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**THE IMPACT OF DEBT FINANCING ON FIRM
PERFORMANCE: EVIDENCE FROM PAKISTAN STOCK
EXCHANGE**



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Abstract:

Debt financing is a state of loan company receive for almost everything including business venture. The lender gives some money to receiver after setting loan terms between them. At the time of maturity of loan if for some reason company is not able to pay back the loan, there is going to be collateral. The companies that prefer debt financing over equity financing wants to protect firms' ownership and for having low interest rate which are tax free but debt financing has an effect on performance of company. The study is conducted to explore the effect of debt burden on performance of firm in mentioned sectors of Pakistan during recent five years period. The study is quantitative so data is collected from 4 different sectors in Pakistan stock exchange ranging from 2017-2021. For analyzing the data, the tools and techniques used are descriptive statistics, correlation matrixes, panel least square and Hausman test. The findings of research specify that performance of a firm is negatively associated with both short term and long-term loans. Although sales growth and firm size has positive association with performance of firm. The study recommend that firm should rely less on debt and more on financing their operations form internal sources of financing.

Key Words: Debt Financing, ROA, NPM, Firm Performance

Table of Contents

1. INTRODUCTION:	6
1.2. Background:.....	7
1.2.1. Modigliani and Miller study:.....	8
1.2.2. Pecking order theory:	8
1.2.3. Agency Cost Theory:	9
1.2.4. Trade Off Theory:	9
1.3. Problem statement:.....	9
1.4. Research Gap:.....	10
1.5. Research Objective:.....	10
1.6. Hypothesis:	11
2. Literature Review:	12
3. DATA AND METHODOLOGY:	20
3.1. Research Design:	20
3.2. Time horizon:.....	20
3.3. Population and sampling:.....	20
3.4. Sources of data:	21
3.5. Model Specification:.....	21
3.6. Choice of Variables:	21
3.7. Definition of variables:	22
3.7.1. Long Term Debt to Asset (LTDA):	22
3.7.2. Short Term Debt to Asset (STDA):	22
3.7.3. Sales Growth:.....	22
3.7.4. Firm Size:	22
3.7.5. Return on Assets:.....	22
3.7.6. Net Profit Margin:.....	23
3.8. Research strategy:	23
3.8.1 Correlation Matrixes:	23
3.8.2. Panel Data Analysis:	23
3.8.3. Hausman Test:	24
3.8.4. Fixed Effect Model:.....	24
3.8.5. Random Effect Model:.....	24
4. EMPIRICAL ANALYSIS:	26

4.1. Results Discussion:	32
5. Conclusion:	35
5.1. Limitations and recommendation:	36
5.1.2. Directions for future research:	36
References	37
APPENDIX:	39

Chapter 1

1. INTRODUCTION:

A firm capital structure is a spirit to maximize the wealth and to minimize the cost of capital (Sheikh and Qureshi, 2017). The decision of capital structure is a mix of how much a company rely on debt and equity to finance its operations. The manufacturing sector of Pakistan contribute about 20% in national economy. In year 2019 23.67% of labor force was employed in manufacturing sector. The sectors selected for conducting this research are fertilizer, pharmaceutical, technological and textile composite. The agriculture sector of Pakistan depends heavily on fertilizer sector and it contributes 4.4% to big scale manufacturing and 0.9% of Gross Domestic Product. Large scale manufacturing includes 3.6% of pharmaceutical sector and contributed 1.17% of total GDP. The technological sector of Pakistan put 1 % of total country GDP and the textile sector put up 8.5% of GDP of country. Five big companies are dominated in fertilizer sector and they carry 95% of market share. Pakistan is facing many economic issues such as high interest rates, high inflation, lower foreign investment, import base economy. Therefore, most of the firm face problems to meet their investment needs and usually they go for debt financing which effects firm profitability. It is a very critical task for any firm to take the right capital structure decision and to ensure the balanced ratio between debt and equity (Ahmed Sheikh and Wang, 2016). Many studies conclude that debt financing had negative effect on firm performance. Firm uses debt financing when they don't have enough internal sources to carry out their operations and they need to borrow money from outside the firm (Mwangi, 2018). Managers should use less debt to finance their operations because there is inverse relation between firm performance and debt financing and retained earnings should be used to support the business operations (Umar, 2017) In decision making process, the Capital structure is the key decision which had a great impact on the financial performance of the companies. This research is conducted to examine the insight understanding of internal and external financing on firm performance.

These evidences motivate the research to investigate the insights of capital structure and its impact on firm performance. The main purpose of conducting this research is to observe the impact of debt financing on performance of firm. In the previous studies about debt financing the researchers conclude different contradictory results.

