Volume 10 | No. 1 | January– June 2023

Sukkur IBA Journal of Management and Business
P-ISSN: 2313-1217
E-ISSN: 2410-1885

Exploring the Effects of Firm - Specific Factors on Capital Structure: An Empirical Investigation of Pakistan's Engineering and Textile Sector

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Abstract

The core purpose of the study is to estimate the power of firm-specific factors (liquidity, size, tangibility, tax rate, profitability, etc.) on the capital structure of the firms. Furthermore, to compare the capital structure of the engineering and textile industries listed in the Karachi Stock Exchange (KSE) Pakistan. Various methods such as the fixed effects model and F-Test & Hausman test for the selection between fixed and random effect models. These techniques have been applied to the data to determine the impact of aforesaid variables on the capital structure of the firms. For this purpose, annual data of aforesaid variables have been collected and analyzed from 2010 to 2019. The fixed effects model results indicate a significant positive and negative relationship between selected variables. This relationship is of great importance to firms and policy-making perspectives as these factors reflect information about (optimal) capital structure decisions and can have important implications for the engineering & textile industries.

Keywords: *Capital structure, hybrid securities, leverage, liquidity, policy maker, engineering, textile.*
JEL Code: O16, O42. P27

Introduction

Capital structure refers to the concept of how firms finance their operations using multiple combinations of equity, debt, or hybrid securities. The main distinction in capital structure is to rely primarily on debt or equity financing. The debt-to-equity ratio represents the firm's leverage. There are different factors and characteristics/attributes of firms that affect or influence the capital structure of the firm, and the firm should try to explore what the best mix of financing is. "Determining the capital structure/leverage level is a complex issue, so after analyzing a number of factors, the firm establishes / forms the required capital structure that becomes the optimum level." The use of more debt will bring risks to the firm's profit stream, but a higher level of borrowing usually leads to a higher expected rate of return and a higher risk associated with more debt is likely to lower the firm's stock value. At the same time, the higher expected return makes stocks more attractive to the investor. This, in order, eventually restores the value of the stock.

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The findings of this study help to recognize the impact of these factors on the capital structure. The study focuses on the following variables: leverage (LG), liquidity (LIQ), profitability (PF), size (SZ), tangibility (TN) and tax (TX) using annual panel data from 2010 to 2019. The companies included in this study model are to compare the wealth arrangement of the engineering and fabric industries listed in KSE Pakistan. To be more precise, we will use the regression analysis to understand the influence of the variables mentioned above.

The financial performance of a corporation is a key consideration for existing and potential investors. Corporate existence is influenced by its financial performance. "A successful (popular) corporation is advantageous to all stakeholders and its performance is closely linked to financial decisions.

This present study is also one of a series of research papers on the capital structure for the discovery of potential firm specific factors that theoretically and practically contribute to existing literature. This study focuses on the analysis of the capital structure of the textile and engineering industries in Pakistan and its performance analysis. This study makes it easier for shareholders and finance managers to understand the 'impact of firm specific factors on capital structure decisions. This research also encourages the selection of the ideal capital structure while testing the effects of variables that can directly or indirectly influence them. The textile industry is leading the industry in Pakistan and the engineering industry also plays an important role in the non-financial sector in Pakistan.

The (optimal) capital structure is where the value of the firm is maximized and the cost of capital minimized. Theoretically, external financing (borrowing) generally offers the minimum cost of capital due to its tax deductibility, but usually increases the risk of the firm as debt increases. "Determination of optimal capital is the main requirement of any corporate finance sector. "Does the "optimal capital structure" of firms depend on firm-specific variables? Capital structure varies across firms on the basis of their own characteristics. "The aim of this study is to find that there is any impact of firm specific factors (liquidity, size, tangibility, tax rate, profitability, etc.) on the selection of capital structure in Pakistan's textile and engineering sectors?

Literature Review

Capital Structure

The selection between the capital structure (the debt source and the equity source) is part of the current competitive environment with the crucial financial decision-making that the firm is facing. Capital structure decision-making is one of the most imperative choices that convey to the firm how to organize (raise) and operate their funds in the business. "The capital structure of a company that focuses on 'debt and equity' or the combination of these two resources," as Steffen et al., (2019) concluded that, "the wealth construction is a mixture of liability and, equity financing. The capital structure comprises debt (long-term

and short-term loans, bonds) and equity (preferred stock, common stock and retained earnings).

Profitability and Capital Structure

The profitability of a company is a significant indicator (factor) of the capital structure. Profitability is one of the key pillars of the decision on capital structure. In the present study, profitability shows the profit or profit that indicates how the firm performs (well or not) and can directly affect the firm's leverage. Many scholars have used success as regulator capricious and have identified a variety of (positive and negative) outcomes.

According to the pecking order theory, firms with higher profitability use a smaller amount of debt. Myers et al., (1984)"found a pecking order philosophy that ropes a undesirable association among success and, smooth of economic leverage. Conferring to POT, correlation between profitability and leverage is negative. Firms with higher profitability are able to finance their operations with retained earnings (internal financing) and to borrow if internal resources are insufficient (Gilal et al., 2021; Khan et al., 2022).

As a result, profitable firms will prefer their own resources to the firm's operations. "This is why Mayers and Majluf (1984) supported the POT, which predicts the negative correlation between the profitability of the firm and the firm's financial leverage level. The punched order theory has also been verified and the inverse relation between income and financial leverage was estimated by Frank and Goyal (2020). "They also argued that the cost of bankruptcy is less than the tax shield benefit more valued for profitable firms. Deesomsak et al., (2004) also revealed a significant and negative relationship between profitability and borrowing (debt).

