decisions, as established in prior corporate finance research.

Keywords: Pakistan, equity issuance, investments, financing, capital structure

How does stock market development influence corporate finance behavior? In this study, we attempt to uncover evidence that stock market development influences Pakistani firms' financing behavior and the composition of those firms' capital structure. Over recent decades, scholars have examined the relevance of a variety of country-level factors—including the legal system, investor protection, culture, religion and so on—to corporate finance issues. The majority of these studies, however, do not consider the link between stock market development and corporate finance behavior (McLean, Zhang and Zhao, 2012).

The key premise of this study is that stock market development, as measured by the growth in the stock market's total market capitalization over time, makes equity financing easier or less costly for corporations. We hypothesize that improved access to equity financing helps firms to raise equity capital more often and, as a result, firms' capital structure contains substantially more equity capital with stock market development. However, we must consider an additional force that influences corporate financing behavior before we hastily accept this prediction as valid. Stock market development is typically accompanied by debt market development (e.g., Beck, Demirgüç-Kunt and Levine (2010)). The growth of a country's debt market can ease firms' access to debt financing over time and, as a result, firms may increase the use of debt in their capital structure. So when both stock and debt markets grow over time in a country, it is uncertain whether firms increase the use of equity vs. debt. Therefore, it is an empirical question whether firms increase the relative use of equity or debt, as a country's stock market and debt market expand in size and depth over time. This question is related to a much larger question that which of the two forms of financial market development—stock market development and debt market development—matters more to corporate finance (e.g., Demirgüç-Kunt, Feyen and Levine (2013)). This study examines the period 2000-2022 in which the stock market in Pakistan experiences stellar growth. We document the changes in corporate finance behavior, particularly in the propensity to issue equity, and in the leverage ratio.

This paper is organized as follows. Section 2 introduces Pakistan's economy and stock market. Section 3 provides a summary of related studies. Section 4 describes the construction of our

dataset, key variables, and our research hypotheses. Section 5 reports the results of the empirical analysis. Section 6 concludes the paper.
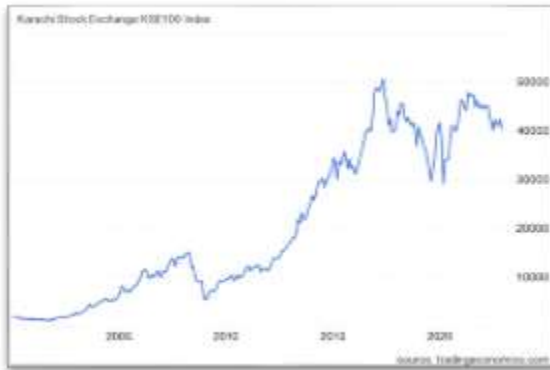
Pakistan Stock Exchange

The Pakistan Stock Exchange (PSX) stands as a dynamic and integral component of Pakistan's financial landscape, serving as a cornerstone for investment, capital formation, and economic growth within the country. PSX Established through the merger of three stock exchanges in 2016 – the Karachi Stock Exchange (KSE), Islamabad Stock Exchange (ISE) and Lahore Stock Exchange (LSE)– the PSX represents a unified and consolidated platform that facilitates the trading of a diverse range of securities, including stocks, bonds, and derivatives. This amalgamation marked a pivotal moment in Pakistan's financial history, heralding a new era of efficiency, transparency, and accessibility in the nation's capital markets.

Figure 1 illustrates growth in Pakistan stock exchange benchmark index called KSE-100. KSE-100 index was introduced in 1991 with a base value of 100 points that hit 12,285 points by February 2007. In April 2008, when the global economy was facing financial crisis KSE-100 index surge to its highest ever of 15737.32. Moreover, Pakistan stock exchange became the best performer among emerging markets with 7.4 percent increase in 2008. In May 2008, there was record inflation, which pushed State Bank of Pakistan (SBP) to increase interests' rates that eventually results in a steep plunge in the stock exchange. In July 2008, KSE 100 index dropped one-third, and desperately SECP set a floor for stock prices to halt. Stock exchange remained closed for few days, which persuaded MSCI to exclude Pakistan from MSCI emerging markets. The market showed a quick recovery in 2009-2010 and reached all time high again in 2012 with 16,218 points and gets the title of the best-emerging market in Asia with returns up to 40-50% in the financial year of 2011-2012. KSE-100 registered another 45.2% increase in 2013-2014 fiscal year with a new height of 28,913 points. Pakistan stock exchange delivered 26% per year between 2009 -2015 and was among the world's best-performing stock markets.

