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Financial Development and Firm Leverage in Pakistan: Conventional and Islamic Perspectives

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Abstract

This study aims to explore the impact of Islamic versus conventional finance development on corporate capital structure, including both leverage and debt maturity, in Pakistan. For this purpose, annual data for the period 2010-2020 was extracted. The final sample comprised 325 non-financial firms listed on Pakistan Stock Exchange (PSX). To estimate the impact of Islamic versus conventional finance development on firm leverage and debt maturity, OLS and fixed-effects regression models were used. The findings were confirmed using a battery of robustness checks. The current study demonstrates that stock market development negatively impacts leverage, while conventional bank development is positively linked with leverage. Furthermore, overall development in Islamic finance (Islamic bank and *Sukuk* market development) is positively linked with leverage and debt maturity. In contrast, conventional finance development is inversely linked with debt maturity. Collectively, the results support the impact of Islamic finance supply-side factors on firms' capital structure decisions.

***Keywords*:** banking sector, capital structure, conventional finance, debt maturity, financial development, Islamic bank, Islamic finance, *Sukuk*

Introduction

The motivation for this study is the extant literature which documents that financial development comprising stock market and banking sector development plays a promising role in firms' leverage decision (Antzoulatos et al., 2016; Graham & Narasimhan, 2004; Graham et al., 2015; Lemmon & Roberts, 2010; Leary, 2009) and debt maturity (Fan et al., 2012). These studies share interesting findings regarding how financial development affects firms' leverage policy and debt maturity; however, their implications are limited to U.S. and other developed markets (such as, UK, JAPAN). Secondly, their central theme is the development of

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conventional finance rather than Islamic finance. There is a widespread understanding that Islamic finance development, which consists of the "development of *Sukuk* market and Islamic banking", also has a pivotal role in accelerating economic development via ensuring credit supply (Caporale & Helmi, 2018; Smaoui & Nechi, 2017). Particularly in Muslim countries, people show religious concerns regarding conventional financing modes (Abedifar et al., 2016). The Vatican newspaper "Osservatore Romano" lauded the ethical guidelines embedded in Islamic finance by recognizing their efficacy in restoring the clients' confidence and recommended other banks to follow these guidelines (Totaro, 2009). Indeed, Islamic finance promotes welfare and social justice in the society. This has resulted in the global endorsement of the efforts of Islamic finance for the promotion of social justice through its ethical principles (Lebbe et al., 2019).

The claim of Hasan and Dridi (2011) regarding the better performance of Islamic banks during financial crises is not without controversy. For instance, Abedifar et al. (2013) found that small sized but highly leveraged Islamic banks in Muslim countries experience less credit risk and exhibit greater stability than their conventional counterparts. However, this difference seemingly disappears between large sized Islamic and conventional banks. Similarly, Bourkhis and Nabi (2013) found no difference regarding the impact of financial crises on the stability of Islamic and conventional banks. Rashid et al. (2015) found that the performance of conventional banks is better than Islamic banks, while the progress ratio of Islamic banks is higher than conventional banks.

Prior literature says very little about the role of supply-side forces in firms' leverage and debt maturity decisions, particularly in the context of emerging markets such as Pakistan. Furthermore, the available literature about the nexus of Islamic supply-side forces, as well as leverage and debt maturity, is still nascent. Although, a strong influence of Islamic supply-side forces in Pakistan is predictable. This is because Pakistan is among those economies where Islamic finance yields a sizeable backdrop in monetary policy (Khatat, 2016). The Islamic banking industry witnessed tremendous growth worldwide (Naz & Gulzar, 2020), particularly in Pakistan, in the year 2018 based on a record increase of 12.9% and 14.8% in its assets and deposits, respectively. The State Bank of Pakistan (SBP) received the award of "the best central bank" for the promotion of Islamic finance (IFN Islamic Finance News, 2018). In principle, this award is a

recognition of the robust initiatives taken by SBP for the growth of Islamic finance in Pakistan. Noticeably, Islamic banks' role in financial intermediation is not the same as that of conventional banks. For instance, the credit/funds provided by Islamic banks are based on real assets and risk-sharing principles; consequently, it helps the firms to raise financing (Fasih, 2012). Consistent with the "supply-leading hypothesis", Islamic financial institutions are more effective in channeling and transmitting financial resources (Khaleequzzaman et al., 2016; Majid & Kassim, 2015). Likewise, Chowdhury et al. (2018) argued that risk-sharing financing positively influences economic growth through the effective supply of credit, unlike the non-risk sharing financing. Profit-sharing financing, which is the fundamental principle of Islamic banks, ensures economic growth, social justice, and efficient capital allocation, since the return on investment is directly associated with investment productivity (Kassim, 2016). Islamic banks encourage business activities in the economy through various ways including venture capital, which is more proficient than conventional loans (Ayub, 2012; Kassim, 2016).

Pakistan owned a 6.7% share of the global *Sukuk* market at the end of 2016 (International Islamic Financial Markets, 2017) and also enjoyed steady growth in the issuance of *Sukuk* in its domestic market (Government of Pakistan, n.d.). *Sukuk* is one of the most prominent alternatives of conventional financing sources, both in Muslim and non-Muslim worlds (Zawya, 2015; Zulkhibri, 2015). It is a significant instrument used for the effective and efficient mobilization and allocation of resources in capital markets. *Sukuk* market development ensures the availability of long-term financing, since long-term financing is crucial for the productivity of the economy (Smaoui & Nechi, 2017). *Sukuk* plays a crucial role in the development of Islamic finance and remains a pivotal source for the mobilization of resources (Jobst et al., 2008; Wilson, 2008). Additionally, *Sukuk* may resolve the issue of short-term liquidity constraints by expending long-term financing. *Sukuk* markets have a greater potential to offer risk diversification opportunities to conventional equity portfolio (Balcilar et al., 2016) and for conventional fixed-income investors (Abdulkarim & Tabash, 2020), as compared to conventional bonds. *Sukuk* market development is very important for Muslim majority countries such as Pakistan, where people have religious concerns regarding conventional financing sources (Abedifar et al., 2016). Given the above-mentioned facts, the current study

explores the role of conventional and Islamic supply-side perspectives for firms' leverage and debt maturity in the emerging market of Pakistan.

The theories of capital structure, that is, MM proposition, pecking order theory, and trade-off theory have long viewed financial markets as efficient (Deesomsak et al., 2004; Modigliani & Miller, 1958) and firms' capital supply as perfectly elastic, which suggests that firms' demand for debt is the sole determinant of corporate leverage (Graham et al., 2015; Leary, 2009). Moreover, trade-off, agency, and pecking-order hypothesis determine various firm-level positive or negative determinants of capital structure.

The current study contributes to the extant body of knowledge in several ways. Unlike prior studies that analyzed the development of conventional finance in relatively developed economies, it provides a unique focus on developing Islamic supply-side forces, namely the development of *Sukuk* market and Islamic banks in Pakistan. This would offer significant insights for policymakers in Pakistan. Moreover, the current study is the first to analyze the impact of Islamic finance development (Islamic banks and *Sukuk* market) on leverage. It also considers the influence of the development of stock market and the conventional banking sector on leverage in Pakistan. This area has received limited attention in the empirical literature, particularly in the case of emerging markets. Notably, the maturity of debt plays a pivotal role in the banking industry's long-term growth. In emerging economies, financial institutions generally hesitate to extend their credits for a long time because of the uncertainty about the future. Hence, the current study investigates the impact of Islamic and conventional financial development on the maturity structure of debt. It offers some novel insights for policymakers based on the distinctive features of Islamic financing contracts (*Sukuk* and bank loans). Furthermore, the current study is an extension of Antzoulatos et al. (2016), who advised examining the impact of financial development on debt maturity ratio. The study of Antzoulatos et al. (2016) is further extended by incorporating the above mentioned Islamic supply-side force.