This recommended to managers that firms should use more debt to finance the company's operations by issuing equity shares on the basis of the asymmetrical information that exists between managers and investors. Awan et al., (2021) found that there was a negative and significant relationship with the "capital structure." Similarly, Awan et al., (2021) recommended that companies that could make extra profits would first use their internal financing and then go to debt financing for their operations.

Firm Size and Capital Structure

In the present case, the size of the enterprise is also relevant and generally agreed. In extrapolating the capital structure, the size of the product' plays an important role. "The size of the company is one of the factors that influence finance. So many analytical works are available that transmit the importance of corporate size in the decision-making process. According to Ruud (2011), a company is the key capital structure factor affecting companies in borrowing (debt) decisions.

Past empirical studies indicate that the relationship between the company's size and capital structure/debt level is significant. The relationship between corporate sized and capital

structure, (debt level), is illustrated by two of the most widely used theories of capital structures. The first key theory is the POT, and the second is the theory of trade off.

Liquidness and Wealth Construction

Liquidness is an additional firm-specific factor that affects the capital structure. Previous research studies have shown that liquidity is also a key determinant of capital structure. It can directly affect the financial leverage (total debt ratio) of the firm. Various scholars have used this factor in their studies for the reason that it has a direct effect on shareholder or investor decisions and increases (decreases) the firm's liquidity levels that affect firms' borrowing decisions. Tugba et al., (2009); Zheng et al., (2019) have suggested that the liquidity of a firm that helps in (borrowing) 'debt financing decisions is one of the most important indicators of the capital structure.' The more liquid firms are less likely to be in financial distress because of the firm's ability to meet their short-term/debt or debt obligations and because of this, which enhances investment confidence.

Tangibility and Wealth Construction

Corporate tangibility is also an important element in making decisions on capital structure. A company's material assets are obligatory to come into the life of a corporation, which means that businesses with more tangible or physical assets may be more in debt than businesses with less physical assets. Accounting of real estate gives corporations bargaining control. Some businesses have opportunities for lower tax rates to obtain debt.

Empirically, there are disputes/conflicts about the relationship between the level of tangibility and the level of financial leverage. Past readings show mixed estimates of the relationship between the tangible assets of the firm/tangibility and the borrowing or leverage. Past empirical studies have been discovered on "the basis of capital structure theories. "Different theories on" capital structure predicts change / different link between the tangibility of the firm and the leverage level. "Two theories are commonly used, namely "Pecking Order Theory (POT) and Trade-Off Theory."

Tax and Capital Structure

The tax rate is another vital indicator or factor in the structure of capital. The tax rate is also used as an independent variable in this study. By including 'debt (borrowing) as per the company's wealth assembly, the tax payment is ultimately reduced because the interest expense is deductible on the use of the debt's financing. Accordingly, the payment of each euro in interest can save 35 per cent of the tax rate for investors. "Those firms with more leverage in their capital structure will have to pay more interest / payment and this higher amount of interest will save the owner's extra tax rate. Recommends direct linear link / relation between the debt and the tax revenue.

According to Shah and Hijazi (2006), the capital structure being tax-reducing expenditure reduces the tax obligation in the form of an amount or payment which is due to increase cash flows after tax liability. To this end, firms will increase their cash flows and the

market price / value will rise to a higher level of debt if the tax rate is high. Thus, the correlation between the tax rate and the leverage ratio is significant and positive. "Modigliani and Miller (1963) "specified that those firms prefer to use more debt (borrowing) than those firms that use equity resources and are tax-deductible on interest/payment charges. They, therefore, argue that the firm should take the interest rate risk and enjoy the tax benefit/savings on the interest amount payable.

Hypothesis and Conceptual Framework

Based on past studies, the correlation between dependent and independent (explanatory) variables has been established in the subsequent propositions:

H1: Profitability has a significant impact on leverage.
H2: Tangibility has a significant effect on leverage.
H3: Liquidity has a significant impact on leverage.
H4: The size of the firm has a positive/negative significant impact on leverage.
H5: Tax has a positive and significant impact on leverage.

A framework is a diagrammatical representation of the variables, and this displays the clear relationship between independent variables and independent variables (see Figure 1a).