Figure 1.

History of PSX

The Pakistan Stock Exchange (PSX) exhibited noteworthy performance during the year 2015, positioning itself among the top 10 global stock exchanges with an impressive annual yield of 26% for investors denominated in United States Dollars. Subsequently, in 2016, the KSE-100 index demonstrated remarkable growth, attaining a gain of approximately 46%, thereby significantly surpassing its contemporaries. Over the span of five years, the PSX continued its upward trajectory, exhibiting an extraordinary surge of 321%. In contrast, the Morgan Stanley Emerging Market Index experienced a decline of 7.72% over the same duration. This period of growth reached its peak in May 2017 when the KSE-100 index registered 52,387.38 trading points and secured reclassification to the MSCI Emerging Markets category. Regrettably, the PSX was prone to the adverse effects of political instability and closure of business under the influence Covid-19 which resulted in a severe contraction of the market, causing the index to plummet to a mere 30,000 points. However, in subsequent periods, the exchange demonstrated resilience by staging a recovery, and attained exceeded 40,000 points in the end of 2022.

This succinct historical overview of the Pakistan Stock Exchange underscores a sustained and commendable performance trajectory, thereby promising an ideal backdrop for researchers endeavoring to investigate the evolving dynamics of corporate finance behavior over time. Notably,

the recent period has been marked by a substantial augmentation in the market capitalization of the Pakistan Stock Exchange, thereby providing firms with ample financing alternatives.

Research Question 1: Whether the stock market growth increase the use of equity and debt?
Research Objective 1:To examine the link between stock market growth and financing patterns in listed Pakistani firms over the period of 2000 to 2022.

Literature Review and Hypothesis Development

Capital structure is a critical concept in corporate finance, representing the mix of debt and equity a company employs to fund its operations and growth. The recent debate on capital structure began with seminal work of Modigliani and Miller (1958, 1963) which postulates that value of firm is independent of capital structure when taxes and bankruptcy is not possible. However, these assumptions were not realistic. To answer this shortcoming Myers (1984) proposed the trade-off theory which considers both tax benefits and bankruptcy cost of debt and suggests the existence of optimal capital structure point which maximizes the wealth of shareholders. Lemmon and Zender (2010) find evidence in support of trade-off theory and show that firms keep adjusting their capital structure towards their target capital structure over time.

Myers and Majluf (1984) tried to explain the capital structure by providing an order in financing choices. They suggest firms first use the internal finances, then debt which external equity as the last resort. This theory is called pecking order theory which dictates the choice of financing on the basis of cost, cheaper source first and the most expensive source in the end.

Much work has been done to show which factors determine the capital structure of firms. Harris and Raviv (1990), Harris and Raviv (1991), Bradley, Jarrell and Kim (1984) and Rajan and Zingales (1995) have found tangibility, growth opportunities, size, and profitability to be highly correlated with cross-sectional leverage in the United States and other countries. More recently, Booth, Aivazian, Demirgüç-Kunt and Maksimovic (2001), Frank and Goyal (2009) and Ahmed Sheikh and Wang (2011) check the similar determinants in developing countries and found consistent findings. We restrict our research to these factors only and check whether these factors are correlated to leverage and equity in Pakistan stock exchange.

Determinants of Capital Structure

Tangible assets can act as collateral and stable source of internally generated returns; therefore, we expect a positive relationship with leverage (Chen, 2004; Degryse, Goeij and Kappert, 2012; Frank and Goyal, 2009; Hall, Hutchinson and Michaelas, 2004; Harris and Raviv, 1990, 1991; Rajan and Zingales, 1995; Scott, 1977; Serrasqueiro and Rogão, 2009; Wald, 1999). On the other side, agency perspective suggests a negative relation of leverage with tangible assets for firms which have less collateralizable assets. In these firms, managers tend to use excessive perquisites which motivate firms to accumulate more debt to monitor managers. Some of the notable scholars suggesting negative relations are Ferri and Jones (1979), Titman and Wessels (1988), Booth et al. (2001) and Sheikh and Wang (2011).