This study has a twofold objective. Firstly, it aims to investigate the impact of the development of Islamic (bank and Sukuk) and conventional finance (stock market and bank) on firms' leverage. Secondly, it measures their impact on debt maturity. We investigated this enquiry while using a sample observations of 3,523 firms' years (325 firms with 11 years of data)

of non-financial firms listed on PSX. In line of the current objectives, OLS and fixed-effects regression models were used. However, the findings were validated using a battery of robustness check.

The rest of this paper is structured as follows. Section 1 highlights the association of Islamic and conventional finance development with leverage and debt maturity and also develops the study's hypothesis, accordingly. Section 2 provides an overview about data and the construction of variables. Section 3 highlights the empirical evidence regarding the magnitude of the effect of Islamic and conventional finance development on leverage and debt maturity. Section 4 summarizes the key findings along with the most significant implications.

Literature Review

Conventional Finance Development and Leverage

Stock Market Development and Leverage

Prior literature indicates that the financial development of the country is one of those crucial factors which affect the financial decisions of the firms (Antzoulatos et al., 2016; Deesomsak et al., 2004; De Jong et al., 2008; Demirgüç-Kunt & Maksimovic, 1999; Lemmon & Roberts, 2010). Financial development is a combination of stock market and banking sector development. Stock market development depends on the availability of long-term financing for the firms, whereas banking sector development ensures the availability of short-term financing (Demirgüç-Kunt & Maksimovic, 2002). Similarly, De Jong et al. (2008) showed that stock market development increases the supply of funds which mitigates the cost of equity; finally, lower-cost financing reduces firms' tendency towards the use of debt. Capital market development makes equity financing more viable over debt and hence, preferable for the firms (Booth et al., 2001). A developed capital market encourages the firms to raise their financing from the market instead of banks. On the basis of the above mentioned commentary, it is hypothesized that

H1a: Stock market development is negatively associated with leverage.

H1b: Stock market development is positively associated with debt maturity.

Bank Development and Leverage

Banking sector plays an imperative role as the 'dominant supplier of credit', particularly in bank-based economies, where the size of the capital market is very small and the inflow of funds comes from the banks. In this regard, Gurara et al. (2020) mentioned that banking sector development ensures the supply of funds in both developed and developing economies. Similarly, Wei and Kong (2017) argued that firms in economies with less mature capital markets satisfy their financing needs via bank credit. Furthermore, the banks also provide strong external monitoring, process information for borrowing firms, and alleviate information asymmetry (Krishnaswami et al., 1999). In line with the above, Mahmood et al. (2019) articulated that banking sector development increases credit supply to the firms. However, as per the bank-lending theory, monetary shocks adversely impact conventional banks' demand deposits, resulting in a decrease in credit supply to the private sector (Zulkhibri & Sukmana, 2017). Balcilar et al. (2016) posited that banking sector development accelerates investment in the country. Therefore, based on the above commentary, it is postulated that

H2a: Bank development is positively associated with leverage.

H2b: Bank development is negatively related to debt maturity.

Islamic Finance Development and Leverage

The history of Islamic banking and *Sukuk* in Pakistan dates back to the 1980 Ordinance, after the presidential recommendation in the year 1979, with immediate abolishment of interest *(riba)* in three governmental organizations[1] (Khan & Mirakhor, 1990), and the issuance of Pakistan *modaraba* certificates (Wilson, 2004). The initial development of the Islamic financial system faced regulatory problems due to the absence of a proper regulatory framework. In the year 1995, Term Finance Certificate (TFC) was introduced as an Islamic debt instrument; however, the substance and the form of such securities failed to inherit the *Shariah* rules (Arif, 2007). The State Bank of Pakistan (SBP) developed a proper criteria for the registration of 'full-fledged Islamic banks' in December 2001. Meezan Bank Ltd. was the first bank that qualified as the first full-fledged

[1] These institutions include; House Building Corporation (HBC), Investment Corporation Pakistan and National Investment Trust

Islamic bank in Pakistan[2]. Currently, the Islamic banking industry is experiencing tremendous growth in Pakistan. For instance, the assets and deposits of the Islamic banking industry have grown at 22.6% and 19.8%, respectively in recent years (Government of Pakistan, n.d.). Even the conventional banks operating in Pakistan now have their windows for Islamic financial products and services.

Likewise, in the year 2005, the first fully *Sharia* complied financial security, that is, *Sukuk*, was issued by the Government of Pakistan in the international market for $600 million. Afterwards, Water and Power Development Authority (WAPDA) and Pakistan International *Sukuk* Company issued *Sukuk* worth $134 million and $600 million, respectively. Smaoui and Khawaja (2017) documented that Pakistan remained the 6th largest country for the issuance of *Sukuk* during the years 2001-2013, after Malaysia, Indonesia, Bahrain, Brunei, and Gambia.

Islamic Bank Development and Leverage

The emergence of the Global Financial Crisis 2008-09 raised severe concerns about the operations of the conventional (western) banking system. Consequently, Islamic banks grabbed the attention of the global market (Beck et al., 2010) as a possible substitute of conventional banks for the mobilization of financial resources (Anwar et al., 2020). Islamic banking system plays a significant role in 'financial intermediation' by facilitating the transmission of funds to the deficit units from the surplus units (Abduh & Omar, 2012). This financial intermediation played by Islamic banks is not similar, in nature, to that of conventional banks. The credit/funds provided by Islamic banks are based on real assets and risk-sharing principles (Fasih, 2012). So, their financial intermediation may diminish the problem of information asymmetry through financing based on profit- and loss-sharing (Khoutem & Nedra, 2012). Islamic banks encourage business activities in the economy in various ways, such as venture capital, which is more proficient than conventional loans (Kassim, 2016). Similarly, Yusof and Bahlous (2013) argued that Islamic banks' partnership-based intermediation through *mudharaba* and *mushraka* adversely reduces the risk by mitigating agency conflicts. Consistent with the 'supply-leading hypothesis', Majid and Kassim (2015) concluded that Islamic financial institutions are more effective in channeling and

[2] https://www.sbp.org.pk/ibd/faqs.pdf

transmitting financial resources. Chowdhury et al. (2018) found that financing with risk-sharing capital, unlike non-risk sharing financing, yields a positive influence on economic growth through the effective supply of credit. Anwar et al. (2020) examined the impact of Islamic banks on economic growth in Indonesia and found that Islamic banks spur economic growth via effective utilization of resources. Unlike conventional banks, where borrowers' creditworthiness is most important, the financing provided by Islamic banks is interlinked with the project's productivity. As a result, instead of generating speculative activities, it promotes value-adding investments (Di Mauro et al., 2013). Through the *Shariah*-based financial products, Islamic banks ensure the accessibility of finance to a wide range of businesses as well as individual Muslims with religious concerns regarding conventional financing sources (Abedifar et al., 2016). Kassim (2016) argued that Islamic banks offer long-term financing through *mudharaba* and *musharakah,* leading to long-term economic growth (Mensi et al., 2020). Islamic bank credit was found to be positively associated with industrial development in Malaysia (Bougatef et al., 2020). Therefore, it is hypothesized that

H3a: Islamic bank development is positively associated with leverage.