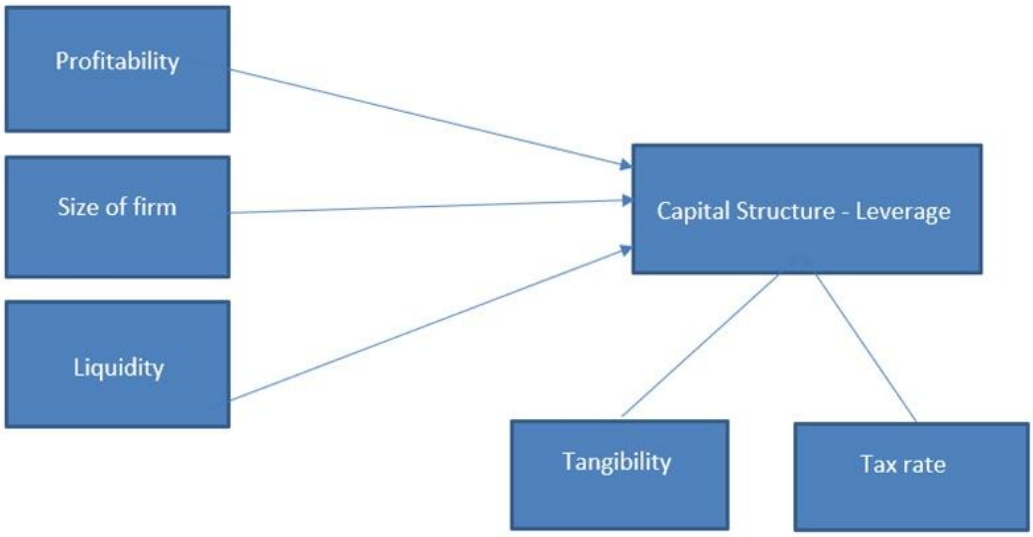

Figure 1a: Conceptual Model

Data and Methodology

Here are two categories for research studies, i.e. Qualitative and Quantitative. Qualitative research involves dealing with the quality of data and requires certain qualitative

phenomena. However, there are huge numbers of sections in quantitative research. Qualitative research deals with observation and interviews, so it plays an important role in behavioral studies to identify underlying (core) motives. Research that deals with statistics is called quantitative research. This study is based on quantitative methods. This includes tax (TX), profitability (PF), liquidity (LIQ), tangibility (TN) and size (SZ) impact on the capital structure to analysis the financial behavior of both (textile and engineering) industries.

The current study will use panel data analysis for analysis. The data was collected from the publication of the State Bank of Pakistan (SBP). Analysis of the financial statements of non-financial companies listed on the Karachi Stock Exchange for the year 2010 to2019. The sample includes a total of 70 companies (35 companies from the engineering industry and 35 from the textile industry). The debt ratio is used as a proxy to measure the leverage of the non-financial sector.

Econometric analysis is done using the EViews 7.0 software, which is a statistical tool. It is very handy for time series and panel estimation. The current research employed three (3) figures, namely: OLS, fixed-effects model, and random-effect model. They calculated the least square model panel on assuming that there are no classes or individual effects between companies.

The data in the panel contains both time series and cross-sectional elements. It includes data from an experimental panel which looks at a time frame to give a true image of the relationship between variables. Panel data provides many advantages in time series and cross-sectional data measurements. By means of panel data analysis, the three following regression models are described.

To select between the above-mentioned methods, i.e.: 1) common constant method or 2) fixed effect method or 3) random effect method. For "this objective, first apply the F-test to choose between (Common constant & fixed effects)." If the F-critical value is less than the F-statistic value, this shows that the F-test method is better than the common constant method. In addition, we also used the Hausman specification test to check whether the Random Effects Model or the Fixed Effects Model describes comparatively better results (See Figure 1b).

Table 1: Research Design

ITEM	**EXECUTION**
Sample Size	• 70 KSE listed non-financial firms of Pakistan for the past 22 years (i.e. from 2010 to 2019) • A total of 1456 panel data observations. • 35 Engineering firms • 35 Textile firms
Type of Data	Quantitative and panel

Data Sources	Annual reports and publications of SBP
Sampling Technique	Objective/Purposive sampling based on data availability
Software	E-views 7.0

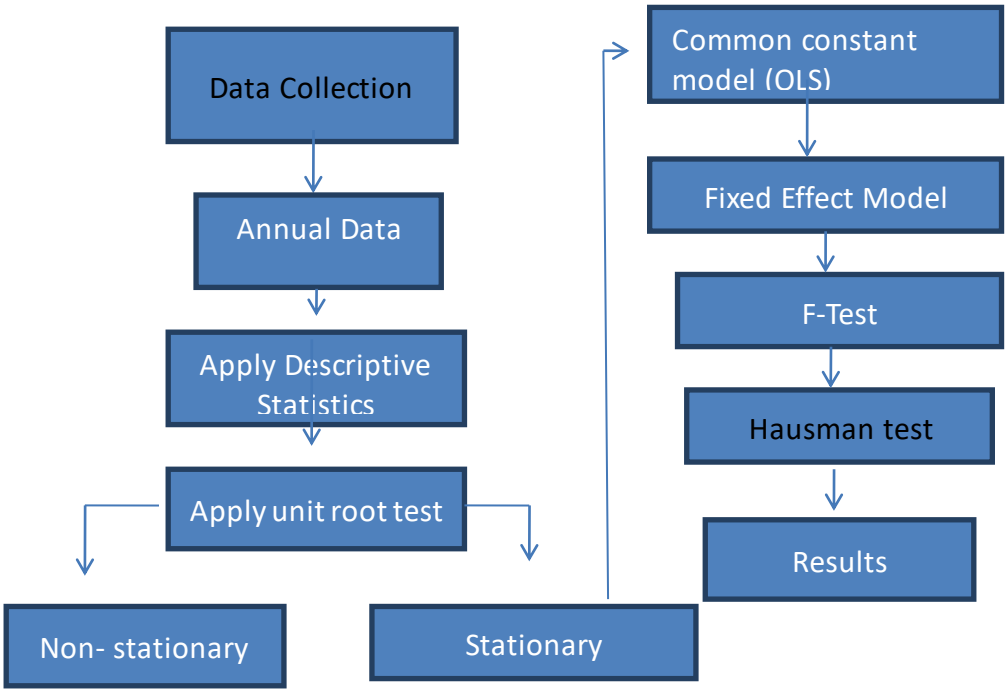

Figure 1b: Flow Diagram

Econometric Model

The following model has been developed for testing.