Myers (1977) found highly levered firms to pass up profitable opportunities. Therefore, the trade-off theory suggests lower debt ratios and higher equity financing for firms with higher future growth opportunities and higher. An extensive literature predicts negative relation of growth opportunities with leverage. Rajan and Zingales (1995), Barclay and Smith (1999), Wald (1999) and Frank and Goyal (2009) find the negative relation of growth opportunities with leverage. On the other side, pecking order theory suggests a positive relation of growth opportunities with leverage because firms with growth opportunities are more likely to invest in suboptimal projects and need extra funding. Michaelas, Chittenden and Poutziouris (1999) find that firms with growth opportunities are more likely to exhaust their internal funds and require external financing to meet their needs. Therefore, relation of growth opportunities can be negative or positive.

The trade-off theory suggests higher debt ratios for larger firms because they have lower agency cost of debt. Additionally, they are diversified and less likely to fail. Diverse literature (Sheikh and Wang, 2011; Booth et al., 2001; Flannery and Rangan, 2006; Frank and Goyal, 2009; Rajan and Zingales, 1995; Titman and Wessels, 1988; Wald, 1999) find the positive relation of size and leverage. The pecking order theory suggests a negative relation between size and leverage because big firms are less opaque, and the issue of asymmetric information is less severe so they should prefer equity over debt. Chen (2004) shows a negative relation between size and long-term debt using a sample of Chinese firms.

Profitability helps to build the internal funds which can be used to invest, and if pecking order theory is true then profitability should be negatively related to leverage (Sheikh and Wang,

2011; Booth et al., 2001; Chen, 2004; Frank and Goyal, 2009; Harris and Raviv, 1991; Rajan and Zingales, 1995; Serrasqueiro and Rogão, 2009; Titman and Wessels, 1988; Wald, 1999). On the contrary, trade-off theory highlights tax benefits of debt and supplier's willingness to lend more to profitable firms predict higher debt ratios for profitable firms.

Stock Market Development and Propensity to Issue Equity

Financial system development eases external financing constraints (Levine, 2005), and reduce the costs of acquiring and processing information, which helps in better resource allocation (Boyd and Prescott, 1986), reduce agency problem by external monitoring (Diamond and Verrecchia, 1982), lowering information asymmetries (Holden and Subrahmanyam, 1992, 1994), increasing investor base and liquidity (Merton, 1987) and decreasing in cost of equity (Kim, Ma and Wang, 2015), thereby motivating firms to use more equity financing. Demirgüç-Kunt and Maksimovic (1996) use data from thirty countries to show a substitution of equity for debt in developed markets, however, in developing markets, a higher debt level during initial stock market development. Brown, Martinsson and Petersen (2013) use international data to show law and capital market development increase external equity financing particularly for risky and intangible investments which find hard to avail debt. Hsu, Tian and Xu (2014) find higher technical innovation in developed capital markets especially for those industries which are more dependent on external financing.

The above literature reveals that stock market development reduces the cost of equity, which in turn induces firms to use more equity financing (and less debt financing). We test following hypothesis using a sample of publicly listed Pakistani firms over the period of 2000 to 2022.

H_1: *The propensity to issue equity increases over time.*
H_1: *The proportion of external equity in capital structure increases over time.*
H_1: *The use of debt, as measured by the book debt ratio, decreases over time.*

Research Methodology

The sample of this research collected data of publicly listed Pakistani firms from Compustat Global - Fundamentals Annual, except for Share price and number of shares outstanding, which are extracted from Compustat Global - Security Daily; both of these data files are provided by Wharton Research data services (WRDS). A complete list of variables' definitions and sources is provided in Appendix A1. This paper covers a period of 23 years from 2000 to 2022 and all the delisted firms are also included in the sample. Our sample starts with only 212 firms in 2000 which crossed 400 in 2008 and survive till the end of our study period. Overall, a total of 454 firms is utilized from different sectors of the economy. We rely on World Bank data for macroeconomic variables, e.g., Real GDP growth, Inflation, and industrial structure.

