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International Journal of Business and Management Sciences
Volume 02(01), 2021

Capital Structure and Its Factors: Empirical Evidence from Pakistan's Pharmaceutical Firms

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Keywords:

Capital Structure, Total Liabilities, Total Assets, Net Assets

ABSTRACT

The purpose of this study is to examine the influence of non-financial sectors such as the pharmacy and chemical industry on their financial performance in Pakistan. The sample contains non-financial firms with data about 43 companies of five years. The two steps GMM in directive to evaluate the coefficients and other statistics of interest. The core outcomes, additional than half of the cross-section heterogeneity of the leverage ratio comes from variations. The profitability is the only variable that is practically reliable, in scale, sign, and significance, through the changed measures of leverage. In the course of this study future scholars require to evaluate the chemical and pharmacy zone with additional sectors at the Pakistan Stock Exchange (PSX) and State Bank of Pakistan (SBP).

INTRODUCTION

The capital structure shows in what way a firm finance its actions through engaging dissimilar causes of capitals i.e., Liability or Equity. Investment typically states toward a company's debt-to-equity ratio, this illustrates in what way risk has taken a company is to place capital in and later benefits the stockholders in capital decisions making. The uncertain situation engages a business that takes debt using the main portion of its investment, it takes high leverage and a later higher

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degree of risk. The pressure laid on the liability establishes worth and stable capital structure which should be best for the company and investors as well. Two different measures such as book leverage and market place defined a distinct capital structure. The variation through book value of debt and market leverage whereas the latter is considered by the worth of market value and a book value of Liability as well (Kayo & Kimura, 2011). Different concepts such as old-style, pecking order, trade off-theory of irrelevance, and free cash flow theory stood to establish toward regulating the optimum blend of capital structure. Capital structure, its factors, and its outcome on a company's worth remain the areas that attract numerous authors' attention. Though, individually an insufficient study stood conducted towards test the outcome of stock return and investment choices (Yang, et al., 2010).

Modigliani and Miller (1958). By that time, they remained of the understanding that a company's worth remains not affected by a company's investment choices. Later they researched a similar area and then create outcomes differing from their previous findings (Al Najjar, 2011). Today results nearby investment remain considered significant aimed at companies to maximize their return. The optimum mixture of investment is one that not individually keeps the permanency but then correspondingly improves the company's capital. In addition, an incorrect turn might principal the company to financial volatility or suffering. A query arises if such results remain therefore significant before which chief drivers of the investment are essential to be addressed through making a decision? How does the optimum level of the capital structure remain achieved? Large research remained directed on this topic but then again silent the scenario is imprecise and no optimum combination of liability and equity remained determined. Company-associated issues that can distress its capital structure selections have taken main importance between many additional factors affecting these results as well as specific institutional factors of the country (Masnoon & Anwar, 2012). The research intention on such areas is dual i.e., issues that affect the company's investment. In addition, in what way do such choices organize and enhance the company's value and wealth? Dissimilar variables associated with the company's features, corporate governance ownership structure and have remained acknowledged that can support to select the suitable quantity of liability and equity. This chance can enhance the company's value. In the situation of Pakistan, individually scarce research remains initiate and to regulate the factors that can principal to the dissimilar selections for investment. Still, such studies presented those significant variables that required to be found in developed countries. Overall, theories and studies contrast in their importance and have not any single level of liability that remains determined and

can help the company to improve its value. Earlier results have no agreement near the importance of the issues defining the capital structure. Pakistani background has a little research, and also no agreement about the factors' significance which proposed the need for research in Pakistan on this topic and exactly for Pharmaceutical firms. In brief, there is a need to discover factors affecting the capital structure and the key driving issue of Pharmaceutical companies in Pakistan. An investment determination is a morally financial problem area, and all the data is quantitative and historical.

LITERATURE REVIEW

In this area, the basis for the research is of point of view that a company's worth is not precious by company's capital selections and providing the perfect market expectations which are satisfied (Modilgilani & Miller, 1958). Essentially putting, in flawless markets investment selections do not matter. This proposal is known as the "MM theory of irrelevance". Soon afterward after this theory creation, researchers started to show attentiveness towards the capital structure as a research area that discovered the market limitation and can lead capital structure to enhance the worth of the company. Later on, earlier expectations were raised relaxed and tax was added to the model. It is obvious by the study that additional debt obligations can support increasing the worth of a company (Modigliani & Miller, 1963). Variances in the cost of exterior funding methods (market limitation) a company makes to select a different amount of liability and capital to gain the optimum level of capital structure (Bevan, Danbolt, 2002).

