Impact of Ownership Structure on Corporate Debt Maturity: An Empirical Study of Non-Financial Sector of Pakistan

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Abstract

This study examines the impact of ownership structure on corporate debt maturity. The debt maturity of the listed organisation has experienced a significant decline (demand and supply) over the last few years. The study also investigates the reason for such decline, whether the demand-side factors firms own characteristics are responsible for this decline, and it may be because of supply-side factors, market pressure. The current study employs a sample of 78 firms listed on the Pakistan Stock Exchange (PSX) over 13 years from 2004 to 2016. Panel data analysis has been used for statistical analysis. The study's findings suggest that assets maturity, firm size, working capital, leverage, and foreign ownership significantly impact debt maturity. The study further suggests that the supply side factors are more accountable for the decline in debt maturity. The study would help corporate managers regarding decision making about financing.

Keywords: Demand-side factors, Market pressure, and the loan granted

Introduction

Debt maturity is when a transaction of debt is completed, or a debt instrument is matured. Debt maturity may generally be defined as short-term and long-term debt composition in firms' capital structure. The honest relationship between debt instruments varying with maturity in debt capital structure is called debt maturity (Venugoplan and Madhu, 2013). Firms use various sources of finance to meet their financial needs. First, firms can use an equity source of financing that is a permanent and long-term source of financing. Equity holders are owners of the company and have a residual claim on assets of the organization after bay all other liabilities of the organization as equity holders bear the entire risk of a firm, so they demand more compensation in the form of dividends and capital gain. Other sources of finance include preferred stock and debt sources of financing. Preferred stockholders have some preference over common stockholders. Preferred shareholders are mostly paid with a fixed dividend. The third source of financing of firms is debt financing. In debt financing, the funds are taken on fixed terms of payment of interest and principal amount. Debt providers have preferences over preferred stockholders as well as on equity holders in case of liquidation. Debt providers are paid a fixed amount irrespective of the organization's performance; whether firms earn a profit or sustain a loss, they are paid the agreed compensation as debt providers have a minimum risk compared to other sources of finance. Hence, they demand less compensation for providing finance. Different sources of finance have a different cost for the firm, as financing cost varies by using different source financing, so the firm's value is affected by the decision about the sources of financing.

Different debt maturities affect the cost of financing, which has a direct effect on firm value. Incorporate finance. There are two crucial decisions about optimally financing the firm to exploit the companies' value. First, the capital structure is a decision that determines how the organization finances much equity and how much debt, different types of equity, and further

compensation of debt and equity are used to financing assets to increase the firms' overall value (Modigaliani and Miller, 1963). Second, besides the decision of debt versus equity, it is an equally important decision to exploit the value of the firm to determine maturity of debt (Brick and Palmon, 1992); (Nam et al., 2004).

Firms' ownership structure and control refer to the shareholders' roles and responsibilities, the functions performed by the shareholders in a company and the structure of shareholders in the firm. In numerous countries, mainly in Europe, ownership is not fundamentally sequential to control supervisors or classify suitable to continue the existence of firms' ownership for all sides substitute election, appointment alliance, and alignment shares with the individual chairman and chief executive officer. Firm ownership is usually defined as the ownership of capital inflow and outflow; constitutional privileges, while power and management concern the ownership of appointment privileges and rights.

The cost of financing of the firm is affected due to a composition of different sources of finance; different maturities of debt also distress the cost of financing for a company (Brick. and Palmon, 1992). By debt maturity, we mean the life of the loan, after which that loan can be paid back with interest. On a maturity basis, debts are alienated into shorter maturity debt and longer maturity debt. Leaders demand special compensations for these two types of debt financing. The decision about long and short maturity debts affects the financing costs. (Nam et al. 2004). Different debt maturity and the cost of debt are called the term structure of interest rate theories. According to one approach, people are unbiased about the interest rate of debt having different maturities. Therefore, they demand the same interest rate for both categories of loans. According to the second approach, companies prefer fleeting debt because lenders demand high-interest rates on long term debt as the risk related with longer maturity debt is high than the debt with a shorter maturity. In short-term debt, different factors can be predicted with more accuracy than long-term debt. Also, funds are tied up for a more extended period in this type of debt, which is why lenders demand high-interest on long-term liability. Another approach concerning the tenure structure of interest rate states that debt providers neither prefer shorter maturity nor are unbiased about the debt maturity. However, they have their preferences about debt maturity based on their refinancing and reinvestment risks.