$$LG_{i,t} = C + \beta 1TX_{i,t} + \beta 2PF_{i,t} + \beta 3LIQ_{i,t} + \beta 4TN_{i,t} + \beta 5SZ_{i,t+} + \varepsilon_{i,t}$$

Where:

$LG_{i,t}$ = Leverage of the firm i at time t

$TX_{i,t}$ = The tax of the firm at i time t

$PF_{i,t}$ = Profitability of the firm i at time t

$LIQ_{i,t}$ = Liquidity ratio of firm i at time t

$TN_{i,t}$ = Tangibility of the firm i at time t

$SZ_{i,t}$ = The size of the firm i at time t

C = Common y-intercept

β1- β5 = Coefficients of the concerned explanatory variables

$\varepsilon_{i,t}$ = Error term

When C is constant and β1, β2, β3, β3, β4, β5 are slope parameters.

In the above econometric model; Profitability, Firm Size, Tangibility, Liquidity and Tax Rate are used to measure firm-specific factors. The next section will provide information on dependent and independent variables. The following table shows how the above variables have been measured and with their expected signs regressed.

Data Analysis, Discussion and Results

Descriptive Statistics

The following section presents the overall sample (Engineering & Textile) of the descriptive statistics from the cumulative data without taking into account that industry dummy. The calculation needed for descriptive statistics has been estimated by means of "mean and standard deviation.

Table: 2 Descriptive Statistics for Overall Sample (Engineering & Textile)

	Leverage	**Liquidity**	**Profitability**	**Size**	**Tangibility**	**Tax**
Mean	15.68207	2.89999	0.226477	9.35244	0.428183	0.211463
Maximum	5689.05	875.037	278.3044	17.5415	3.12611	23.4029
Minimum	0.00054	-5.0086	-4.12820	3.47506	0.00000	-80.0000
Std. Dev.	285.033	31.5290	7.29727	4.02386	0.22546	2.52947
Observations	1456	1456	1456	1456	1456	1456

The above Table 2 shows descriptive statistics such as mean, standard deviation, minimum and maximum leverage and other firm specific factors such as: tax, profitability, liquidity,

resilience, size for the entire period 2010 to 2019 for the Pakistan engineering sector. This table shows that companies in the (Textile & Engineering) sector (overall sample) use an average leverage of around 16%, which means that these firms are heavily indebted for long-term decisions in this sector.

Correlation Analysis

Before assessing the model coefficients, the data sample was also verified for multi-collinearity. Estimates are shown in Table 5.2, which shows that the majority of cross-correlational terms for explanatory variables (independent variables) are relatively small and have found no reason to worry about the problem of multi-collinearity among independent variables.

Table: 3 Correlation Matrixes for Overall Sample (Textile & Engineering)

	Leverage	**Liquidity**	**profitability**	**Size**	**Tangibility**	**Tax**
Leverage	1.000					
Liquidity	-0.00498	1.000				
Profitability	0.42053	-0.00183	1.000			
Size	-0.07347	0.05043	-0.03268	1.000		
Tangibility	-0.09900	0.00431	-0.05226	-0.73813	1.000	
Tax	-0.00373	-0.00445	-9.97E-0	0.04894	0.01383	1.000

The correlation matrix of the variables used in this analysis is shown in Table 3. It is obvious that between the explanatory variables there is no question of multi-collinearity. No explanatory variable may replace any other independent variable completely or in close contact. It indicates the negative association between currency, productivity and tax and accepts the theory of punching order, while size and tangibility are positive and rejects the theory of picking order and embraces trade as a theory.

Regression Investigation

Regression is a method used to analysis the relationship between variables. Regression is the mathematical methodology used. We must determine the form of regressive model before starting a regression analysis. To evaluate the panel data, our calculation of two different models, such as the fixed and a random effect model. It is difficult for the investigator to choose the correct model from the panel data.

Table 4: Regression Results with Fixed Effects Model for Overall Sample
Dependent Variable: Leverage

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	168.9196	23.94806	7.053583	0.0000
Liquidity	-0.066575	0.216676	-0.307255	0.7587
Profitability	12.49470	0.874894	14.28139	0.0000
Size	-2.551188	1.638702	-1.556835	0.1197
Tangibility	-308.3382	40.23815	-7.662833	0.0000
Tax	0.050375	2.518929	0.019999	0.9840

Table 5: Other Statistics with Fixed Effect Model

R-Square	Adjusted R-Square	F-Statistics	Prob.	Durbin-Watson
0.345176	0.311583	10.27530	0.000000	0.310021

Table 6: Regression Results with Random Effect Model for Overall Sample (Engineering & Textile)
Dependent Variable: Leverage

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	100.2718	20.34472	4.928643	0.0000
Liquidity	-0.004833	0.196905	-0.024546	0.9804
Profitability	16.17411	0.851367	18.99781	0.0000
Size	-4.676550	1.550034	-3.017032	0.0026
Tangibility	-103.9700	27.62011	-3.764285	0.0002
Tax	0.075909	2.454475	0.030927	0.9753

Table 7: Other Statistics with Random Effects Model

R-Square	Adjusted R-Square	F-Statistics	Prob.	Durbin-Watson
0.18713	0.184327	66.76078	0.000000	0.312867

Table :8 Correlations Random Effect-Hausman Test

The Cross-Sections Random Effects

Test summary	Chi-Sq Statistic	Chi-Sq. d.f	Prob.
Cross-section random	333.365345	5	0.000

Interpretations of Regressions Results

Based on the Hausman test, we have decided that the fixed effect model is a more appropriate / adaptable model. "We therefore estimate the regression with a fixed effect model to measure the leverage on the total (combined) sample of (Textile & Engineering) non-financial sector specific variables using this study panel of 70 firms listed in KSE Pakistan for the period 2010 to 2019. The general statistic suitability/fitness of the regression model is indicated by the probe > F= 0.000, indicating that the model is appropriate.