One of our key focuses is to check whether firms are issuing more equity as the stock market develops over time. The limited dependent variable logistic regression model is used to estimate the following equation:

$$Equity\ Issuer = \alpha + \beta_1(ROA) + \beta_2(Size) + \beta_3(M/B) + \\ \beta_4(Tangibility) + \beta_5(Leverage) + \beta_6(Time) \qquad (1)$$

The dependent variable equity issuer is dichotomous. A firm is equity issuer and takes the value of 1 in a period if its external equity increase exceeds 5 percent of the lagged assets, otherwise zero. We use a standard set of firm-level variables, including size (ln (Total Assets), M/B (the market to book ratio), tangibility (Fixed assets/total asset) and leverage (total debt / total assets), as explanatory variable. These variables are those that previous literature finds important in a decision to issuing equity. The last variable Time captures the propensity of equity issuance by firms with time. It represents a yearly period of data and takes the value of one for the first year (2000=1) and two for the second year (2001=2) and so on. We expect a positive loading on time variable if firms increase their equity issuance with stock exchange development.

The second set of regression equations predicts use of external equity *(H2)* and leverage *(H3)* over time using pooled OLS regression in equation 2 and equation 3 respectively. We use four firm-level determinants of Rajan and Zingales (1995) with time drift in equation 2 and 3 for external equity and leverage respectively estimation.

$$External\ Equity = \alpha + \beta_1(ROA) + \beta_2(Size) + \beta_3(M/B) + \beta_4(Tangibility) + \beta_5(Time) + \varepsilon_i \quad (2)$$

$$Leverage \ = \ \alpha + \beta_1(ROA) + \beta_2(Size) + \beta_3(M/B) + \beta_4(Tangibility) + \beta_5(Time) + \varepsilon_i \qquad (3)$$

In equation 2 external equity (external equity/total assets) while in equation 3 leverage (total debt/ total assets) is used as dependent variable. The standard firm-level variables are same as Rajan and Zingales (1995) except for time variables which capture the increase or decrease in the proportion of external equity or leverage over time. It is expected to see a positive (negative) estimation of time variable for equity issuance (leverage) because as the market develops firms shift their reliance on equity from debt-to-equity financing.

Data Analysis and Results

Table 1 reports aggregated firm-level characteristics for our sample covering the period from 2000 to 2022. All the variables have been winsorized at 1% level from top and bottom to eliminate outliers. The two most important variables of interests are leverage and external equity which are also presented in charts (figure 2). On average (median) firms have the leverage of 13.93 (6.85) percent which remains in a range of 4.00 to 84.10% with 0.18 standard deviation. The average firm holds almost double the leverage of the median firm. The Leverage graph in Figure 2, shows a continued increasing trend in the use of leverage from 2000 to 2008 and then a decreasing trend due to the financial crisis. The average (median) Pakistani firm uses 27% (18.36%) external equity which lies in the range of 1.30% to 152.54% with a low standard deviation of 0.27.

Table 1
Descriptive Statistics

Variables	N	Mean	Median	Std.	Min	Max
Size	6531	7.8391	7.7020	1.9863	4.2024	13.1456
M/B	6531	0.9272	1.0000	0.6193	0.0667	4.6656
Tangibility	6531	0.3542	0.3555	0.2745	0.0001	0.9197
Leverage	6531	0.1393	0.0685	0.1806	0.0004	0.8410
External equity	6531	0.2713	0.1836	0.2733	0.0130	1.5254
ROA	6531	0.1020	0.1034	0.1340	-0.2274	0.4615

This table reports summary statistics of annual variables for Pakistani firms from 2000 to 2022. Listed variables are defined in Appendix A1.

In other listed variables the average (median) firm size is 7.839 (7.702) with a minimum of 4.202 and maximum of 13.146. The market to book ratio (M/B) has a mean (median) of 0.927 (1.00) and ranges from 0.067 to 4.666. The market to book ratio shows a higher book value of equity than the market value of equity, which suggests poor growth opportunities. The tangibility ratio reveals that around 35% of total assets are property, plant, and equipment which lies in the range of 0 to 91%. A zero value of tangibility is evident due to the presence of high-tech and financial firms which do not need any fixed asset. On average firms are earning 10.20 percent return on assets with a minimum value of -22.74% and a maximum of 46.15%. All the variables have a low standard deviation of under 2 which signals a largely homogenous sample. A total of 6531 annual observations are used in this table.