Debt maturity structure is an important area of research in finance. Numerous studies have been completed to explore the factors disturbing debt maturity structure. After numerous studies on debt maturity, which firm attributes determine the debt maturity structure is still debated. So, this study tries to investigate the role of ownership structure on debt maturity. Study analyses the impact of ownership structure on debt maturity (demand and supply-side factors). The center of attention of the study is whether the influence of ownership structure on debt maturity structure defines the financing decision.

Theoretical Background

Maturity Matching

A theoretical study about the maturity matching concept has been first introduced by Grove (1974). Firms match the maturity of debt with the life of their assets to condense the risk of refinancing and the risk of reinvestment. Organizations have to pay the debt out of cash generated by assets, as accrual basis accounting. Hence, the profits are not the actual representation of cash availability because we charge depreciation on assets. The depreciation

is a non-cash expense due to which actual cash inflows should be more excellent with the amount equal to depreciation amounts, which could be used to pay back the debt. Suppose the debt maturity is greater than the life of assets. In that case, the risk from cash flows by assets might be utilized somewhere else and will not be available for debt repayment.

Agency Theory

Agency problems also influence the maturity of the debt. The conflicts of interest between two parties in case of agency cost of debt are two parties involved; one is debt holders and the second is stakeholders. According to Myers (1977) underinvestment problem occurs due to agency cost of debt. Stakeholders are reluctant to invest in ventures that bounce back small revenues, whose returns are expected to serve the creditors only; in this way, they forgo the growing opportunities, which ultimately reduce the firm's market capitalization because the present value of its assets determines the market capitalization. Myers (1977) proposes different ways to minimize this problem, i.e., firms need to use shorter maturity debt. The agency hypothesis is also linked with organizations' leverage; agency cost is higher in highly levered firms than firms with low leverage (Custodio et al., 2013). As per the argument of Myers, the maturity of debt should be reduced when growth opportunities exist so that debt may be matured before the expiration of growing opportunities. Hence, the growth opportunities impact the maturity of debt due to the underinvestment problem.

Trade-Off Theory:

According to this theory, the optimum level of debt maturity for creating a market value of firms is a dynamic trade-off of bankruptcy cost associated with debt and tax benefit of debt. Tax advantage further depends on the rate of taxes and yield curve rate, and bankruptcy depends on the volatility of the firm. So, the term yield curve is an essential factor that determines debt maturity. Furthermore, debt maturity depends upon interest rate because the choice of debt maturity depends on floatation cost. When the floatation cost is upraised, companies favor to utilize a long term loan to evade high floatation costs. Therefore, firms use short term debt because there is a positive theoretical and empirical connection among interest rate and debt maturity (Newberry and Novack, 2001); (Gordan, Roger and Lee, 2007).

Significance of the Study

This study contributes to the available body of literature in the area of ownership structure and corporate debt maturity for the Non-Financial sector of Pakistan in numerous ways, from a theoretical perspective and it imagines conveying a more comprehensive point of view in the area of financing decision through ownership structure. It provides the additional information to the researchers to make the decisions in this regard. The research also benefits the shareholders as they equally get the returns on their made investment. In addition, the results of this study are of priceless importance to management of Pakistani companies in their choice process as well as their struggle to optimize their firms' worth from a practical point of view. This study also investigates the role of foreign shareholding and investment companies' shareholding in financing and investing decisions of the firms. Findings of this study are helpful for corporate managers and decision makers regarding financing decisions, investment decisions and other decisions.

Literature Review

Numerous studies have investigated that corporate debt maturity is an essential instrument to look at corporate insiders. In addition, short-term debt helps lenders to monitor borrowers through more standard refinancing and renegotiations of agreement terms (Demirgüç-Kunt and Maksimovic, 1999).

Ahmad and Shah (2020) investigated the effect of institutions' ownership on the firm's performance listed in PSX from 2007 to 2011. They applied the OLS approach to finding the relationship among variables. They found that return on assets was significantly negatively related to institution possession. In contrast, the size of the company and growth options are significantly positively correlated to them. Pakistanis- listed organizations utilized 57 percent leverage in their capital structure while ownership has 30 percent persuaded to take debt.

Udin, Shahab, Khan, Muhammad & Khan. (2021) Explore the relationship between corporate debt maturity and firm performance of manufacturing firms listed in stock exchange. They find that firms having institution's ownership have a substantial positive impact on return on assets and size of the firm which describe that institutional stockholders play a vital role in cultivating a firm's financial performance. Moreover, the result of the study suggests that there is positive linkage between internal ownership with ROE.