H3b: Islamic bank development is positively related to debt maturity.

Sukuk Market Development and Leverage

The Islamic Fiqh Council defined *Sukuk* as "investment instruments which allocate the capital (Mudaraba) by floating certificates, as an evidence of capital ownership, based on shares of equal value registered in the name of the owner, as joint owners of shares in the venture capital, or whatever shape it may take, each one's share therein" (Salah & Saeed, 2014). Unlike the conventional bond, *Sukuk* provides ownership stakes in underlying assets to *Sukuk* holders and risk and return on investment is associated with the productivity of these assets (Al-Raeai et al., 2018; Zakaria et al., 2012). On the other hand, conventional bonds carry a fixed rate of return, no ownership rights, and guaranteed repayment of the principal amount (Usmani, 2008). As put by Azmat et al. (2014), the contractual structure of *Sukuk* makes them different from conventional bonds, particularly in risk and return perspectives. For instance, as compared to conventional bonds, *Sukuk* have been found to carry low risk. Given this fact, a vast majority of literature reports the role of *Sukuk* in

portfolio risk reduction, which makes them different from conventional bonds (Cakir & Raei, 2007; Nasir & Farooq, 2017; Reboredo & Naifar, 2017). As Islam discourages interest, which is a fundamental feature of conventional bonds, *Sukuk* (Islamic bond) becomes the preferable source of financing and investment for Muslim investors (Afshar, 2013). Since it complies with the Islamic principles, it is considered as a most credible source of financing (Ahmed et al., 2014). Islamic debt instruments such as *Sukuk* also provide diversification benefits to the investors (El Alaoui et al., 2015). *Sukuk* offers a comparative edge for the firm over conventional finance sources (banks), as it extends the short maturity period, usually grated by a conventional bank (Godlewski et al., 2013). The *Sukuk* market is a source of stable long-term financing and growth, particularly in economies that require long-term investment (Kusuma & Silva, 2014). Smaoui and Nechi (2017) showed that *Sukuk* market development mobilizes savings by providing long-term financing. Similarly, based on the sample of Malaysian and Indonesian firms, Nagano (2017) found that when firms move in the *Sukuk* market, they require long-term financing. Moreover, information asymmetry is very low with the *Sukuk* as compared to the conventional bonds. So, it is hypothesized that

H4a: *Sukuk* market development is positively associated with leverage.

H4b: *Sukuk* market development is positively related to debt maturity.

Methodology

Sample Selection

To check the impact of Islamic and conventional finance development on capital structure and debt maturity, the data of firms' fundamentals and industry classification was extracted from the Balance Sheet Analysis (BSA) published by SBP, macroeconomic variables from the Economic Survey of Pakistan (ECP), and World Bank. Similarly, firm age from PSX and the market value of shares from 'Business Recorder' over the period 2010-2020 were considered. Following the prior literature, the sample was limited to non-financial firms listed on PSX. Firms with missing observations and firms with a non-positive value of total assets were excluded (Antzoulatos et al., 2016). Thus, the final sample comprised 325 firms with 3553 firm-year observations. To control the influence of outliers, all firm-level variables were wisorized at 5 and 95 percentiles. Table 1 presents the distribution of sample firms across various industries.

Table 1
Distribution of Firms across Industries

Industry Classification	No. of Firms	Percentage
Fuel and Energy Sector	11	3.385
Motor Vehicles	18	5.538
Information Service	16	4.923
Textile and Spinning	126	38.769
Sugar	28	8.615
Food	14	4.308
Chemicals, Chemical Products and Pharma.	37	11.385
Other Manufacturing	25	7.692
Cement	16	4.923
Minerals	6	1.846
Motors	18	5.538
Coke and Refined Petroleum	10	3.077
Total	325	

Summary Statistics

Table 3 highlights the summary statistics of all study variables. This table includes seven sections namely A, B, C, D, E, F, and G. Sections A and B deal with the proxies used for measuring leverage and debt maturity, respectively. While, sections C to F highlight the measures used for the development of conventional and Islamic finance. Finally, Section G shows firm-level control factors. Table 2 provides the definitions of study variables and sources of data.

The mean (median) is *M_LEVERAGE* .24(.22), which is comparable with the study of Sindhu et al. (2016). Likewise, the average value of *D_MATURITY* is 28%, comparable with the 21% reported value of Shah and Khan (2009) for Pakistan. The mean (median) of *MCAP_GDP* is 0.23 (.25), while the mean (median) of *TURNOVER* is 0.05 (0.24). These figures are in line with prior studies (Malik & Amjad, 2013; Khan, 2008; Seven & Coskun, 2016). The mean (median) of *CREDT_GDP* and *ASSETS_GDP* are .38(.37) and .45(.43), respectively which are also close to values found in the available literature (Malik & Amjad, 2013; Khan, 2008). The Islamic finance development measures, namely SUKUK, IBA, and *IBCREDIT,* are extracted from ECP and can be verified from the ECP of the respective year.

Table 2

Definitions of All Study Variables

Symbols	Definitions of Study Variables	Sources
Capital Structure		
MARKET_LEV	Market leverage is ratio of total debt to total debt plus market value of equity. Where is total debt is product of short-term plus long-term debt and market value of equity is market price per share multiplied with total number of outstanding shares	BSA
Debt Maturity		
DEBT_MATURITY	Long-Term Debt/Total Debt, where total debt is combination of short-term and long-term debt	BSA
Conventional Finance Development, Stock Market Development		
MCAP_GDP	Stock market capitalization of all listed firms to GDP	ESP
TURNOVER	Total value of shares traded in stock market divided by total market capitalization	World Bank
Bank Development		
CREDIT_GDP	Credit provided by bank and other financial institutions to GDP	ESP
ASSETS_GDP	Ratio of total bank assets to GDP	ESP
Islamic Finance Development, Banking Sector Development		
CREDIT_GDP	Ratio of Islamic total bank deposit to GDP	ESP
ASSETS_GDP	Ratio of Islamic total bank assets to GDP	ESP
Sukuk Market Development		
SUKUK_DEV_INDEX	Bank credit to GDP based upon deflation method (Antzoulatos et al., 2016);{(0.5)*[*SUKUK*/CP_et + *SUKUK*_1/CP_et1]}/[GDP_t/CP_at] where *SUKUK* is value of *Sukuk* issued, CP_e is end-of period CPI, and CP_a is average annual CPI	