The trade-off model which is another controlling theory adopts the trade-off among the tax gain and the liquidation of the cost of debt financing. This theory adopts that the optimum investment is decided by the trade-off among cost and compensations of debt financing and also keeps the constant capital structure. As per this model a company is measured by replacing equity for debt and vice versa till a level remains attained where the capital structure is enhanced (Myers, 1984). The benchmarked capital structure is another view of this theory; where the company takes benefits by counterbalance the cost. Here the company considers the benefits of a tax shield against the cost of financial suffering first by the tradeoff theory (Beattie, et al., 2006).

On the other hand, a company that thinks the minor cost of suffering pay additional obligation (Graham & Harvey, 2001). The uniform trade-off concept consumes a recognized basis for investment causes but on the decreased or increased debt level, while company performances are unanswered (Chen, 2004). Myers and Majluf (1984) find that organizations are gainful and make

higher incomes which are expectable to the usage of less debt capital comparison with equity to those that make low incomes. Sheel (1994) presented that all the ratios of a firm's loan capital (debt) causes and factors are considered, excluding organizational size, which remains important to describe debt behavior differences. Graham (2000) takes part under the company's specific profit base to approximate with the aim of the capitalized tax advantage of debt equals 9.7% of the company's value. The individual company might twice tax benefits through distributing liability in hope of the marginal tax advantage begins to decline. It remains conditional that how violently a company uses obligation through noticing the form of its tax advantage utility. Unexpectedly, liquid, huge, money-making company using little expected suffering overheads practice debt as expected. Product marketplace aspects, growing options, low-level asset security, furthermore preparation meant for upcoming expenditures lead to traditional debt practice.

Traditional policy related to debt is determined. Hennessy and Whited (2005) advance an active trade-off theory caused by factors inside the system selection of leverage, distributions, and actual investment in the occurrence of advanced company income tax, specific interest through taxes and company distributions, economic suffering costs, and flotation costs on equity. The learning clarifies numerous experimental conclusions unpredictable through the standing trade-off-theory and demonstrates that here remains lack of target, leverage ratio companies can stand investors levered heavily, and dependent path leverage is leverage declining in protected liquidity and, varies leverage is negative through the outside finance weighted average. They find the replicated model using the evaluation of structural parameters moments that match data moments.

Chiang et al., (2002) outcomes demonstrate productivity in the sense of the interconnectivity of profitability and capital structure, this sample is for learning and contains 35 companies registered in Hong Kong. Rahemanet al., (2007) show the capital structure, an important outcome on the profitability for non-financial companies registered on Islamabad Stock Exchange. Mendel, et al., (2006) examine finance performance crosswise the companies in the products of forest business through association learning among the debt and theorized taxes in finance theory. In testing the theoretic association among intended capital structure and taxes at 20 publicly forest traded businesses for the eons 1994-2003, the study discovered a negative association among debt as well as profitability, where it is a positive relationship among tax shields (non-debt), and debt, which creates a relationship in negative between the company's size and debt.

In pursuance of Abor (2005) and examine an association among the structure of capital and profitability of Ghana Stock Exchange registered companies, and discovered an important relation which should be positive among the short-term debt ratio to the asset in total, and ROE also shows a negative association among debt of long-term to asset in total and ROE. Gill, et al., (2011) tried and find extended concern in Abor's (2005) findings, and capital structure outcome towards profitability through inspecting the result of American service, and manufacturing companies' profitability towards the capital structure. The 272 New York Stock Exchange, registered American companies were taken as a sample, for 3 years period from 2005 – 2007. The correlations, and regression analyses used to approximate functions connecting to profitability, measured by return on equity through procedures related to capital structure. The results observed and demonstrate positive attachment between the short-term debt ratio to assets in total, and profitability which should be among debt in total to the asset, and profitability, in the service trade. Based results in this paper, likewise, demonstrate an optimistic (positive) association amongst short-term debts to total asset and profitability, long-term debt to total assets and profitability and, between total debts to total asset, and profitability in the manufacturing business.

According to Ali et. al. (2016), this study aims to discover an association between the structure of capital &profitability. Results of this study demonstrate both positive and negative bonds among the variables in Cement & Automobile sector. Fu, (2018) establish a major relationship between capital structure and profitability; He also creates an opposite proportion to liability.

Mesquita & Lara (2003) conducted a comparable kind of learning which establishes a positive correlation with debt, in the short-term and equity that holds the rate of return. This holds an opposite association through debt in long term. Long-term debts were not found helpful for the company outstanding to decrease profitability by the sum of interest. Abu rub, (2012) is of the vision to the organization's capital structure had a positive and statistically major impact on the organization's accounting and market performance measures. Thus, the studies reveal varied findings, and additional analysis is required to shape a growing purpose on the subject matter.