Ahmad and Matemilola (2018) examine the effect of firm-level issues and instructional factors on corporate debt maturity on listed firms of Africa. In demand to eliminate the endogeneity issue, the study used panel data of moments. Study's findings revealed a vibrant method of adjustment to the most satisfactory level of debt maturity. Moreover, organization-specific factors like leverage, assets maturity and size of the firm can give proper support for the contract cost, signaling theory, and maturity matching hypothesis. Finally, findings of instructional factors show that high-performance institutions have a long term loan maturity structure.

Ogaluzor (2019) explores the connection between shared ownership and a firm's monetary performance in Nigeria. They used the data for the year 2016. In order to control heterogeneity, firm size is used in organization specific characters. In addition, the GLS approach is used because of cross-sectional data. They found that ownership meditation is significantly negatively linked to financial performance. At the same time, there exists a positive connection between managerial possession and financial performance. Moreover, the study recommends that policy tendency towards shared ownership distribution in Nigeria's well-established regulatory authorities maximizes the firm's performance.

Block and Liao (2013) reported that companies with surplus cash flow do not utilize long-term debt because of information asymmetry. The authors also clarified that debt maturity diminishes the cost of information asymmetry amongst investors and management. Additionally, there is a discouraging association among firms' cashflow unpredictability and maturity of debt, and organizations with uncertain cash flows may expel from the secondary market. This outcome is parallel to Custodio and Johnson (2013).

El Ghoul et al. (2019) and Khurana and Wang (2015) examined the impact of exceptional reviews and accounting conservatism to substitute debt to maturity to reduce transaction and agency costs. Ghoul et al. (2016) found that the portion of long-term loans in firms' capital structures ascends with the help of three senior auditors, while Khurana and Wang (2015) locate that debt having shorter maturity is negatively related to accounting conservatism. Finally, Cutillas and Sánchez (2014) record direct proof on the job of short-term debt in

alleviating overinvestment and underinvestment by analyzing the effect of transient debt on efficiency.

Orman and Koksal (2017) conducted a study on Turkish non-financial firms. They used a sample size of 12,687 companies' from2005 to 2015 and tested a fixed-effect model. The study found that agency theory and liquidity theories are consistent, particularly in the case of small and big publicly traded firms. However, signaling theories are relevant only when a sample of Govt. owned firms can use them. Results of the study also suggest that highly levered firms take longer debt maturity. However, the small size of assets is significant. Therefore, their result is different that depending on the nature of the organization. They also found that debt maturity decisions are influenced by economic conditions, inflation, and volatile interest rates.

Wael Rouatbi (2018) explores that controlling shareholders can bear the cost of principles of self-interested behavior. They use organization resources for their benefit. Such conduct can lead the principles to prefer long-term debt, to keep away from regular monitoring by lenders. The study found that multiple large shareholders can use short-term debt. Results also suggest that multiple large shareholders can reduce the extraction of personal remuneration by the owners and curb their preference of fever monitoring throughout the use of longer-maturity debt.

Saedi and Mahmoodi (2018) conducted a study to observe the affiliation amongst firms' performance and capital structure of the firm using the sample size of 310 listed firms in Tehran Stock exchange during the period 2008 to 2014. Authors used ROE, ROA as dependent variables. The study revealed that earning per share; Tobin's Q has a substantial and optimistic influence on capital structure and return on assets significantly negatively related to capital structure. In contrast, capital structure and ROE has an insignificant relationship.

Paulo Renato Terra (2017) studied theories of debt maturity structure in different countries' construction to realize country-specific constraints using panel data analysis. He finds a considerable vibrant element in the fortitude of firms' debt maturity. To achieve optimal debt maturity, firms face modest adjustment costs. The determinant of maturity of debt and this outcome is parallel among the USA. They used different techniques of the panel data model. Results show that the maturity of the debt increases when the size of the firm increases and vice versa.

Afraz and Shah (2017) study the effect of ownership possession on debt maturity on Pakistani listed companies. They used a sample size of 365 firms from 1997 t0 2012. They found that different ownership companies have different debt maturity. Although demand-side factors are also in charge of such a decrease in maturity, the supply-side factor has a more prominent effect on the decline in debt maturity.

Nazim Ud din, Khan, and Hosen (2019) inspect the role of corporate governance on the decision-making of leverage structure of organizations from 2004 to 2017. Panel data is used to find the results in this study. They found that governance attributes like size and managerial possession are the main factors for deciding leverage. The results indicate that size of the firm; ownership has a primary function in the conclusion making of leverage structure. Moreover, the study proves that political and family relationships in governance mechanisms significantly affect leverage decisions.