The R Squared value states that our selected (independent variables, such as tax, productivity, liquidity, materiality and height of the remaining 66 is explained or clarified by the 34 per cent (dependent variables) difference in leverage. Table: 8 "shows the positive association between profitability and leverage (debt) with a coefficient value of 12.4947 and statistically significant with a p-value of 0.000." It shows the leverage would increase by 12,4947 if one unit increases profitability. It also indicates that productivity and competitiveness have positive ties with each other and that Baker (in 2002) carried out an study for all the non-financial industries as a whole (companies are listed on KSE Pakistan), which notes that productivity and leveraging are positive.

Booth (2001) has also a successful debt-profit partnership. This positive relation of profitability and leverage specifies that companies with higher profits use more leverage and prefers debt financing in Pakistan's sector (textiles and engineering). With a p-value of 0.9840, the relation between tax and leverage is negligible at the coefficient value of 0.05037. The optimistic indication of a stable relationship of tax and leverage, however, is consistent with the principle of trade-offs and is in line with previous studies; Ghafoor and Sajid (2014). Taxation changes do not result in adjustments in leverage.

Descriptive Statistics

The following section presents descriptive statistics from cumulative data without taking into account that industry dummy. The calculation needed for descriptive statistics has been estimated by means of mean and standard deviations.

Table 9: Descriptive Statistics for Engineering Industry

	Leverage	Liquidity	Profitability	Size	Tangibility	Tax
Mean	0.650713	1.252858	0.049775	8.327419	0.318620	0.147532
Maximum	6.063449	10.64927	1.054481	17.12640	3.126146	18.68421
Minimum	0.000000	-5.008641	-0.538711	0.000000	0.000000	-80.0000
Std. Dev.	0.477197	1.037710	0.137565	4.698344	0.230178	3.253175
Observations	762	762	762	762	762	762

The above Table 9 indicates the descriptive statistics alike mean, standard deviation, minimum and maximum of leverage and other firm-specific factors like tax, profitability, liquidity, tangibility, size throughout the span 2010 to 2019 for engineering sector of Pakistan. This table indicates that companies in the engineering sector uses leverage on average at 65% approximately which means that these firms' debt heavily for meeting long term decisions in this sector.

Correlation Analysis

The sample data for multi-collinearity was also established prior to the calculation of the model coefficients. Results are shown in Table 5.1.2 which shows that the majority of cross-relationship terms for independent variables are reasonable and found no cause for concern / concern about the issue of multi-collinearity between independent variables.

Table 10: Results of Correlation for Engineering Industry

	Leverage	Liquidity	Profitability	Size	Tangibility	Tax
Leverage	1.000					
Liquidity	-0.194845	1.000				
Profitability	-0.343095	0.419289	1.000			
Size	0.156075	0.416486	0.267798	1.000		
Tangibility	0.292104	-0.13435	-0.24397	0.178534	1.000	
Tax	-0.002812	0.004877	0.034781	0.065020	0.023070	1.000

The table of the variables used in this analysis reveals a matrix of correspondence 10. It is obvious that the explanatory variables are not multi-coordinated. No explanatory variable may replace any other independent variable completely or in close contact. It shows the

negative correlation between liquidity, competitiveness and tax and complies with the theory of punch order, while dimension and tangibility have a positive correlation and rejects the theory of pick order and embraces exchange. According to the table above, the maximum association between leverage and productivity is about 0.42.

Unit Root Test

Livin, Lin & Chutest was used to check for stationary economic variables. Time series data is expected to face the problem of being non-stationary and to address this non-stationary issue, the "Livin, Lin & Chu root test" is used. "If all variables are integrated at level zero as the data is stationary otherwise the lag orders are increased means the differences are taken until the time data is completely stationary."

Table: 11 Unit Root Test (Levin, Lin & Chu) for Engineering Firms data

VARIABLE	STATISTIC	INTEGRATED AT
Leverage	-2.78152 (0.0027)**	Level
Profitability	-2.30957 (0.0105)**	Level
Firm Size	-16.9270 (0.0000)**	Level
Liquidity	-4.01193 (0.0000)**	Level
Tangibility	-2.40551 (0.0081)**	Level
Tax rate	-12.5819 (0.0000)**	Level

The result in the above table shows the stationary data of the panel at level 0. "Results are significant and H0 has been rejected and H1, i.e. data is stationary, has been accepted." This shows that the estimates made using this data will lead to results that are not spurious. "As data for all variables included in this model are stationary showing that all shocks within it are temporary and will lose their impact in the long run."

Regression Analysis

The regression method used to research the relation among variables is a statistical tool. We must choose the type of regression model before starting the regression analysis. Our projections of two different models, like a fixed and altered effect model, are used for panel data analysis. The researcher has trouble selecting the correct model / method in the

data panel. Consequently, the regression calculation relies on other variables. Based on the assumptions, the model that is appropriate for the analyses is calculated.