Methodology

This study is quantitative and the study is based on two sectors of Pakistan (Pharmacy and Chemicals). Both sectors were selected include 43 companies as a whole by census sample method. For this, the data were collected for the period of five-year (2016-2020) from the annual reports, financial statements analysis of State Bank of Pakistan, and Pakistan Stock Exchange

(PSX). The Panel data is used in a two-step GMM model. This was investigated, and analyzed Pakistan's firm capital structure factors, through Stata software. The capital structure prime factors that might influence it, and mainly created hypothesis on the capital structure which presented in the table below. Where capital structure and factors are recommended using the concept of finance and, summary present statistics factors for those, which created, on the data set. The independent variable is under.

Table 1	**Difference Measures of leverage and corresponding pros and cons, according to Rajan and Zingales (1995)**
Total Liabilities / Total Assets	+The broadest definition of leverage; proxy for what is left for shareholders in case of liquidation. Not a good indication of whether the firm is at risk of default shortly. - May overstate leverage since total liabilities include items like account payable, untaxed reserves, etc.
Total Debt / Net Assets	+ Not influenced by trade credit. (Net Assets = Total Assets – Account Payable – other liabilities). - Still affected by factors that have nothing to do with financing, e.g. assets held against pension liabilities.
EBIT / Interest Expense	+ Measure of the risk that equity holders will not be able to make fixed payments and will have to give up control. The appropriate measure of investments equal in magnitude to depreciation is needed to keep the firm a going concern. - Based on assumption that short-term liabilities like account payable and short-term debt will be rolled over. Very sensitive to income fluctuations.
EBITDA / Interest Expense	+ Measure of the risk that equity holders will not be able to make fixed payments and will have to give up control. Appropriate if no such investments as in (5) are needed. - Same as for 5

Results

Table 1: Sum CS total liabilities Total Debts EBIT EBITDA

Variables	Obs	Mean	Std. Dev	Min	Max
CS	214	-1.209028	45.21849	-649.953	64.25875
Totallibil~s	214	.6674537	.7282019	.1164315	5.697084
Total Debts~s	214	.2753101	2.569391	-22.4095	9.050841
EBITntExp	214	13172.55	122915.2	-15854.42	1399822
EBITDAIntExp	214	15351.9	139999.8	-71.36045	1580260

Table 1shows descriptive statistics for the period under this study, CS is a fundamental central variable for answering the research question and acts as the dependent variable. As per statistics in this study the concluded CS mean for the firms is approximately -1.20 with a high standard deviation of 45.21. This CS high mean reduced partly is by some observations with negative ratio, as included under the minimum column with lowest CS at -649.9. The central importance for finding the two leverage ratios is that how dependent variable CS is related to the leverage and is thus crucial to the research question for answering, that is if there is a relationship between leverage and profitability.

The result indicates the mean of total liabilities is 0.66 with a standard deviation of 0.72 for pharmaceutical companies in Pakistan. This shows high leverage values mainly for total debt to the net asset while total debts are quite low than the standard level of 0.27. Thus, indicating that on average the debt financing is higher compared to equity financing. BIT has the highest value in the model having a dispersion of 122915. 2values.It shows greater influence over profitability with a unit increase in size can boost profit ratio mean of 13172.55. Similarly, EBITDA also has a positive influence on CS with a mean value of 15351.9.

This study calculated the correlation of variables with each other. Correlation Analysis describes the strength of the relationship between two variables.

Table 2: Correlation

	CS	totallibil▪s	total Debts▪s	EBITIn▪p	EBITDA▪p
CS	1.0000				
totallibil▪s	-0.0368	1.0000			
Total Debts▪s	-0.0235	-0.6849	1.0000		
EBITntExp	0.0037	-0.0633	0.0017	1.0000	
EBITDAIntExp	0.0038	-0.0642	0.0021	0.9996	1.0000

The above-mentioned table indicates the relationship between the dependent and various independent variables used in the study. The association among CS was found to be negative for all the independent almost with little difference in values with dependent variables except the association between EBIT and CS which was found to be positive. Total debt to total assets and total debt to net assets on return on total asset was negatively correlated with value (-0.0368 and -

0.0235). And found to be insignificant at 0.05 and 0.01 levels respectively. In the same way, EBITDA was positively associated with CS. Moreover, a positive association was found between EBIT and CS. Total liabilities to total assets correlation with debt to equity was found positive but negative with EBIT. As EBIT increases, the total liabilities to the total asset will decrease. Similarly, total debts to net assets have a positive relationship with EBIT. An increase in EBIT will decrease external financing. As Mesquita & Lara (2003) conducted a comparable kind of learning and established that the rate of return holds a positive correlation with short-term debt and equity. Total capital invested is mainly working capital. As Abor (2005) has taken 22 firms' sample, on the arranged list of Ghana Stock Exchange, which was five in years (1998-2002). He institutes a) An affiliation is positive amongst the debt ratio in short term to the asset in total, and, on equity's return, b) Secondly, relationship in negative amongst the debt ratio in long-term to the asset in total and on equity's return, and c) Thirdly, an association of positive, the relationship amongst the total ratio in debt to the asset in total and return, on equity.