Silva, Rita and Ramalho (2018) inspect the impact of family ownership structure on the firm's leverage. They also explore the influence of the 2008 global crisis on the capital structure of the family-owned business. Study finds that family-owned firms are positively related to organizations to be found in metropolitan areas. However, there is no effect on small firms located out of the metropolitan area. They also found that the crisis of 2008 was considerable. However, diversified effect on family-owned firms leverages, and after 2008 these firms are in more need to use debt.

Methodology

This study collects data of only 78 non-financial firms listed in the PSX Pakistan Stock Exchange from 2004 to 2016. The principal source of this data is Balance Sheet analysis, and some of the data is collected from managerial ownership. The loans granted to the private sector are collected from the State Bank of Pakistan (SBP) under the economic data panel. While selecting the sample, we excluded the firms with negative equity. Also, we excluded the public utility firms because these firms are not independent in debt maturity decisions and are regulated in different ways. Firms with massing observations are also excluded from the sample. Non-Financial sectors, e.g. textile industry, cement industry, energy sector, and sugar industry, whereas financial companies like banking, insurance companies, and leasing companies are not included in this study.

Estimation Model

We have used panel data in this study and panel data analysis to find out the association among debt maturity, debt maturity determinants, and ownership structure components such as individual ownership, foreign ownership, and investment companies' ownership.

In panel data analysis, data for more than one sample unit is collected over some time. Both time series and cross-section are pooled together in panel data. In panel data, we use a sample of many individual units over some time. There is heterogeneity in these sample units. We can take this heterogeneity into account by using panel data estimation by checking individual variable-specific effects. More cross sections are available over the period in panel data, so there is less collinearity among variables. There is also more variability and more freedom in data and the data is more informative for analysis. In the panel, we use repeated cross-sections to make data more efficient to study the dynamics of change. Panel data analysis is used to measure and study those phenomena which are not measurable by using simple cross-sectional or time-series data. Panel data is categorized into two categories: balanced panel data and unbalanced panel data. It depends upon the availability of data for the individual sample units over some time. In balanced panel data for all observations, data is used for the same period. In unbalanced panel data for all observations is not for an equal period. Both types of data are used in panel data estimation; both give proper estimation with little methodology usage.

The essential methods for panel data analysis are pooled OLS regression, fixed effect regression, and random effect regression. In pooled OLS regression (common effect), the intercept and coefficient are constant across the time series and cross-section. Fixed effect regression is used to consider the fixed cross-section effect in which the intercept is cross-section specific. It also controls the effect of time-invariant characteristics of the cross-section (for the individual firm-specific). Finally, in random effect regression, the cross-section effect is considered fixed, and dummies are used to check the effect in the intercept. At the same time, the coefficient is typical for the cross-sections and time series.

The entire test regarding handling the panel data includes auto-correlation, Heteroskedasticity, and cross-sectional dependence. Heteroscedasticity means that the data is not humongous. Spread is also not the same as a regression line. Therefore, heteroscedasticity causes biases in our regression results. Due to heteroskedasticity remain efficient and consistent, but it affects standard error, which ultimately affects t-statistics; due to effects on t-statistics, some significant relationships become insignificant, and some insignificant relationships become significant, which causes biases in our results. Furthermore, due to this problem, f-statistics can be disturbed. Finally, our decision-making becomes inefficient because the regression line does not remain the best fit in the presence of heteroscedasticity.

The problem of auto-correlation exists when there are patterns in data; it also biases our regression results. Chances of auto-correlation are higher in the case of daily or weekly data. As we move towards monthly or yearly data, chances of auto-correlation become low. In the existence of auto-correlation, there is no effect on beta. It remains efficient and consistent, and error term variance becomes inconsistent. The standard error may increase or decrease, which ultimately causes significant and vice-versa.

Econometric model

This study has used a panel regression model for testing our hypotheses. Debt maturity is the dependent variable in all regressions.

In this study, two equations, namely demand and supply, are used to substantiate the impact of ownership structure on debt maturity and the reason for declining debt maturity in the last few years. Furthermore, whether firm's own characteristics (demand-side factor) are responsible for this decline or may the debt market (supply-side factors) be responsible. Equations are given below.