Figure 2 plots the mean and median values of the external equity-to-total assets ratio and the total debt-to-total asset ratio for our sample firms over the 2000-2022 period. The graph on the right shows that our sample firms' use of external equity remains at a relatively low level and within a tight range until the year 2006, after which the use of external equity makes a gradual but substantial ascension to higher levels. The average value of external equity exhibits a modest decline from 28 percent in 2000 to 25 percent in 2006. Subsequently, there is a notable exponential surge, reaching over 50 percent by 2015, followed by a sudden drop to approximately 40 percent. Since that point, there has been a consistent and gradual increase. The median value of the external equity-to-total assets reaches 28 percent in 2019 from 15 percent in 2006, after which it decreased a little in COVID-19 period and again started to rise in 2021 and 2022. In contrast, the graph on the left shows that the use of debt tends to gradually drop in the latter half of the sample period, whereas it tends to climb in the first half gradually. In sum, these patterns from the two graphs raise the possibility that the average Pakistani firm in our sample substitute external equity for debt in the second portion of the sample period. In other words, it appears that the use of external equity (or

equity issuance) becomes more common (vis-à-vis the use of debt) for Pakistani firms in the latter half of the period. We suspect that the increased popularity of external equity has to do with the expansion of the stock market over that period.

We further breakdown the sample firms into Fama-French 12 industry classification and reported mean values for important variables in Table 2. Notably, the largest segment within the sample is comprised of nondurable consumer goods, accounting for 37.24% of the total market capitalization, followed by financial sector with 18.3% and manufacturing industries which roughly accounts for 17% of total market capitalization. The chemical industry holds 7.7% of the total market. The other notable industries are durable consumer, utilities, and others which individually hold little

Figure 1.

Time series plot of external equity and leverage
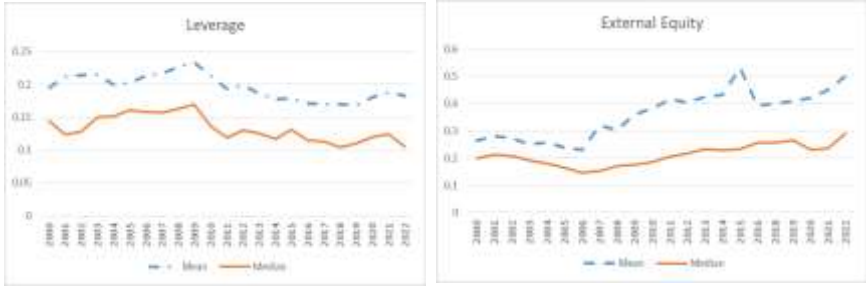
more than 3% of the market. The average firm size is almost same in all industries muddle between 6.96 to 9.73. The healthcare and chemical industry reports a high market to book ratio of 1.33 and 1.06 respectively while others are restricted under 1. As expected, financial firms maintain a shallow level of fixed assets (7%). The wholesale and retail industry use only 2% of leverage while utilities are highly levered with 20%. The firms categorized as others use 37% of external equity followed by telecommunication (35%), financials (34%) and manufacturing (30%). The healthcare industry is a winner in return on asset numbers with 19% returns while financials and utilities are providing only 0.07% return.

Table 2

Sample breakdown by industry

Industry	N	MC (%)	Size	M/B	Tangibility	Leverage	External Equity	ROA
Consumer non-durable	2150	37.24	7.34	0.91	0.47	0.14	0.22	0.10
Consumer Durable	243	3.87	7.74	0.85	0.31	0.06	0.21	0.14
Manufacturing	985	17.03	7.80	0.85	0.48	0.16	0.30	0.11
Energy	172	3.18	9.73	0.82	0.27	0.04	0.14	0.17
Chemicals	595	7.70	7.84	1.06	0.44	0.13	0.29	0.14
Business Equipment	89	1.61	6.97	0.75	0.32	0.06	0.22	0.14
Telecommunication	89	1.37	9.32	0.89	0.47	0.12	0.35	0.14
Utilities	165	3.05	9.05	0.84	0.55	0.20	0.22	0.07
Wholesale and retails	50	0.74	8.59	0.89	0.15	0.02	0.15	0.15
Healthcare	182	2.28	7.49	1.33	0.33	0.04	0.22	0.19
Money	1579	18.3	8.10	0.96	0.07	0.16	0.34	0.07
Others	232	3.63	8.57	0.79	0.48	0.16	0.37	0.08

This table presents the mean distribution by Fama-French 12 industry classification system. The sample comprises 6532 annual observations representing 456 unique firms from 2000 to 2022 for Pakistani firms. N is firm years, MC is the share of each industry in total market capitalization, and other variables are defined in Appendix A1.