Symbols	Definitions of Study Variables	Sources
Control Variables		
LNSIZE	Natural log of total assets	BSA
ROA	The ratio of earnings before interest and tax (EBIT) to total assets	BSA
PAYOUT_RATIO	Total value of dividend to net income	BSA
LNAGE	Number of years from firm incorporation	Website
TANGIBILITY	Percentage of fixed assets to total assets	BSA
Q-RATIO	Market value of equity to book value of equity. Market value of equity is equals to market value per share to total number of shares	BSA
SALES_FA	Ratio of sales to fixed assets	BSA
ASSET_MAT	[(CR_Assets/(CR_Assets+N_Fixed.Assets)]×(CR_Asset÷CGS)+[Net Fixed Assets÷(CR_Asset+N_Fixed Assets)×(N_Fixed Assets÷Dep)]	BSA
Z_SCORE	{1.2*(working capital/total assets)+1.4*(retained earnings/total assets)+3.3*(earnings before interest and taxes/total assets)+0.6*(market value of equity/ book value of total liabilities)+0.999*(sales/total assets)}	BSA
LOSS_DUMMY	Dummy variable equals to 1 if net income is negative zero otherwise	BSA
IND_LEV	The median for ratio of total debt total assets in each of sample industries.	BSA
WGI	World Governance Indicators (WGI) which comprises five components; Government Effectiveness (GE), Rule of Law (ROL), Regulatory Quality (RQ), Control of Corruption (COC), Political Stability (POS).	World Bank

Table 3

Descriptive Statistics

Variables	Mean	Max	Min	*SD*	*p*25th	Median	*p*75th	*N*
Panel A: Leverage								
MARKET_LEV	0.242	0.609	0.000	0.191	0.066	0.228	0.382	3553
Panel B: Debt Maturit								

Variables	Mean	Max	Min	*SD*	*p*25th	Median	*p*75th	*N*
DEBT_MATURITY	0.280	1.000	0.000	0.334	0.000	0.128	0.507	3553
Panel C: Stock Mkt Dev								
MCAP_GDP	0.239	0.355	0.161	0.057	0.180	0.250	0.270	3553
TURNOVER	0.245	0.664	0.037	0.267	0.043	0.050	0.592	3553
Panel D: Bank Development								
CREDIT_GDP	0.383	0.468	0.324	0.040	0.352	0.378	0.406	3553
ASSETS_GDP	0.450	0.530	0.389	0.041	0.417	0.438	0.486	3553
Panel E: Islamic Bank Develop								
IBCREDIT_GDP	0.070	0.386	0.019	0.101	0.025	0.037	0.058	3553
IBA_GDP	0.055	0.290	0.014	0.075	0.019	0.032	0.049	3553
Panel F: Sukuk Market Dev								
sukuk_GDP	0.023	0.039	0.004	0.012	0.007	0.028	0.032	3553
SUKUK_DEV_INDEX	0.017	0.029	0.004	0.009	0.005	0.022	0.024	3553
Panel G: Control Variables								
LNSIZE	14.839	17.772	11.907	1.598	13.712	14.834	16.011	3553
ROA	0.088	0.287	0.000	0.085	0.005	0.070	0.135	3553
DIV_PAY	0.181	0.871	0.000	0.267	0.000	0.000	0.326	3553
LNAGE	3.438	4.644	0.000	0.478	3.135	3.434	3.829	3553
TANGIBILITY	0.463	0.870	0.068	0.229	0.291	0.462	0.636	3553
Q-RATIO	0.796	1.920	0.281	0.392	0.541	0.739	0.915	3553
SALES_FA	3.560	15.714	0.000	3.899	1.059	2.264	4.295	3553
ASSET_MAT	9.556	36.029	0.410	8.991	3.629	6.475	12.408	3553
Z_SCORE	2.370	9.060	-7.625	4.058	0.528	2.680	4.977	3553
LOSS_DUMMY	0.349	1.000	0.000	0.477	0.000	0.000	1.000	3553
IND_LEV	0.290	0.396	0.030	0.102	0.231	0.288	0.377	3553

Table 4
Panel B: Correlation Matrix for Country-level Variables

	Variables	1	2	3	4	5	6	7
1	MCAP_GDP	1						
2	TURNOVER	-0.186	1					
3	CREDIT_GDP	0.534	-0.57	1				
4	ASSETS_GDP	0.632	-0.224	0.904	1			
5	CREDIT_GDP	0.188	-0.356	0.049	-0.155	1		
6	ASSETS_GDP	0.196	-0.381	0.072	-0.139	1	1	
7	SUKUK_DEV_INDEX	0.186	-0.958	0.445	0.086	0.498	0.519	1

The correlation matrix for all firm-level and country-level variables is outlined in Panel A and Panel B of Table 4, respectively. The reported statistics show no multicollinearity, since the correlations among independent variables are under the acceptable range.

Research Design

Conventional Finance Development and Leverage

Due to the panel data context, the fixed-effects model was determined as suitable for analysis since the *p*-value of Hausman test is less than 0.05. Fixed-effects may produce biased results than simple OLS in the presence of measurement error. Hence, the results can also be reported using simple OLS regression. Secondly, literature on financial development also reports the consistent use of simple OLS (Booth et al., 2001; Deesomsak et al., 2004; De Jong, 2008). In addition to the firm-level factors, different governance-related factors were added by following prior literature which documents that in developing countries, various factors such as the rule of law, regulatory quality, political stability, and institutional development significantly influence the financing patterns of firms (Booth et al., 2001; Deesomsak et al., 2004; Gungoraydinoglu et al., 2017). Therefore, the current study estimated the magnitude effect of development in conventional finance which involves the development of both the stock market and the banking sector. This magnitude of effect was gauged through Eq. (1) and Eq. (2) below. The first equation deals with the development of stock market, while the latter is related to the development of the banking sector.

$$LEV_{i,t} = \beta_{i,t} + \beta_1 STKM_{DEV_t} + \beta_2 LNSIZE_{i,t} + \beta_3 ROA_{i,t} + \beta_4 DIV_{PAY_{i,t}} + \beta_5 LNAGE_{i,t} + \beta_6 TANG_{i,t} + \beta_7 Q\_RATIO_{i,t} + \beta_8 LOSS\_DUMMY_{i,t} + \beta_9 IND\_LEV_{i,t} + \beta_{10} WGI_t + \varepsilon_{i,t} \quad (1)$$

Eq. (1) employs two proxies for stock market development. The first is stock market capitalization to *GDP* (*MCAP_GDP*), while the second is the *TURNOVER* ratio. Similarly, Eq. (2) uses two measures, namely the ratio of private credit to *GDP* (*CRDT_GDP*) and bank assets to *GDP* (*ASSETS_GDP*), for measuring conventional bank development (*CB_DEV*).

$$LEV_{i,t} = \beta_{i,t} + \beta_1 CB\_DEV_t + \beta_2 LNSIZE_{i,t} + \beta_3 ROA_{i,t} + \beta_4 DIV_{PAY_{i,t}} + \beta_5 LNAGE_{i,t} + \beta_6 TANG_{i,t} + \beta_7 Q\_RATIO_{i,t} + \beta_8 LOSS\_DUMMY_{i,t} + \beta_9 IND\_LEV_{i,t} + \beta_{10} WGI_t + \varepsilon_{i,t} \quad (2)$$

Islamic Finance Development and Leverage

Regression models mentioned in Eq. (3) and Eq. (4) were used to investigate the impact of Islamic finance development on firms' leverage. Akin to conventional finance development discussed above, there are two aspects to Islamic finance development, namely Islamic bank development and *Sukuk* market development. Eq. (3) and Eq. (4) are related to Islamic bank and *Sukuk* market development, respectively.

$$LEV_{i,t} = \beta_{i,t} + \beta_1 ISB\_DEV_t + \beta_2 LNSIZE_{i,t} + \beta_3 ROA_{i,t} + \beta_4 DIV_{PAY_{i,t}} + \beta_5 LNAGE_{i,t} + \beta_6 TANG_{i,t} + \beta_7 Q\_RATIO_{i,t} + \beta_8 LOSS\_DUMMY_{i,t} + \beta_9 IND\_LEV_{i,t} + \beta_{10} WGI_t + \varepsilon_{i,t} \quad (3)$$