Some researcher claims that financing operations with debt has positive impact on performance of companies (Lang, 2017). Beside it, some researcher concludes that there is undesirable relation exists between debt financing and companie's profitability (Umar, 2017). Few of the researchers has analyzes mixed results between debt and variables of financial performance (Javed, 2016). A several numbers of theories exists to explain the ideal capital structure for firms such as agency theory, trade-off theory and pecking theory. The agency theory states that companies can set the best capital structure to finance their operation but they have to solve the conflicts between debt providers and shareholders. Trade off theory tells that company decides about choosing debt or equity by balancing benefits and cost of debt and equity. Pecking theory states that managers should not finance companies' operations with debt, beside it, they must prefer choosing equity financing on debt financing. Therefore, the query of choosing a best capital structure is been unanswered question for many years. In 2014, Javed studied on capital structure and explain that there is a diversified relationship along capital structure and firm performance (Javed, 2016). Another study in Ecuador concluded that there is a direct relation between debt financing and age of company. Older company can access sources to finance its operation easily and improve their profitability. For estimation GMM model is used which results that increasing debt cause high productivity (Jaramillo, 2012).

Numerous strategies have been created in recent years to categorize performance of company which includes productivity analysis, efficiency analysis and other types of profitability ratios. However, even the single output-input ratios like ROA and ROI can be used as indicators to describe financial performance of companies. (ROA) has recently gained popularity to describe firm financial performance. In previous studies researcher used (ROA) as a variable to describe firm performance. (Ahmed Sheikh, 2018) used ROA on their study on impact of capital structure on performance of firm in Pakistan (Ahmad, 2017) has analyze the impact of debt financing on companies' performance of malaysia by investigating the relationship of operating performance, examined by ROE and ROA with LTD and STD.

1.2. Background:

At first the finance expert's belief that firms should take loan of some specific amount because as you increase the debt it increases the interest cost which results in decreasing the

firm's performance (Chowdhury, 2015). If the firm don't have a potential to repay the debt, the firm should not gather a much amount through debt financing, it is necessary to have an efficient capital structure which will give benefits of tax saving and bankruptcy cost, similarly a firm with high leveraged cause high cost of capital which will surely decrease the company value (Desai, 2016). Number of studies examine the debt financing impact on firm profitability. (Ezeoha, 2008) explore that there is a negative debt financing effect on profitability of firm. Factors which must be considered while evaluating the impact of debt on profitability are diverse industrial background, economic situation and macro-economic factors. Others believe that financing through debt had an inverse relation on firm performance and most of these studies focus on non-financial firms (Myers, 2020). Different theories are presented in recent times discussing the capital structure and combinations of equity and debt on firm performance.

1.2.1. Modigliani and Miller study:

The effort of the Modigliani and miller in the research which is conducted in previous era had a result that in a perfect condition the performance of the firm is not get effect by the debt financing. The real assets of the firm which are tangible assets are playing a role in a positive way while debt and equity has no direct impact on the performance of the firm. Proposition developed by the Modigliani and miller was providing a scenario in which taxes and bankruptcy are neglected. After getting the results, Modigliani and miller added a new phase in the study that is, if the tax shield is to be minimized then debt will be necessary. Because debts are based on interest instead of tax. That's how Modigliani and miller made a second preposition in which debt is preferred than equity. To reduce the corporate tax manager are advised to the get debt instead of equity.

1.2.2. Pecking order theory:

The hard work of Donaldson in 1961 results in proposing a theory known as Peckling order theory. It demonstrates that decision makers of capital structure should prefer to finance their operations by inner sources which include retained earnings over taking debts. Companies may consider financing through debt in case of un availability of enough retained earnings or for the benefits of tax. (Zeitun, 2017) examine the relation of capital structure and firm performance in Jordan. The data is collected from Amman stock exchange and financial

statements of trading companies. Regression model is used to examine and show that there was negative relation among debt financing and performance of company in Jordan. (Abormi, 2017) investigates the relationship between debt financing and small medium enterprises in Ghana and South Africa.

1.2.3. Agency Cost Theory:

In 1976 (Jensen and Meckling) present a theory which concluded that an ideal capital structure can be obtained by mix of debt and equity in such a manner that performance of company is not harmed. The efficient level of equity and debt are combined to get desired benefits. (Ahmed Sheikh, 2018), (Aziz, 2019) studied the relation of debt level in company capital structure and its impact on their profits. Researcher obtain different results in different studies on debt financing. Firm performance had a significant obstructive relation with debt and financing operations with debt harm performance the most (Salim, 2017).