Table 3 presents logistic regression results of firm's odd of issuing equity as dependent variables on a and a set of explanatory variables identified in the literature to explain firms' decisions to issue equity. The main aims are to check which factors are important in determining equity issuance decisions and does equity issuance incidents increase with time for Pakistani firms. A total of 4706 firm years are used which includes a fair number of 1046 incidents of equity issuance. Column 1 shows that firms are less likely to issue external equity if they are highly profitable, highly levered

and have the high market to book values while the firms are more likely to issue equity if they have high tangible while the size seems to be unrelated with equity issuance decisions. The results in column 2 are in line with column 1, and additional time variable is positively related to equity issuance decisions, which means firms increases their propensity to issue equity with times.

Table 3
Logit regression of equity issuance decision

	Dependent variable: Log odd of issuing equity	
	(1)	(2)
Intercept	-1.426***	-1.770***
	(0.21)	(0.22)
ROA	-1.238***	-1.016***
	(0.29)	(0.28)
Size	0.017	-0.019
	(0.02)	(0.02)
MB	-0.263***	-0.155**
	(0.09)	(0.08)
Tangibility	0.543***	0.475***
	(0.15)	(0.15)
Leverage	-0.678***	-0.652***
	(0.22)	(0.218)
Time		0.036***
		(0.01)
Industry FE	Yes	Yes
Intercept	-1.426***	-1.770***
N	4706	4706
Likelihood Ratio	50.34***	72.86***
R-Square	0.018	0.025

*This table reports results of firm's equity issuance decisions for firms listed on Pakistan stock exchange limited, from 2000 to 2022. The dependent variable is the dummy variable that takes the value of 1 if a firm issues equity and 0 otherwise. A firm is an equity issuer in a given year, if the increase in its external equity exceeds 5 percent of lagged assets. Variable definitions are provided in Appendix A1. The standard errors are provided in parenthesis and *, ** and *** mark significance level at 10%, 5%, and 1% respectively.*

Interestingly, highly levered firms have less propensity to issue equity which implies that may be firms substituted equity with debt over the period if this is the case we expect firms level of equity should increase while the level of debt must decrease over time. In table 4, we present the regression results using external equity and leverage as dependent variables in column 1 and two respectively, and independent variables are Rajan and Zingales (1995) plus time variables which capture the use of leverage and equity over time. In column 1 return on asset and size are negatively associated with external equity, which means bigger and more profitable firms rely less on external equity as a mode of financing their ventures. More profitable firms usually have ample internal resources and do not require external funds is consistent with pecking order theory. Market to book ratio and tangibility are positively associated with the level of external equity, which suggests a higher external equity financing for fixed assets and growth opportunities. Time shows a positive significant coefficient of 0.008 which means on average there is about 0.8% per year increase in the use of external equity to fund investment opportunities. On average this model can explain about 11.5% of the cross-sectional variation in external equity use.

Column 2 of Table 4 shows a highly significant and negative association of return on asset with leverage, which suggests that more profitable firms rely less on leverage to finance their investments which are consistent with preference order pecking order theory as firms prefer internal funds over external funds. Size, the market-to-book ratio and tangibility are positively related to leverage, which is evident because firms which are bigger, growing and hold sufficient tangible assets, can raise more external debt. Our results for profitability, tangibility, and size are consistent with the international evidence (see Rajan and Zingales (1995)). The evidence on the market to book ratio resembles Michaelas, Chittenden and Poutziouris (1999), which suggests higher leverage for growth firms

because they take on suboptimal investment projects. Time shows a significant negative coefficient of 0.003 which means that on average there is about 0.3% per year decrease in the use of debt to fund investment opportunities. On average this model can explain about 16.8% of the cross-sectional variation in debt use.

Table 4

Capital structure regression

Variables	(1)	(2)
	External equity	Leverage
Intercept	0.426***	0.025***
	(28.78)	(2.62)
ROA	-0.061***	-0.276***
	(-2.35)	(-16.22)
Size	-0.044***	0.010***
	(-24.99)	(8.59)
M/B	0.033***	0.035***
	(5.96)	(9.55)
Tangibility	0.148***	0.209***
	(12.58)	(27.17)
Time	0.008***	-0.003***
	(12.93)	(-7.16)
Root MSE	0.257	0.168
F	169.54***	208.22***
R^2	0.115	0.138
Adjusted R^2	0.114	0.137
N	6131	6531