Demand-side Regressions

$$\mathrm{DMit} = \alpha\mathrm{it} + \beta 1\ \mathrm{ASMATit} + \beta 2\ \mathrm{FSit} + \beta 3\ \mathrm{LEVit} + \beta 4\ \mathrm{NWCit} + \beta 5\ \mathrm{DPOit} + \beta 6\ \mathrm{INDit} + \beta 7\ \mathrm{FWit} + \beta 8\ \mathrm{INVit} + €\mathrm{it}$$

Supply-side Regressions

$$\mathrm{DMit} = \alpha\mathrm{it} + \beta 1\ \mathrm{ASMATit} + \beta 2\ \mathrm{LEVit} + \beta 3\ \mathrm{NWCit} + \beta 4\ \mathrm{LGPSit} + \beta 5\ \mathrm{DPOit} + €\mathrm{it}$$

Debt Maturity is a dependent variable in the above equations. At the same time, FS has used an independent variable representing the firm size. ASMAT represents asset maturity, which is used as an independent variable. LEV is used independent variables which represent leverage, IND is also an independent variable which is deputation of individual ownership, INV reports investment companies' ownership which has been used as an independent variable, FO is deputation of foreign ownership which have been used as an independent variable, DPO is an abbreviation of dividend payouts which have been used as an independent variable. Whereas,

IRepresent several cross-sections used in this study.

represent the period of study.

αRepresents the regression constant.

bRepresents the co-efficient for all variables.

εRepresents the error term

Explanation of Variables

Dependent Variable

Debt maturity:

In this study, Debt Maturity is used as a dependent variable. There is not any generally accepted definition of debt maturity. Many researchers have measured the maturity of debt in different ways. Barclay and Smith (1995) considered long-term debt that has a maturity of more than three years. Antoniou et al. (2006) used in their studies and measured long term loans as the proportion of debt maturity after one year.

$$DM = \frac{\text{Debt maturing in more than one year}}{\text{TotalDebt}} \quad \text{..... (i)}$$

Independent Variables

Firm size:

Firm size is used as an independent variable. Moreover, because of information asymmetry and a small number of assets, small organizations face difficulty issuing longer-maturity debt. Therefore, study uses the natural logarithm of the firm's total assets as a proxy for firm size.

Firm Size = Natural Log of Total Assets……. (ii)

Dividend Payout

There are a few intermediaries used to figure out the dividend's payouts. For this reason, the majority of the past studies utilized an intermediary of dividend payouts to decide the dividend policy of the firm as Rath (2005), Al-Malkawi (2007), Gugler (2003) and Ahmed and Attiya (2009) used in their study while Kumar (2006) utilized intensity of dividend as an elective dummy for the dividends payouts. Hence, the formula is to determine the dividend payouts as aggregate dividends divided by profit after tax.

$$\text{Dividend Payouts} = \frac{\text{Total amount of Dividend paid}}{\text{Profit after Tax}} \quad \text{..... (iii)}$$

Leverage:

Literature provided that leverage is used as a proxy of firms debt issuing capabilities. For this reason, total liabilities divided by total assets is used to appraise the firm's debt issuing capability. Thus, leverage can be measured as the total debt ratio to the firm's total assets (Venugopalan 2013).

$$\text{Leverage} = \frac{\text{TotalLiabilities}}{\text{TotalAssets}} \quad \text{..... (iv)}$$

Asset Maturity

According to the maturity matching approach, debt maturity should be matched with the life of the asset to avoid the refinancing and reinvestment issue because when the life of assets is greater than the life of liability; cash inflows from assets will come later, but liability come due earlier than the cash inflows, and now the firm needs finance to meet that liabilities. However, on the other hand, when the life of assets is lesser than the life of liability through which that asset is financed; the cash flows will come earlier, and liability will come due to the latter firm may face difficulty in investing those cash flows at a required rate or those finances may remain idle firm has to bear the cost of those idle funds.

Assets maturity = Natural log of fixed Assets ..... (v)

Individuals Shareholding

Individual's shareholding means a shareholder or stockholder is a sole individual or corporation legally owned shares of the company are known as individual shareholding or individual ownership. An individual shareholder might invest in different companies to maximize wealth and make a portfolio to avoid the risk of investing in one company. The data of individual holding are available in the balance sheet of the companies.

Investment Companies

The companies whose primary business is holding securities of different companies or firms for investment purposes to get the ultimate profit. The data of investment companies are available in the balance sheet of the chosen companies as a percentage of ownership held by the investment companies.

Foreign Companies Investment

Foreign ownership or foreign control of the business or holding a company's shares by an individual who is not a citizen of that country or companies holding shares of different companies outside that country. In other words, the companies acquire the establishing business operations or business assets in another country. The data on foreign ownership is available in the balance sheet of the companies.

Net Working Capital

$$NWC = \frac{\text{Total Current Assets} - \text{Total Current Liabilities}}{\text{Total Assets}} \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad \text{(vi)}$$

Results and Findings

Descriptive Statistics

The descriptive is used to describe data in a defined and meaningful manner. For example, descriptive statistics explain the essential characteristics of dependent and independent variables, such as minimum, maximum, mean, median, and standard deviation.