In Eq. (3), we proxy Islamic bank credit to *GDP (IBCREDIT_GDP)* and assets to *GDP (IBA_GDP)* for Islamic bank development. Furthermore, the ratio of *Sukuk* to *GDP* (*SUKUK_DEV*) for *Sukuk* market development in Eq. (4) is based on Al Fathan and Arundina (2019).

$$LEV_{i,t} = \beta_{i,t} + \beta_1 SUKUK_{DEV_t} + \beta_2 LNSIZE_{i,t} + \beta_3 ROA_{i,t} + \beta_4 DIV_{PAY_{i,t}} + \beta_5 LNAGE_{i,t} + \beta_6 TANG_{i,t} + \beta_7 Q\_RATIO_{i,t} + \beta_8 LOSS\_DUMMY_{i,t} + \beta_9 IND\_LEV_{i,t} + \beta_{10} WGI_t + \varepsilon_{i,t} \quad (4)$$

where,

LEV represents the market leverage ratio (*MARKET_LEV*)

STKM_DEV denotes two proxies of stock market development (*MCAP_GDP and TURNOVER*)

BANK_DEV denotes the development of banking sector, which is measured by using two models (*CREDIT_GDP and ASSETS_GDP*)

LNSIZE is the natural log of total assets at the end of the year

ROA is the ratio of EBIT to total assets at the end of the year

DIV_PAY is the ratio of total dividends to net income at the end of the year

LNAGE is the natural log of the age of a firm at the end of the year

TANG is the ratio of fixed assets to total assets at the end of the year

Q_RATIO is the ratio of market value of equity to book value of equity at the end of the year

LOSS_DUMMY is a dummy variable equals 1 when net income is negative and zero; otherwise, at the end of the year

IND_LEV is the industry median leverage at the end of the year

WGI represents World governance indicators. WGI includes; Rule of Law (ROL); Political Stability (PS); Control of Corruption (COC); Regulatory Quality (RQ)

Results

Table 5

Conventional Finance Development and Leverage

Variables	M_LEV OLS	M_LEV FE	M_LEV OLS	M_LEV FE	M_LEV OLS	M_LEV FE	M_LEV OLS	M_LEV FE
MCAP_GDP	-0.159**	-0.136***						
	(0.069)	(0.050)						
TURNOVER			-0.337***	-0.285***				
			(0.052)	(0.037)				
CREDIT_GDP					0.660***	0.343**		
					(0.151)	(0.134)		
ASSETS_GDP							0.683***	0.397***
							(0.147)	(0.131)
LNSIZE	0.036***	0.086***	0.036***	0.082***	0.036***	0.082***	0.036***	0.081***
	(0.002)	(0.007)	(0.002)	(0.007)	(0.002)	(0.007)	(0.002)	(0.007)
ROA	-0.196***	-0.126***	-0.196***	-0.137***	-0.190***	-0.133***	-0.190***	-0.134***
	(0.049)	(0.046)	(0.048)	(0.046)	(0.049)	(0.046)	(0.049)	(0.046)
DIV_PAY	-0.060***	-0.038***	-0.064***	-0.040***	-0.064***	-0.037***	-0.065***	-0.038***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
LNAGE	0.014**	0.129***	0.012*	0.059*	0.011	0.070	0.011	0.059
	(0.007)	(0.034)	(0.007)	(0.035)	(0.007)	(0.044)	(0.007)	(0.044)
TANG	0.044**	0.063***	0.046***	0.066***	0.046***	0.065***	0.045***	0.065***
	(0.017)	(0.019)	(0.017)	(0.019)	(0.017)	(0.019)	(0.017)	(0.019)
Q_RATIO	0.249***	0.372***	0.248***	0.369***	0.247***	0.369***	0.248***	0.369***

Variables	M_LEV OLS	M_LEV FE	M_LEV OLS	M_LEV FE	M_LEV OLS	M_LEV FE	M_LEV OLS	M_LEV FE
	(0.016)	(0.013)	(0.016)	(0.013)	(0.016)	(0.013)	(0.016)	(0.013)
LOSS_D	-0.014*	-0.006	-0.016**	-0.009	-0.015*	-0.007	-0.016**	-0.008
	(0.008)	(0.007)	(0.008)	(0.007)	(0.008)	(0.007)	(0.008)	(0.007)
IND_LEV	0.807***	-0.422	0.804***	-0.408	0.803***	-0.491	0.803***	-0.491
	(0.028)	(0.573)	(0.028)	(0.568)	(0.028)	(0.571)	(0.028)	(0.570)
ROL	0.005***	0.007***	0.018***	0.017***	0.010***	0.009***	0.009***	0.009***
	(0.002)	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)
PS	0.019***	0.012***	-0.000	-0.002	-0.008	-0.006	-0.008	-0.007
	(0.006)	(0.004)	(0.007)	(0.005)	(0.008)	(0.005)	(0.008)	(0.005)
COC	-0.011***	-0.012***	-0.018***	-0.018***	-0.009***	-0.009***	-0.009***	-0.009***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
RQ	0.000	0.000	0.012***	0.010***	0.001	0.001	-0.001	-0.000
	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)
Constant	-0.671***	-1.584***	-1.110***	-1.656***	-0.867***	-1.398***	-0.805***	-1.328***
	(0.086)	(0.233)	(0.100)	(0.228)	(0.096)	(0.246)	(0.088)	(0.249)
	323	323	323	323	323	323	323	323
Observations	3,553	3,553	3,553	3,553	3,553	3,553	3,553	3,553
R^2	0.381	0.297	0.387	0.308	0.385	0.302	0.385	0.303

Note. In parentheses are robust standard errors; *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 5 shows the results of the association of conventional finance development (both stock market and banking sector development) with leverage (*MARKET_LEV)*. The results of fixed-effects model parallel with OLS are depicted in each one of the tables. Stock market capitalization to GDP (*MCAP_GDP*) and *TURNOVER* were used as measures of stock market development. The coefficients of *MCAP_GDP* and *TURNOVER* were found to be highly significant with predicted negative signs (β=-0.159, p<0.01; β=-0.337, p<0.01, respectively) using the OLS method. Likewise, the same analysis was repeated using the fixed-effects model. The findings remain identical to those with the OLS method, as reported in columns 2 and 4 of Table 5. Hence, the findings strongly support H1a, implying that financial market development substitutes the banking sector as a source of capital for the firms. Antzoulatos et al. (2016) also concluded that the development of stock market accelerates the supply of funds by substituting debt financing. Likewise, Deesomsak et al. (2004) reported a significant negative relationship between stock market development and leverage in relatively developed Asian countries. Gonenc and de Haan (2014) also supported the above notion that stock market development adversely impacts the firms' leverage ratio.