*This table reports results of regressions of the external equity-to-total assets ratio in Column (1) and the book-debt ratio in Column (2) on key firm characteristics. The sample includes firms listed on PSX limited over the period of 2000 to 2022. All the variables are defined in Appendix A1. The numbers in parenthesis are t-values and *, ** and *** mark significance level at 10%, 5%, and 1% respectively.*

Discussion and Implications

The empirical findings presented in Tables 3 and 4 offer significant insights into the financing decisions of Pakistani firms. The negative associations between equity issuance and profitability, leverage, and market-to-book values align with established pecking order theory, reflecting a preference for internal financing among more profitable and leveraged firms. The positive relationship between tangibility and equity issuance underscores the role of external equity in financing fixed assets and growth opportunities. The temporal increase in equity issuance suggests firms' adaptive responses to evolving market conditions. Additionally, the intriguing negative association between leverage and equity issuance indicates a potential substitution effect between equity and debt over time, highlighting the dynamic nature of capital structure adjustments in the corporate landscape. Overall, these results contribute to the existing literature on corporate finance, providing nuanced insights into the factors influencing equity issuance and the interplay between equity and debt in the capital structure decisions of Pakistani firms.

The implications of the aforementioned results are substantial for both academia and practitioners. For researchers, these findings contribute to the refinement and validation of existing theories, such as the pecking order theory, in the context of emerging markets like Pakistan. The observed substitution effect between equity and debt underscores the importance of considering the interconnectedness of financing instruments over time. Practically, the insights can guide policymakers, financial analysts, and corporate decision-makers in understanding the key drivers of equity issuance and leverage decisions. Firms may benefit from recognizing the impact of profitability, size, tangibility, and market-to-book ratio on their financing choices, enabling them to make informed decisions that align with their financial goals and market dynamics. Policymakers

could use these insights to formulate strategies that support the efficient allocation of capital and enhance the financial stability of the corporate sector in emerging economies.

Conclusion and Future Research Directions

In conclusion, this paper examined a sample of Pakistani firms which revealed several noteworthy findings. Overall findings reaffirmed the importance of previously identified determinants of capital structure, including factors such as market-to-book ratio, firm size, asset tangibility, and profitability that continue to exert significant effect on the capital structure choices of Pakistani firms.

Furthermore, this research highlights a compelling relationship between stock market expansion and Pakistani firms' financing behavior. Notably, a substantial surge is observed in equity issuance by Pakistani firms, particularly after the year 2006, coinciding with the stock market growth. Over the course of the sample period, a consistent upward trend is documented in firms' inclination to raise external equity, indicative of an evolving financial landscape. Moreover, analysis reveals a gradual yet significant transformation in the composition of the firm's capital structure, characterized by a rising proportion of external equity and a corresponding decline in debt. These trends suggest a pronounced inclination among Pakistani firms to substitute equity for debt, a phenomenon stimulated by the positive influence of stock market development.

In summation, findings of this study provide evidence that the expansion of the stock market enhances firms' access to external equity, subsequently driving shifts in their financing preferences. These findings suggest that stock market growth improves firms' access to external equity and thus induces firms to substitute equity for debt. These observations add to evidence that stock market development influences corporate financing behavior.

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Appendix A1. Key variable and data sources

All the key variables are collected from Compustat Global - Fundamentals Annual, except for Share price and number of shares outstanding which are extracted from Compustat Global - Security Daily; both of these data files are provided by Wharton Research data services (WRDS). The details of all the variables and their calculations is given below.

Variables	Definitions
Size	Natural Log of Total asset
M/B	Total asset – Book value of Equity + Market value of equity /Total Asset Where Market value of equity = Share price multiplied by shares outstanding
Tangibility	Property, Plants, and Equipment / Total Asset
Leverage	Short-term debt + Long-term debt / Total Asset
External equity	Common Equity – Retained Earnings
ROA	EBITDA/Total Asset Where EBITDA = Depreciation and Amortization + Interest Expense + Income Before Extraordinary Items
Equity Issuer	Equity Issuer is a dummy variable and takes the value of 1 if the firm issues equity and 0 otherwise. A firm is an equity issuer if; External equity increase$_{(t)}$ > 5% of Total asset$_{(t-1)}$
Time	Time variable represents a yearly period of data. Time takes the value of one for the first year (2000=1) and two for the second year (2001=2) and so on. (2000=1, 2001=2, 2002=3,.........,2021=22, 2022=23)