Table 4.1: Descriptive Statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
DM	867	.282	.219	.011	.814
ASMAT	867	.521	.207	.056	.927
FS	867	15.964	1.463	12.836	20.195
LEV	867	.542	.235	.108	1.441
NWC	867	.095	.234	-.711	.664
DPO	867	.332	.437	.014	2.886
IND	867	0.2	.168	.010	.948
FW	867	.066	.183	.001	.949
INV	867	.011	.053	.000	.776

Note: The dependent variable is DM which represents debt maturity. The independent variables are Assets maturity ASMAT, Dividend Payout, Foreign ownership, Firms size, IND represent individual ownership, Investment Company's ownership, Leverage and NWC, which represents Net working capital.

The results of descriptive statistics demonstrate that the mean value of DM debt maturity is 0.282. It means firms use an average of 28.9 % long term debt. The maximum and minimum value of debt maturity is .814 and .011, while the standard deviation of debt maturity is 0.219. The maximum and minimum value of assets maturity ASMAT is .927 and .056. The mean value of assets maturity is 0.521. The standard deviation of assets maturity ASMAT is 0.207. FS is the abbreviation of firm size. The minimum value of FS firm size is 12.836, and the maximum value of firm size is 20.195, while the standard deviation of firm size is 1.463. The mean value of FS is 15.964.

The maximum value of LEV is 1.441, and the minimum value is 0.108. The mean value of leverage is 0.542, which means that firms can use 54% leverage. LEV is the abbreviation of leverage. The standard deviation of leverage is 0. 235. The standard deviation of dividend payouts DPO is .437, while the maximum dividend payouts are 2.886. The minimum value of dividend payouts is .014. The mean value of dividend payouts is 0.332. This value shows that the average dividend payouts DPO ratio is 33%.

FW is the abbreviation of foreign ownership. The mean value of foreign ownership is 0.066, which means that the average foreign ownership in each firm is 6.6%. The standard deviation of FW foreign ownership is 0.183. The minimum value of foreign ownership is .001, and the maximum value of foreign ownership is.949.IND is an abbreviation of individual ownership. The mean value of individual ownership is 0.2. This value shows that the average individual ownership is 20% in all firms. The maximum value is .948, and the minimum value is 0.010. The standard deviation of IND individual ownership is 0.168.

INV is an abbreviation of investment companies' ownership. The mean value of investment companies is 0.011. NWC is the abbreviation of networking capital. The value of the mean is .095, which means that the average net working capital of the firms is 09%. The standard deviation of NWC net working capital is .234, while the maximum NWC value is .664, and the minimum value is -.711.

Correlation Analysis:

Correlation analysis is complete to check the nature and strong point of the connection among dependent and independent variables. Results of the correlation analysis in Table no.4.2 show the nature and forte of relations among dependent and dependent variables and between independent variables.

Table 4.2: Correlation Analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) DM	1.000								
(2)ASMAT	0.717	1.000							
(3) FS	0.201	0.147	1.000						
(4) LEV	0.136	0.135	-0.053	1.000					

(5) NWC	-0.199	-0.599	0.004	-0.745	1.000				
(6) DPO	-0.152	-0.132	0.198	-0.264	0.235	1.000			
(7) IND	0.065	0.135	-0.330	0.097	-0.154	-0.127	1.000		
(8) FW	0.205	-0.183	0.126	-0.140	0.169	0.171	-0.196	1.000	
(9) INV	0.032	0.026	0.041	0.042	-0.045	-0.013	-0.075	0.009	1.000

Note: The dependent variable is DM which represents debt maturity. The independent variables are Assets maturity ASMAT, Dividend Payout, Foreign ownership, Firms size, IND represent individual ownership, Investment Company's ownership, Leverage and NWC, which represents Net working capital.

Correlation shows the association between the variables. For example, debt maturity is positively correlated with assets maturity 0.717. When debt maturity increases, assets maturity also increases if an asset maturity is less than the maturity of debt firms tends to bear a cost.

Debt maturity is negatively correlated with dividend payout -0.152. Because when firms pay dividends that will not be able to repay the repayment of debt. Debt maturity is positively correlated with foreign ownership 0.205 because when foreign ownership increases, debt maturity also increases. Firm size is certainly correlated with debt maturity 0.201. Individual ownership positively correlated with debt maturity 0.065. Debt maturity is positively correlated with leverage 0.136. Because when debt maturity surges, the leverage also increases. Debt maturity is negatively correlated with net-working capital -0.199.