Table 5 also shows the impact of banking sector development on leverage. Consistent with H2a, the coefficients of both measures of bank development, namely credit to GDP (*CRDT_GDP*) and bank assets to GDP (*ASSETS_GDP*), are strongly significant with predicted signs (β=0.660, p<0.01; β=0.683, p<0.01, respectively) using OLS regression, as shown in columns 5 and 7. These findings suggest that banking sector development also has a significant role in fulfilling firms' financial needs. The same analysis was repeated using the fixed-effects model. The findings remain nearly identical to those using OLS, as reported in columns 6 and 8 of Table 5. These findings are consistent with the notion that credit market expansion is positively linked with leverage, as credit market development diminishes monitoring costs by increasing credit supply (Antzoulatos et al., 2016). The positive impact of bank credit on leverage ratio complements the notion provided by Fan et al. (2012) that the firms in countries with a fragile legal system (for the protection of investors), high ratio of bank deposits to GDP, high level of corruption, and lower leverage-based tax gain tend to have a high ratio of leverage and short debt maturity. Similarly, Gonenc and de Haan (2014) explicated that credit market development ensures the availability of financing at a lower cost for the firms.

Table 6
Islamic Finance Development and Leverage

Variables	M_LEV OLS	M_LEV FE	M_LEV OLS	M_LEV FE	M_LEV OLS	M_LEV FE
IBA_GDP	0.130***	0.127***				
	(0.039)	(0.028)				
IBCREDIT_GDP			0.179***	0.172***		
			(0.053)	(0.038)		
SUKUK_DEV					4.782***	4.077***
					(0.756)	(0.516)
LNSIZE	0.036***	0.086***	0.036***	0.086***	0.036***	0.080***
	(0.002)	(0.007)	(0.002)	(0.007)	(0.002)	(0.007)
ROA	-0.202***	-0.133***	-0.202***	-0.133***	-0.197***	-0.135***
	(0.049)	(0.046)	(0.049)	(0.046)	(0.049)	(0.046)
DIV_PAY	-0.057***	-0.034***	-0.057***	-0.034***	-0.060***	-0.036***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
LNAGE	0.014*	0.123***	0.014*	0.122***	0.013*	0.065*
	(0.007)	(0.034)	(0.007)	(0.034)	(0.007)	(0.035)
TANG	0.043**	0.062***	0.043**	0.062***	0.047***	0.070***
	(0.017)	(0.019)	(0.017)	(0.019)	(0.017)	(0.019)
Q_RATIO	0.249***	0.373***	0.249***	0.373***	0.247***	0.367***
	(0.016)	(0.013)	(0.016)	(0.013)	(0.016)	(0.013)

Variables	M_LEV OLS	M_LEV FE	M_LEV OLS	M_LEV FE	M_LEV OLS	M_LEV FE
LOSS_D	-0.013	-0.005	-0.013	-0.005	-0.014*	-0.006
	(0.008)	(0.007)	(0.008)	(0.007)	(0.008)	(0.007)
IND_LEV	0.807***	-0.395	0.807***	-0.396	0.803***	-0.469
	(0.028)	(0.571)	(0.028)	(0.571)	(0.028)	(0.568)
ROL	0.003*	0.005***	0.003*	0.005***	0.002	0.004***
	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
PS	0.030***	0.022***	0.030***	0.022***	0.004	0.002
	(0.006)	(0.004)	(0.006)	(0.004)	(0.007)	(0.004)
COC	-0.015***	-0.016***	-0.015***	-0.016***	-0.004*	-0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)
RQ	0.012***	0.011***	0.012***	0.011***	0.011***	0.010***
	(0.004)	(0.003)	(0.004)	(0.003)	(0.003)	(0.002)
Constant	-0.927***	-1.810***	-0.931***	-1.804***	-1.232***	-1.744***
	(0.092)	(0.231)	(0.092)	(0.231)	(0.114)	(0.228)
	323	323	323	323	323	323
Observations	3,553	3,553	3,553	3,553	3,553	3,553
R^2	0.381	0.300	0.381	0.300	0.387	0.309

Note. In parentheses are robust standard errors; *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Regression models (in columns 1 to 6 in Table 6) were employed to evaluate the impact of Islamic finance development (Islamic bank and *Sukuk*) on leverage using OLS and fixed-effects regression. We proxy assets of Islamic banks *(IBA_GDP)* and Islamic bank credit *(IBCREDIT_GDP)* for Islamic bank development. The estimated coefficients of *IBA_GDP* and *IBCREDIT_GDP* show that both proxies are statistically significant and positive ($\beta = 0.130$, $p < 0.01$ and $\beta = 0.179$, $p<0.01$, respectively), as shown in columns 1 and 3 of Table 6. Thus, H3a is supported. These findings are comparable with Mensi et al. (2020), who argued that Islamic bank development leads to high financial inclusion. Similarly, Aysan et al. (2018) and Caporale and Helmi (2018) found that Islamic bank development enhances economic growth via credit supply. Regression results using fixed-effects regression are reported in columns 2 and 4 of Table 6. Overall, the findings are economically and statistically similar.

The estimated coefficients, reported in columns 5 and 6 of Table 6, show that *SUKUK_DEV* is positively related with leverage ($\beta = 4.782$, $p < 0.01$ and $\beta = 4.077$, $p < 0.01$, respectively) using OLS and fixed-effects regression, which is consistent with H4a and supports the emerging role of *Sukuk* market development in satisfying the financing needs of firms. Taken together, the findings in this section strongly support the contributive role of Islamic finance development as a supplier of credit for the firms. Overall, the findings are in line with the premise that Islamic financial institutions allocate financial resources to companies on the basis of production requirements rather than on a pure lending basis, which is a more efficient way to meet the financial needs of companies (Zarrouk et al., 2017). Furthermore, Abedifar et al. (2016) also stated that Islamic bank development spurs economic growth via efficient allocation of credit and mobilization of funds to the corporate sector, particularly in Muslim-majority countries.

Debt Maturity

The effect of conventional and Islamic finance development was estimated on debt maturity using OLS and fixed-effects regression.

$$\text{D\_MAT}_{i,t} = \beta_{i,t} + \beta_1 FIN\_DEV_t + \beta_2 LNSIZE_{i,t} + \beta_3 ROA_{i,t} + \beta_4 ASSET\_M_{i,t} + \beta_5 Z\_SCORE_{i,t} + \beta_6 DIV\_PAY_{i,t} + \beta_7 LNAGE_{i,t} + \beta_8 TANG_{i,t} + \beta_9 Q\_RATIO_{i,t} + \beta_{10} SALE\_FA_{i,t} + \beta_{11} LOSS\_DUMMY_{i,t} + \beta_{12} IND\_LEV_{i,t} + \beta_{13} WGI + \varepsilon_{i,t} \quad (5)$$

D_MAT represents debt maturity which is the ratio of long term debt to total debt.

ASSET_M is based on the formula mentioned in Table 2.

Z_SCORE is a measure of financial distress and is calculated based on the formula mentioned in Table 2.

SALE_FA is the ratio of sales to fixed assets at the end of the year.

Table 7 shows the results regarding the association between conventional finance development (both stock market and bank development) and debt maturity (*D_MAT*). The results indicate that the coefficients of *MCAP_GDP* are insignificant and negative using OLS and fixed-effects regression, as reported in columns 1 and 2 of Table 7. On the other hand, the coefficients of *TURNOVER* are significant but negative in contrast to H1b. However, the coefficients of both bank development measures, namely *CREDIT_GDP* and *ASSETS_GDP,* are positive and statistically significant but inconsistent with H2b. These findings are consistent with the notion that due to political and economic instability; investors hesitate to invest in Pakistan for a long period of time and the corporate sector satisfies the financing needs via financial institutions (banks).