Regression analysis is a statistical method to measure the impact of one (independent) variable on another (dependent) variable. The results from the OLS regressions are described in this section, and they will be referred sometimes to as simple models. Until now, the included test results highlight potential variations between the model's results, which are deemed relevant. Furthermore, increasing comparability with the earlier empirical results often used the simpler regression model which further validates its presence. This study uses regression analysis to measure the impact of financial leverage on firm profitability below follow the results for the OLS regression tests.

Table 3: Regression Analysis

Group Variable:		Number of obs =	214
Time Variable: Years		Number of groups =	43
Number of Instruments = 20		Obs per groups: min =	4
F (5, 42)	= 330933.99	avg =	4.98
Prob > F	= 0.000	max =	5

	CSCoef.	Std. Err.	t	P > |t|	[95% Conf.	Interval]
Total liability	-6.316079	.052936	-119.32	0.000	-6.422908	-6.20925
Total Debts	-1.662371	.0248687	-66.85	0.000	-1.712558	-1.612184

EBITntExp	-.0000268	9.39e-06	-2.85	0.007	-.0000457	-7.83e-06
EBITDAIntExp.	0000227	8.40e-06	2.70	0.010	5.70e-06	.0000396

Table 3. Show the regression analysis of the study between CS as the dependent variable and four independent variables. The coefficient of total liability to total assets is -6.316079 which shows negative and significance. While total debts to net assets coefficient are -1.662371 which rely on negative and significance. EBIT shows a coefficient of -.0000268 which is negative and positive significance. EBITDA coefficient is .0000227 which is also based on positive and significance. Gill, Biger, and Bhutani, (2009) the regression test consist of the results in the table. As per this study, all regression models and each variable coefficient reveals a change in CS to the percentage point for an increase of 1 unit of an independent variable, given the fixed remaining independent variables. By using this regression model, the total debts can be concluded and have a negative and significant relationship with profitability.

According to Gill, et al., (2011) the observed results demonstrate a positive relationship between short-term debt to total assets and profitability and total debt to total assets and profitability in the service trade. Adair, P., & Adaskou, M. (2018) The influence of growth opportunities (*GO*) on the debt ratio is most significant ($p<0.01$) and positive (24.1%) for all SMEs and proves stronger for midsize enterprises (38.1%). It ensures not validate trade-off-theory (TOT) that predicts a negative relationship among growth opportunities and the debt ratio due to the presence of agency costs and risk.

Conclusion

This study completed a determination to regulate the result of the structure of capital on the profitability of the Chemical and pharmacy sector of Pakistan during 2016-2020. The study remains supported through panel data using fixed results and a random outcome model. Hypothesis tests remained meant towards the discovery of (positive or negative) association among the selected variables.

The outcome discloses that here is the mutually positive and negative result of the independent variables on the dependent variable in the chemical and pharmacy sector as all the other variables except EBIT of the firm hurt the profitability. Whereas, in the pharmacy and chemical sector total

liabilities to total assets, total liabilities to net assets, and EBIT have a negative result on the profitability whereas EBITDA has a positive effect on the profitability.

These findings propose that future study of leverage factors must remain created on not only a long term or else total ratio in debt but also ratio debt on short term as well. That might remain in specific importance and, interest in an instance of Pakistan, as an act, term debt, in short, establishes debt in total as a part in major. The term debt in short is also called current liabilities, which is a firm's financial requirements that are likely to be paid off within a year.

Recommendations

Upcoming scholars are suggested to deliberate additional aspects such as development opportunities, capital structure (CS), and assets effectiveness. To focus on other factors that might control the capital structure of the chemical and pharmacy sector. Through this study future, scholars need to compare the chemical and pharmacy sector with other sectors at the Pakistan Stock Exchange (PSX) and State Bank of Pakistan (SBP). Using this scholar will distinguish about the density of funds on a loan of different companies in different sectors. We have taken long-term debt to total assets ratio; forthcoming scholars might also yield only long-term debt to assets ratio aimed at their analysis as many scholars have taken it.

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