To check whether a fixed-effect model or a specific constant model is correct, the testing must be performed until the fixed-effect approach is accurate. A standard F-Test is used to check fixed effects with a simple pooled OLS method just prior to this collection. When null hypothesis is rejected, we must now use a fixed effect approach, which means we do not use a common constant method. The F-Test results in the F-statistic value (2.6002) > F-critical value (1.8408) such that a null hypothesis is dismissed, that we prefer a stationary effect form over one common constant.

The next step is to distinguish between methods for fixed and random results. In this study, we evaluate both models (fixed and altered effect models) and then apply the Hausman test to the results of the altered effect model. Based on the Hausman test, we will determine which model, either the fixed effect model or the random effect model, is suitable for this study. As in the current study, all models (fixed and random effect model) are calculated and the Hausman test is applied to random effect model results.

Table 11: Regression Results with Fixed Effects Model for Engineering
Dependent Variable: Leverage

Variable	Coefficient	Std. Error	T-Statistics	Prob.
C	0.90	0.043955	20.49896	0.0000
Liquidity	-0.160121	0.016516	-9.694914	0.0000
Profitability	-0.839683	0.113015	-7.429822	0.0000
Size	0.010410	0.003481	2.990342	0.0000
Tangibility	-0.295421	0.081910	-3.606649	0.0000
Tax	-0.003223	0.003860	-0.835023	0.4040

Table 12: Other Statistics with Fixed Effect Model

R-Square	Adjusted R-Square	F-Statistics	Prob.	Durbin-Watson
0.527725	0.502214	20.68639	0.000000	0.877046

Table 13: Regression Results with Random Effect Model for Engineering
Dependent Variable: Leverage

Variable	Coefficient	Std. Error	T-Statistic	Prob.

C	0.785800	0.051609	15.22603	0.0000
Liquidity	-0.136475	0.015957	-8.552675	0.0000
Profitability	-0.880302	0.111184	-7.917524	0.0000
Size	0.014288	0.003402	4.200237	0.0000
Tangibility	-0.121742	0.0762626	-1.596364	0.0000
Tax	-0.003117	0.003847	-0.210367	0.4180

Table 14: Other Statistics with Random Effect Model

R-Square	Adjusted R-Square	F-Statistics	Prob.	Durbin-Watson
0.190703	0.185351	35.62892	0.000000	0.797516

The Hausman test is applied to compare the process for the fixed effects and the random form. If p-value' in 5 percent relevant level is higher than chi-square, we reject the null hypothesis and reject the null hypothesis using a fixed-effect model and do not have any systematic variations in both models. Above table: 5.1.5 shows that the null E hypothesis (Xit, eit) is not equivalent to zero, it means that the particular entity has to be compared with the error term and the null hypothesis is dismissed, because it is less than p-value 0%, less than 5% sense. Hausman Test therefore provides a fitting test for a test with fixed effect. Each entity has a common path, but different intercepts in a model with a fixed-effect.

Table: 15 Correlations Random Effect-Hausman Test

The Cross-Sections Random Effects

Test summary	Chi-Sq Statistic	Chi-Sq. d.f	Prob.
Cross-section random	55.200192	5	0.0000

Table: 16 Cross-section Random Effect Test Comparison

Variable	**Fixed**	**Random**	**Var(diff)**	**Prob.**
Liquidity	-0.160121	-0.160121	-0.136475	0.0000
Profitability	-0.839683	-0.839683	-0.880302	0.0450
Size	0.010410	0.010410	0.014288	0.0000
Tangibility	-0.295421	-0.295421	-0.121742	0.0000
Tax	-0.003223	-0.003223	-0.003117	0.7376

Interpretation of Regression Results

On the basis of the Hausman test, we have decided that the fixed effect model is an appropriate model. We therefore estimate the regression with a fixed effect model to measure the leverage on various engineering companies that are non-financial sector-specific variables using this study panel of 35 Engineering sector, including both (Automobiles & Electronics) listed in KSE Pakistan for the period 2010 to 2019.

The overall statistical fitness of the regression model is indicated by the prob > F = 0.000, which means that the model is fit. R-Squared indicates that the 53% change in leverage is explained or clarified by tax, profitability, liquidity, resilience, size, while the remaining 47% is explained by unknown factors / variables not included in this study. The Adjusted R2 is a little less than the R2 and is indicated as 50 percent.

Table: 16 shows an inverse relationship between profitability and leverage with a coefficient value of-0.8396 and a statistically significant p-value of 0.000. It shows that the leverage will be reduced by 0.8396 if one unit of profitability increases. This negative association between profitability and leverage, consistent with the pecking order theory, and this negative correlation between profitability and leverage, specifies that firms with higher profitability in Pakistan's engineering sector are using less leverage and prefer to use internal sources of financing such as retained earnings, surplus or equity.

Descriptive Statistics

The following section presents descriptive statistics for the Textile industry from cumulative data without taking into account that industry dummy. The calculation that is needs to be done for descriptive statistics has been estimated through "mean and standard deviation.

Table 17: Descriptive Statistics for Textile Industry

	Leverage	**Liquidity**	**Profitability**	**Size**	**Tangibility**	**Tax**
Mean	29.16090	4.26594	0.38096	9.4930	0.49692	0.25518
Maximum	5689.50	875.037	27.8.304	17.5415	0.99785	23.4029
Minimum	0.00054	6.09E-05	-4.12820	3.66356	0.00000	-7.69034
Std. Dev.	392.605	43.4264	010.0603	4.00031	0.21107	1.28048
Observations	766	766	766	766	766	766

Table 17 Indicates the descriptive statistics 'like mean, standard deviation, minimum and maximum leverage and other firm's specific factors such as tax, profitability, tangibility, size for the period 2010 to 2019 of the Pakistan textile sector. This table indicates that the

leverage used by businesses in the textiles industry is 29.16 percent on average, indicating they are indebted.