Asset maturity is negatively correlated with dividend payouts -0.132. Foreign ownership is also negatively correlated with asset maturity -0.183. Assets maturity is positively associated with firm size 0.147 as big firms' asset maturity is higher than smaller firms. Asset maturity is also positively correlated with individual ownership 0.135. Investment companies' ownership is positively correlated with assets maturity 0.026. Assets maturity is positively correlated with leverage 0.135. Finally, net working capital is positively correlated with assets maturity -0.599.

Firm size is negatively correlated with individual ownership -0.330. Investment companies' ownership is positively correlated with firm size 0.041. Firm size is negatively correlated with leverage -0.053. Net working capital is positively associated with company size 0.004 since big companies have additional net working capital than smaller firms.

Dividend payouts are positively correlated with foreign ownership 0.171. Firm size is positively correlated with dividend payouts 0.198. Dividend payouts are negatively correlated with individual ownership -0.127. Dividend payouts are negatively correlated with investment companies' ownership -0.013. Leverage is negatively correlated with dividend payouts -0.264. Net working capital is positively correlated with dividend payouts 0.235.

Foreign ownership is positively connected with firm size 0.126. Individual ownership is negatively correlated with foreign ownership -0.196. Foreign ownership is positively associated with investment companies' ownership 0.009. Leverage is negatively correlated with foreign ownership -0.140. Net working capital is positively correlated with foreign ownership 0.169.

Individual ownership is negatively correlated with investment companies' ownership -0.075. Individual ownership is positively associated with leverage 0.097. Net working capital is negatively correlated with individual ownership -0.154. Investment companies' ownership is positively correlated with leverage -0.042.

Demand Side Regression Analysis

Table 4.3: Impact of Demand Side Variables on Debt Maturity

Variables	Coef.	St.Err	t-value	p-value	Sig.
C	-1.317	0.084	-15.76	0.000	***
FS	0.019	0.005	3.76	0.000	***
LEV	0.862	0.027	31.80	0.000	***
NWC	1.225	0.027	44.55	0.000	***
DPO	-0.013	0.007	-1.93	0.054	*
IND	-0.006	0.021	-0.30	0.763	
FW	0.022	0.017	-1.29	0.005	**
INV	0.022	0.057	0.40	0.691	

R-squared	0.792	Number of obs	867
F-test	329.133	Prob> F	0.000

*** p<0.01, ** p<0.05, * p<0.1

Redundant Fixed Effects-Likelihood Test

This test is used to know which model is suitable, e.g., fixed-effects model or the random-effects model.

Effects Test	Statistic	D.f.	Prob.
Cross-section F	5.49811	-77,806	0.000
Cross-section Chi-square	376.567	77	0.000

The probability result is significant 0.000 shows that the null hypothesis is rejected, which means that a fixed effect is used in this study.

Random Effects Hausman Test

Test Summary	Chi-Sq.Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	25.553733	8	0.0013

The test is used to know which model is best for study probability, which shows that the fixed effect model is appropriate for this study.

Explanation of Fixed Effect Model (Demand side)

Random effects Hausman test shows that the fixed effect model is suitable for the study. Table 4.3 reports the significant and positive association among debt maturity and assets maturity. It indicates that as asset maturity increases, debt maturity also increases. The positive relationship between them is that companies try to match the maturity of their assets to the maturity of their debt. This result is also consistent with the result of Guedes and Opler (1996) they found that organizations match the debt maturity with the life of assets to avoid the difficulties of refinancing when the debt matures before the generation of cash flows from its assets. They also reported avoiding the risk of reinvestment when there is mismatching of assets life and debt maturity.

The result of the fixed-effect model also shows that there is a positive relationship among the size of the company and debt maturity. It means that when the firm size increases, the maturity of debt also increases. The result is consistent with Shah and Khan (2019). This positive association among firm size and debt maturity can be clarified that in Pakistan, the firms mostly get loans from the banking sector. Banks provide loans on the collateral security of the assets of the firm. Larger firms will give more collateral security to get long-term loans, and smaller firms will not get long-term loans due to less collateralizable assets. This finding of the confident connection among company size and maturity of debt is steady with the agency cost theory and also consistent with Stohs and Maurer (1996), Ozkan (2002) and Attaullah Shah et al. (2006).