Table 7

Conventional Finance Development and Debt Maturity

Variables	D_MAT OLS	D_MAT FE	D_MAT OLS	D_MAT FE	D_MAT OLS	D_MAT FE	D_MAT OLS	D_MAT FE
MCAP_GDP	-0.107	-0.015						
	(0.092)	(0.091)						
TURNOVER			-0.855***	-0.697***				
			(0.083)	(0.068)				
CREDIT_GDP					1.170***	1.048***		
					(0.201)	(0.181)		
ASSETS_GDP							1.046***	0.937***
							(0.173)	(0.156)
MARKET_LEV	0.259***	0.565***	0.221***	0.505***	0.261***	0.582***	0.261***	0.583***
	(0.034)	(0.041)	(0.035)	(0.041)	(0.034)	(0.041)	(0.034)	(0.041)
LNSIZE	0.030***	0.017	0.030***	0.009	0.029***	0.006	0.029***	0.008
	(0.004)	(0.014)	(0.004)	(0.014)	(0.004)	(0.014)	(0.004)	(0.014)
ROA	-0.167**	0.142	-0.182**	0.094	-0.152*	0.135	-0.152*	0.134
	(0.085)	(0.092)	(0.084)	(0.091)	(0.085)	(0.092)	(0.085)	(0.092)
DIV_PAY	-0.058***	-0.011	-0.069***	-0.018	-0.072***	-0.019	-0.072***	-0.022
	(0.021)	(0.022)	(0.021)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)
LNAGE	0.007	0.431***	0.002	0.262***	0.001	0.191**	0.001	0.213***
	(0.012)	(0.063)	(0.011)	(0.064)	(0.012)	(0.075)	(0.012)	(0.072)
TANG	0.440***	0.292***	0.451***	0.308***	0.449***	0.301***	0.449***	0.299***
	(0.039)	(0.040)	(0.038)	(0.040)	(0.039)	(0.040)	(0.039)	(0.040)
Q_RATIO	0.157***	0.048	0.164***	0.059*	0.161***	0.045	0.161***	0.047
	(0.028)	(0.033)	(0.028)	(0.032)	(0.028)	(0.032)	(0.028)	(0.032)

Variables	D_MAT OLS	D_MAT FE	D_MAT OLS	D_MAT FE	D_MAT OLS	D_MAT FE	D_MAT OLS	D_MAT FE
LOSS_DUMMY	-0.056***	-0.017	-0.063***	-0.024*	-0.057***	-0.016	-0.057***	-0.017
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
IND_LEV	-0.328***	-0.541	-0.306***	-0.658	-0.329***	-0.509	-0.329***	-0.467
	(0.061)	(1.053)	(0.060)	(1.035)	(0.060)	(1.046)	(0.060)	(1.046)
SALE_FA	-0.013***	-0.011***	-0.013***	-0.011***	-0.012***	-0.009***	-0.012***	-0.009***
	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)
ASSETS_MAT	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Z_SCORE	0.016***	0.026***	0.017***	0.026***	0.018***	0.027***	0.018***	0.027***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
ROL	0.008***	0.009***	0.042***	0.036***	0.013***	0.012***	0.013***	0.010***
	(0.003)	(0.002)	(0.004)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
PS	0.081***	0.064***	0.028**	0.026***	0.081***	0.071***	0.081***	0.075***
	(0.010)	(0.008)	(0.012)	(0.008)	(0.010)	(0.008)	(0.010)	(0.008)
COC	-0.021***	-0.021***	-0.036***	-0.031***	-0.032***	-0.027***	-0.032***	-0.029***
	(0.003)	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)
RQ	0.005	0.006	0.028***	0.023***	0.009*	0.008**	0.009*	0.006
	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)
Constant	-0.417***	-1.712***	-1.409***	-1.739***	-0.920***	-1.156***	-0.920***	-1.163***
	(0.152)	(0.439)	(0.174)	(0.426)	(0.169)	(0.442)	(0.169)	(0.441)
	323	323	323	323	323	323	323	323
Observations	3,553	3,553	3,553	3,553	3,553	3,553	3,553	3,553
R^2	0.281	0.275	0.303	0.298	0.289	0.282	0.289	0.283

Note. In parentheses are robust standard errors; *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 8

Islamic Finance Development and Debt Maturity

Variables	D_MAT OLS	D_MAT FE	D_MAT OLS	D_MAT FE	D_MAT OLS	D_MAT FE
IBA_GDP	0.171***	0.107**				
	(0.064)	(0.052)				
IBCREDIT_GDP			0.247***	0.155**		
			(0.087)	(0.071)		
SUKUK_DEV					9.430***	6.934***
					(1.206)	(0.959)
MARKET_LEV	0.256***	0.559***	0.255***	0.558***	0.228***	0.521***
	(0.034)	(0.041)	(0.034)	(0.041)	(0.035)	(0.041)
LNSIZE	0.030***	0.017	0.030***	0.017	0.030***	0.009
	(0.004)	(0.014)	(0.004)	(0.014)	(0.004)	(0.014)
ROA	-0.174**	0.135	-0.175**	0.135	-0.176**	0.116
	(0.085)	(0.092)	(0.085)	(0.092)	(0.085)	(0.091)
DIV_PAY	-0.054**	-0.007	-0.053**	-0.007	-0.060***	-0.009
	(0.022)	(0.022)	(0.022)	(0.022)	(0.021)	(0.022)
LNAGE	0.007	0.425***	0.006	0.423***	0.003	0.323***
	(0.012)	(0.063)	(0.012)	(0.063)	(0.012)	(0.064)
TANG	0.439***	0.291***	0.439***	0.291***	0.449***	0.306***
	(0.039)	(0.040)	(0.039)	(0.040)	(0.038)	(0.040)
Q_RATIO	0.158***	0.050	0.158***	0.050	0.160***	0.050
	(0.028)	(0.033)	(0.028)	(0.033)	(0.028)	(0.032)
LOSS_DUMMY	-0.055***	-0.016	-0.055***	-0.016	-0.058***	-0.018
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)

Variables	D_MAT OLS	D_MAT FE	D_MAT OLS	D_MAT FE	D_MAT OLS	D_MAT FE
IND_LEV	-0.325***	-0.561	-0.325***	-0.563	-0.311***	-0.725
	(0.061)	(1.051)	(0.061)	(1.051)	(0.060)	(1.044)
SALE_FA	-0.013***	-0.011***	-0.013***	-0.011***	-0.013***	-0.011***
	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)
ASSETS_MAT	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Z_SCORE	0.016***	0.025***	0.016***	0.025***	0.016***	0.026***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
ROL	0.006**	0.008***	0.006**	0.008***	0.003	0.005**
	(0.003)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
PS	0.094***	0.071***	0.094***	0.072***	0.048***	0.043***
	(0.011)	(0.008)	(0.010)	(0.008)	(0.011)	(0.008)
COC	-0.026***	-0.023***	-0.026***	-0.023***	-0.005	-0.008***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
RQ	0.018***	0.013***	0.019***	0.014***	0.022***	0.017***
	(0.006)	(0.005)	(0.006)	(0.005)	(0.005)	(0.004)
Constant	-0.699***	-1.827***	-0.717***	-1.830***	-1.436***	-1.874***
	(0.166)	(0.436)	(0.167)	(0.435)	(0.195)	(0.430)
	323	323	323	323	323	323
Observations	3,553	3,553	3,553	3,553	3,553	3,553
R^2	0.282	0.276	0.283	0.276	0.294	0.286