Correlation Analysis

The sample data for multi-collinearity was also established prior to the calculation of the model coefficients. Table 18 shows the findings that the majority of inter-relationship definitions for independent variables is rational and does not pose any questions regarding multi-linearity between independent variables.

Table 18: Correlation Matrix for Textile Industry

	Leverage	Liquidity	Profitability	Size	Tangibility	Tax
Leverage	1.0000					
Liquidity	-0.00726	1.0000				
Profitability	0.42009	-0.00297	1.0000			
Size	-0.10447	0.06232	-0.04971	1.0000		
Tangibility	-0.16978	-0.00728	-0.08318	-0.07589	1.0000	
Tax	-0.01263	-0.01436	-0.00252	-0.01435	-0.01345	1.0000

The correlation matrix used in this analysis is shown in Table 18. It is obvious that between the explanatory variables there is no question of multi-collinearity. No explanatory variable may replace any other independent variable completely or in close contact. This table shows the negative connection between liquidity, tangibility and sized and "admits the picking order theory with another negatively correlated factor levy, and rejects a favorable connection between picking order and productivity theory and rejects the picking order theory and embraces the tradeoff theory."

Unit Root Test

The Unit Root Test (Levin, Lin & Chu) test was used to check the stability of the economic variables. The time series data is expected to face the problem of being non-stationary and to address this non-stationary problem, the Unit Root Test (Levin, Lin & Chu) test is used. It tells of the existence or absence of the roots of the unit. If all variables are integrated at level zero as the data is stationary otherwise the lag orders are increased means the differences are taken until the time data is completely stationary.

Table 19: Unit Root Test (Levin, Lin & Chu) for Textile Firms data

VARIABLE	STATISTIC	INTEGRATED AT
Leverage	-1.47668 (0.0699)**	Level
Profitability	-4.10665 (0.0000)**	Level
Firm Size	-14.2795 (0.0000)**	First Differenced

Liquidity	-11.2012 (0.0000)**	First Differenced
Tangibility	-1.60435 (0.0543)**	Level
Tax rate	-6.08258 (0.0000)**	Level

The result in the above table: 19 shows the stationary data of the time series at level 0 and 1. LEV, PF, TN, and TX are stationary at 0. While SZ and LIQ are stationary on level 1. Results are significant and H0 has been rejected and H1, i.e. data is stationary, has been accepted. This shows that the estimates made using this data will lead to results that are not spurious. As data of all variables included in this model are stationary showing that all shocks in it are temporary and will lose their impact in the long run.

Regression Analysis

Regression is a learned statistics for analyzing the relationship between variables. We must choose the type of regression model before starting the regression analysis. The research assesses two separate models for panel data analysis, for example a random model and a fixed-effect model. The researchers have difficulty selecting the suitable model in the panel results. To check whether a fixed-effect model or a specific constant model is correct, the testing must be performed until the fixed-effect approach is accurate.

A typical F-Test is used to test fixed effects with a simple pooled OLS method just prior to this collection. When null hypothesis is dismissed, we must now use a fixed effect approach, which means we will not use a common constant approach. In this analysis the F-Test results in an F-statistic value (1.976) > an F-critical (1.84087). The null hypothesis that the Fixed Effects method is preferred over the traditional continuous method is therefore rejected. The next step is to choose between fixed effects and approaches to random effects.

In this analysis estimate and apply a Hausman test to random effect model results in both models (fixed and random effect model). Based on the Hausman test, we are able to determine what model, whether the fixed effect model or the random effect model, is optimal for this analysis. This study estimates all models and applies the Hausman test for the effects of the random effect models. There is no systematic difference in coefficients; it is a zero hypothesis for the Hausman test.

We must use a fixed-effect-model when this hypothesis is rejected with a p-value less than 0.05 and the result is zero. It means that the particular entity is related to the mistake word. The E (Xit, eit) is not equal to zero. On the other hand, the Random Effect Model is stronger if E (Xit, eit) = 0.

Table 20: Regression Results with Fixed Effects Model for Textile Industry

Variable	Coefficient	Std.Error	T-Statistic	Prob.
C	429.7549	51.48191	8.347689	0.0000
Liquidity	-0.129273	0.290781	-0.444572	0.6568
Profitability	11.59205	1.179431	9.828508	0.0000
Size	-4.538860	3.036780	-1.494629	0.1354
Tangibility	-725.5659	82.56536	-8.787776	0.0000
Tax	-3.208022	9.229664	-0.347577	0.7283

Table 21: other statistics with Fixed Effect Model

R-Square	Adjusted R-Square	F-Statistics	Prob.	Darbin-watson
0.382351	0.349171	11.5370	0.0000	0.335406

Table: 22: Regression Results with Random Effect Model for Textile Industry
Dependent variable: Leverage

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	245.479	41.7236	5.88346	0.0000
Liquidity	-0.01228	0.26424	-0.04648	0.9629
Profitability	15.7423	1.14405	13.76011	0.0000
Size	-9.3292	2.88128	-3.23788	0.0013
Tangibility	-267.133	54.6242	-4.89038	0.0000
Tax	-3.74211	8.94572	0.418313	0.6758

Table 23: Statistics with Random Effect Model

R-Square	Adjusted R-Square	F-Statistic	Prob.	Durbin-Watson
0.20394	0.198704	38.94079	0.00000	0.310147

Table 24: Correlations Random Effect-Hausman Test
The Cross-Section Random Effects

Test Summery	Chi-Sq. statistic	Chi-Sq. d.f	Prob.
Cross-section random	209.57903	5	0.0000

The results of Hausman specification test show that fixed effects model is better than random effect model.