Results also show a positive and significant relation among the maturity of debt and the firm's leverage. It indicates that the leverage of the firm increases as the maturity of debt increases. This result is also unswerving with Richard et al. (2000). Dennis et al. (2008) also reports the positive connection between debt issuing abilities and maturity of debt because agency cost of under-investment may well be constrained by minimizing the ability to issue loans. Results of Table 4.3 also show the important and positive relationship among net working capital and maturity of debt. It indicates that when net working capital increases, the maturity of debt also increases. It means that defensive net working capital management restricts the firm to take short-term debt. This result is supported by Paulo Renato Terra (2018).

Foreign Investment Company's ownership also reports a positive and significant relationship with the maturity of the debt. It means that when the foreign ownership increases, debt maturity also increases. It indicates that firms having more percentage of foreign ownership have better debt maturity. The result is also consistent with Barcaly and Smith (1995), showing that organizations with more percentage of foreign ownership have better management and have longer-maturity debt.

Table 4.3 shows the result of demand-side regression in which the fixed effect model is used. The dependent variable is DM debt maturity, while firm size, asset maturity, net working capital, leverage, dividend payouts, individual holding, investment companies holding' and foreign ownership are independent variables. The value of Adjusted R Square is 0.859984. It indicates that all independent variables explain 85% variation in debt maturity, and the probability is less than 5%, indicating that the model is fit.

Supply Side Regression Analysis

Table: 4.4 Impacts of Supply-Side Factors on Debt Maturity

Variable	Coefficient	Prob.
C	-0.344	0.000
ASMAT	0.774	0.000
LEV	0.274	0.000
NWC	1.225	0.000
LGPS	0.000	0.014
R-squared	0.763103	
Adjusted R-squared	0.719357	
F-statistic	17.44423	
Prob(F-statistic)	0.000	

Explanation of Fixed Effect Model (Supply-side)

Table 4.4 shows the results of the fixed effect method of supply-side regression. In supply-side regression, we further examine the reason for the decrease in the maturity of the debt. Because supply-side factors significantly influence organizations' debt maturity reported by Peterson and Faulkender (2006). We include one new variable, LGPS, which represents loans granted to the private sector in supply-side regression. Because organizations debt maturity also depends upon debt approved to them. The study invites/seeks attention to examine whether the lack of enthusiasm of banks to issue debt of longer maturity is responsible for this decrease.

Table 4.4 shows that the LGPS loans granted to the private sector significantly and positively affect debt maturity. It indicates that supply-side factors have a more prominent effect on debt maturity than demand-side factors. The supply-side factors are more responsible for a decrease in debt maturity than other factors. This result is also consistent with Robert and Lemmon (2010) and Custedio et al. (2012).

Results also reported significant and positive correlation among asset maturity and maturity of the debt. It means when asset maturity increases, the maturity of the debt also increases and when the asset maturity is decreased, debt maturity is also decreased. The connection between leverage and debt maturity is also significant and positive. It shows that when leverage increases, debt maturity also increases. Results also show a significant and positive connection among networking capital and debt maturity.

The value of the adjusted R square is 0.719357. It means that all independent variables, i.e., asset maturity, net working capital, loan granted to the private sector, dividend payouts, and leverage, show 71% variation in debt maturity. Therefore, the value of probability is less than 5% indicates that the model is fit.

Conclusion

This study has been conducted to find empirical evidence of an influence of ownership structure on corporate debt maturity for non-financial firms listed in the Pakistan Stock Exchange. This study's objective was to find out the empirical validity of different theories in developing economies like Pakistan; these theories include the maturity matching hypothesis and agency cost hypothesis. Based on literature and theoretical viewpoints, we have considered asset life, firm size, net working capital, and leverage as essential determinants of debt maturity and also considered individual ownership, foreign ownership and investment companies' ownership as the components of ownership structure. In this study, a sample of 80 companies from different industries from 2004 to 2016 has been taken. Panel data regression and fixed effect model are used for statistical analysis.

This study finds a significant connection among debt maturity and firm size, assets maturity, net working capital and foreign ownership. The positive and significant relationship between debt maturity and firm size confirms the agency cost hypothesis that small firms have more growth options and use short-term loans and larger firms use long-term loans. There is a substantial association among net working capital and maturity of debt, which confirms that when net working capital increases, firm debt maturity also increases, the relationship between leverage and debt maturity is also significant, which confirms that when debt maturity increases, the leverage of the firm increases. Moreover, study finds a significant positive relationship among foreign ownership and debt maturity, which confirms that when the percentage of foreign ownership increases, the debt maturity also increases. The study also found that loan granted to the private sector significantly and positively affects debt maturity. It indicates that supply-side factors have a more prominent effect on debt maturity. These factors are more responsible for a decline in debt maturity as associated to other aspects. This result is also consistent with Robert and Lemmon (2010) and Custedio et al. (2012).

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