Note. In parentheses are robust standard errors; *** p<0.01, ** p<0.05, * p<0.1

The impact of Islamic finance development (*Sukuk* and Islamic bank) on debt maturity was also estimated. The results reported in Table 8 show that both *Sukuk (SUKUK_DEV)* and Islamic bank (*IBA_GDP* and *IBCREDIT_GDP*) development are positively associated with debt maturity using OLS and fixed-effects regression. Hence, H3b and H4b are supported. These findings are in line with well documented findings in prevailing literature that the credit provided by Islamic financial institutions has a lower risk and a greater maturity period than the credit provided by conventional financial institutions. For instance, the study by Godlewski et al. (2013) showed that *Sukuk* provides comparative advantages to the firms over conventional sources of finance (banks), as it extends the short maturity period usually grated by conventional banks. Similarly, the study of Smaoui and Nechi (2017) documented that *Sukuk* market development mobilizes savings by providing long-term financing. Hence, they play a significant role in capital market's functioning. Furthermore, they argued that *Sukuk* market development contributes towards long-term sustainable growth of the economy. The current findings are also consistent with the notion that *Sukuk* market development spurs Islamic bank development because companies borrow from Islamic banks to buy the *Sukuk* (Smaoui & Nechi, 2017). Similarly, regarding Islamic banks, Caporale et al. (2020) posited that Islamic banks' credit has lower sensitivity towards monetary shocks than the credit given by their conventional counterparts. Caporale et al. (2020) attributed this lower sensitivity to their credit's unique characteristics, such as risk-sharing behaviour.

The positive coefficients *LNTA, TANG, Q_RATIO* and *MARKET_LEV* are in line with (Ben-Nasr et al., 2015) and imply that large firms have a higher credit quality which provides them with an edge for extending their debt maturity. Similarly, firms' tangible assets can easily be collateralized for long-term debt. The results for the rest of the control variables are compatible with prior studies.

Robustness Check

The robustness of findings were validated by employing alternate measures for leverage, debt maturity, and Islamic and conventional financial development, including some other control factors. Furthermore, alternate data estimation techniques were also used.

Endogeneity

The potential existence of endogeneity was also considered between financial development and capital structure, following the studies of Antzoulatos et al. (2016) and Fan et al. (2012). These studies articulated that the economies where firms rely on financial markets to fulfil their financial needs, there the financial markets are likely to develop fully in order to fulfill the needs. Two-Stage Least Square (2SLS), using numerous proxies for financial development, was employed to address this concern. In line with the study of Antzoulatos et al. (2016) and Fan et al. (2012), we proxy private credit to GDP for the banking sector and proxy capitalization of stock market to GDP for stock development. Similarly, we consider loans of Islamic banks to GDP for Islamic bank development and ratio of *Sukuk* to GDP for Sukuk market development. Additionally, the lag of endogenous variable was included as instruments; however, the findings remained unchanged.

Alternate Proxies of Leverage and Debt Maturity

Firstly, the robustness of the findings was verified using several other measures of leverage and debt maturity. Following the prior literature, market leverage and various other proxies of leverage were also used. Similarly, two alternate proxies for debt maturity were employed. Firstly, the ratio of short-term debt to total debt was employed, which is the opposite of long-term debt maturity proxy, based on the study of (Gomariz & Ballesta, 2014). Secondly, the ratio of difference between total and current liabilities to total liabilities was employed following Ben-Nasr et al. (2015). The findings continued to hold after employing alternate measures of leverage and debt maturity. Next, the sensitivity of the findings to other Islamic and conventional financial development measures was tested. However, the sign of coefficient remained stable.

Hypotheses	Statement	Status
H1a	Stock market development is negatively associated with leverage.	Supported
H1b	Stock market development is positively associated with debt maturity.	Not Supported
H2a	Bank development is positively associated with leverage.	Supported

Hypotheses	Statement	Status
H2b	Bank development is negatively related to debt maturity.	Not Supported
H3a	Islamic bank development is positively associated with leverage.	Supported
H3b	Islamic bank development is positively related to debt maturity.	Supported
H4a	*Sukuk* market development is positively associated with leverage.	Supported
H4b	*Sukuk* market development is positively related to debt maturity.	Supported

Conclusion

The extant literature on financial development demonstrates that it plays a significant role in directing the funds towards the corporate sector (Antzoulatos et al., 2016; Graham & Narasimhan, 2004; Graham et al., 2015; Lemmon & Roberts, 2010; Leary, 2009). The vast majority of literature focuses on financial development inform a conventional perspective in relatively developed markets. However, the role of financial development in emerging economies, particularly in the development of Islamic finance, still needs thorough investigation. Therefore, the current study was aimed to bridge this gap by examining the impact of financial development on capital structure and debt maturity in the emerging market of Pakistan.

Firstly, it was found that stock market development has a significant negative impact on leverage. In contrast, a positive association of banking sector development with leverage was found. We also found that Sukuk market development and Islamic bank development have a significant positive impact on leverage and debt maturity. Together, the Sukuk market and Islamic banks' development suggests that the overall development of Islamic finance is a significant determinant of leverage and maturity of debt in Pakistan. Similarly, we also empirically analyzed the impact of conventional and Islamic finance development on debt maturity. The findings revealed that overall development in Islamic bank, Sukuk, and conventional bank development were found significant and positively associated with debt maturity. Nevertheless, the development in stock market's is also found to be significant but with negative sign. In short, our findings provide robust evidence that other than conventional supply forces,

Islamic supply side-force, Islamic banks and Sukuk are also important emerging drivers of financing in Pakistan.

Implications

The findings highlight several important policy implications for the concerned authorities in Pakistan. Firstly, policies aimed to foster the stock market and banking sector development are of key importance, as the findings suggest that stock market and banking sector development play a vital role in the supply of equity capital and debt, respectively. Other than conventional finance, the development of Islamic finance comprising *Sukuk* and Islamic bank development should also be given the policymakers' required attention. The development of Islamic finance not only increases the supply of capital to the corporate sector but the financing supplied by Islamic financial institutions is also of long-term in nature. Although the initiatives taken by SBP are significant, it can further augment these initiatives by involving Islamic financial institutions in the decision-making process regarding Islamic finance development.

The findings regarding the impact of conventional finance development, comprising stock market and banking sector development, show their negative and positive association with debt maturity, respectively. This indicates that because of uncertainty and political instability in Pakistan, the financial market hesitates to grant funds for a longer period of time. Therefore, the corporate sector fulfils its financing needs via banks. These findings are in line with the fact that Pakistan faces the problem of political instability, which creates uncertainty and financial risk; therefore, institutions generally avoid long-term agreements and prefer short-term agreements. These findings are also consistent with Pepinsky et al. (2012) that religious and political parties use their party platforms as "informational shortcuts" in Muslim economies to seek their political objectives, particularly when Muslim voters notice uncertainty in economic policies. So, the regulatory bodies should devise a strong mechanism that may boost the financial institutions' confidence. Consequently, the financial market would be able to grant financing for a longer period of time.

Limitations and Future Research Directions

The current study focused on the firms listed on PSX. So, the findings of this study should be generalized with caution to other Asian markets. It is also suggested that comparative studies regarding the role of Islamic and

conventional finance development should also be carried out in other countries.

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