Table 25: Cross-section Random Effects Test Comparisons

Variable	Fixed	Random	Var.(diff)	Prob.
Liquidity	-0.12927	-00.01228	0.014730	0.3351
Profitability	11.59204	15.74230	0.082200	0.0000
Size	-4.53886	-9.329264	0.920261	0.0000
Tangibility	-725.5658	-267.1333	3833.231	0.0000
Tax	-3.20802	-3.74211	5.160838	0.8141

Interpretations of Regressions Test

We determined, based on the Hausman study, that the model with fixed effect was a suitable model. Therefore, we estimate a regression of 35 textile firms listed in the KSE Pakistan during the period 2010 to 2019 with a fixed effect model to calculate the leverage of various textile companies which are non-financial sector-specific variables by using this analysis. The total regression model's statistical accuracy is indicated by the prob > F = 0.000, so that the model is fit. The R2 shows that price, competitiveness, liquidity, tangibility, and business size account for 38 percent of leverage shifts, while the remainder clarifies 62 percent by unconsidered variables not included in this analysis. The value for the Adjusted-R2 is less than R2 and 35 percent.

Table 21-25 indicates a favorable relationship with a coefficient value of 11.5920 between productivity and leverage. The rise in one unit's productivity also indicates that the leverage will grow by 11.59. The positive correlation between profitability and leverage supports the principle of trade-off, and a positive link between profitability and leverage suggests that the textile sector's more competitive companies tend to use more leverage than equities. The results are also consistent with the researchers' findings.

Conclusion

The main purpose of this study was to explore the impact of selected firm-specific factors (tax, profitability, liquidity, tangibility and size) on the leverage of a total of 70 firms (35 from the engineering industry and 35 from the textile industry) listed on KSE Pakistan. This study used panel econometric methods, namely pooled OLS, fixed effects and random effects. Leverage was used as an explained/dependent variable and was measured by the debt ratio. The debt ratio includes both long-term and short-term debt. The study focused on the past transition period from 2010 to 2019.

The results of the firm's specific capital structure factors of the selected Pakistani industries are consistent with past studies and fully explain the effect of these factors on the capital structure in interpreting the regression results. There are two main theories that describe the effect of these factors on the firm's leverage, indicating both (positive and negative) the correlation between dependents. The first is the trade-off theory, and the second is the pecking order theory. For analyzing the financial actions of companies, the impact of company-specific factors on decisions on its capital structure was calculated by a global/combined analysis of the two sectors, the engineering and textile sectors and by a separate analysis of both.

The expected results are consistent in terms of liquidity in the engineering industry, indicating that firms with sufficient liquidity should use debt financing, followed by continued earnings for growth and other activities. The estimated results are consistent in terms of the tangibility between selected industries that firms holding more tangible assets should borrow more than firms with risky and intangible assets.

Managerial Implications

Current research promotes understanding of the effect of firm-specific variables on the capital structure by financial managers, shareholders and financial institutions. In large companies, the Agency's expenses can be reduction by requiring sound management/structure. When following the principle of the punching order, the cost of interest payment may be reduced. Companies should achieve a balance between debt funding costs and benefits by choosing a (optimal) capital structure to preserve all stakeholders' benefits.

Limitations and Future Recommendations

As the sample was taken from the textile and engineering industries, the results can only be generalized to those industries. In this study, several specific factors are considered to examine their impact on the capital structure of the firm. However, different elements could also be useful and clarified for the determination of the capital structure, for example: country specific factors, ownership structure, corporate governance, age of the firm and family ownership, and so on from the results of this study, it may be concluded that Job satisfaction has a significant influence on affective, continuance, and normative commitments. The job itself and supervisors are highly significantly correlated with other job facets. A Reward system is seen to be significantly correlated with job-itself, supervision, and coworkers, whereas coworkers with the job itself, reward system, and supervision. The meaningfulness of the job is also highly significantly correlated with the job itself, coworkers, and supervision. However, no significant connection was found between the meaningfulness of the job and the reward system. A highly significant positive correlation was found between job satisfaction and organizational commitment in bank employees at Hyderabad city. The level of job satisfaction was the same in employees of Islamic and Conventional Banks.

The same types of studies are recommended to be carried out in those countries where both Islamic and Conventional banking systems are operating simultaneously. In the light of findings of the present study, it is strongly recommended that every year HRM department of both types of banks should carry out this type of confidential structured survey to measure the level of job satisfaction and organizational commitment present in their employees. In this way, both types of banks can plan strategies to improve the level of job satisfaction and organizational commitment in their employees and hence enhance their productivity performance to achieve the targets set for the next year.

Compliance with Ethical Standards: As corresponding author, I confirm that the manuscript has been read and approved for submission by all the named authors. There is no conflict of interest. Meanwhile, there is no experiment related to human or animals during research.

Author Contributions: This article is the result of joint work by all authors, who equally contributed to conceive, design, and carry out the research. All authors collaborated in analyzing the data, preparing the results, visualization and writing the paper.

Conflicts of Interest: The authors declare no conflict of interest and agreed to submit the manuscript.

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