1.2.4. Trade Off Theory:

The decision makers of company should see some factors at making capital structure. They should observe the cost and benefits of debt and equity. A perfect capital structure is one in which managers have taken a right mix of debt and equity by help of their cost and benefits. The benefit a company gets by financing more debt is paying less debt but high risk of bankruptcy. (Lang, 2017) study the effect of debt on cement companies in Ghana, He shows that there is significant effect of financing to the way of debt due to low cost of debt which helps then for getting the loans to fulfill the requirements of their cost. (Akhtar, 2016) study the impact of capital structure on Pakistan Commercial Banks. They adopted OLS technique to show the impact of leverage on Bank size, profitability, tangibility and liquidity. The results show that non-tax shield had a positive relationship with leverage of commercial banks in Pakistan and banks in Pakistan are more likely to follow tradeoff theory.

1.3. Problem statement:

Previously many researches result that financing in the form of debt reveals a negative impact on the firm performance. For the efficient firm performance firm should avoid to grasp the more weightage of debt (Umar, 2018). In controversy (Lang, 2017) concluded that debt financing had a productive influence on firm. Most of the debt financing is analyzed for the

developed economies and it is observed that the financial conditions are different for developed and under-developed countries. The abovementioned theories are applicable to the developed markets with secure business environment and operations. The present study is based on addressing the problem that financing theories are applicable to Pakistani markets and how effective the implication of these theories within Pakistani non-financial sector. The impact of debt financing in non-financial sector of Pakistani markets is not clearly addressed in previous studies. Therefore, deep research is needed to solve out the controversy of whether debt financing had a positive or negative effect on firm performance.

1.4. Research Gap:

Despite many researches have been conducted on this area of research to investigate the relationship between debt financing and firm performance either it is positive or negative, till 2017 but couldn't solve the contradiction of whether the impact is positive or negative (Ahmad, 2017). It is observed that the debt financing creates significant problems for the organizations in long-term growth and performance. Higher amount of debt leads to failure in achieving organizational objectives. On the other hand, debt financing provides an opportunity to expand business operations. Most of debt financing cases are supportive for short term and poses negative impact on long term business sustainability. The financial conditions of developed countries are different from the financial conditions of under-developed countries. Pakistan is significantly facing financial problems and debt financing within Pakistani markets is not significantly analyzed in previous literature. There are no significant researches found that address the impact of debt financing on non-financial sector. Therefore, this research is organized to examine the impact of debt financing on non-financial sector of Pakistan.

1.5. Research Objective:

The study is aimed to analyze the debt financing of non-financial sector of Pakistani institutes and their performance data. The focus of the study is on four dominated non-financial sectors of Pakistan, they cover main part of total GDP of Pakistan which includes fertilizer, pharmaceutical, technological and textile composite sector. The study is performed to analyze the impact of taking more debt than equity on companies listed in Pakistan stock exchange. The study endorses that companies of Pakistan should rely on equity financing instead of debt

financing because it decreases their performance. The financial manager of companies should select optimal capital structure to get efficient performances and profitability.

1.6. Hypothesis:

H1: Debt that is borrowed for short-term and long-term has negative impact on the return of assets.

H2: Debt that is borrowed for short-term and long-term has negative impact on net profit margin.

H3: Sales growth had positive effect on return on asset.

H4: Sales growth of an organization had positive effect on net profit margin.

H5: Firm size had positive effect on return on assets.

H6: Firm size has positive effect on net profit margin.

Chapter 2

2. Literature Review:

The positive effect of the debt burden was found in the model of Grossman and Hart, who considered the situation of a company's bankruptcy, which is associated with significant costs for management: the loss of reputation and all the benefits of control over the company's assets. The high debt of loan increases the likelihood of a company going bankrupt, which means that management, trying to avoid such a situation, can begin to behave more loyally towards shareholders (Memon, Rus & Ghazali, 2015). Unlike other models, Hart considered managers themselves, rather than shareholders, to be an active principle in resolving agency conflicts, believing that it is they who will initiate the intensive use of the debt burden, since this decision, oddly enough, is in their own interests.

The problem of assessing the impact of financing decisions on the cost of capital and the value of the company belongs to the area of financial management in which the efforts of many specialists have been concentrated for more than a decade. From the point of view of practical applications in the analysis of the structure (capital structure) and the cost of capital, two projections can be distinguished (Shaheen & Malik, 2016). On the one hand, a correct assessment of the cost of capital is a necessary condition for the consistency of the assessment of both the company as a whole and the economic efficiency of its individual investment projects. On the other hand, the cost of capital is a key parameter for evaluating performance in a value-based management (VBM) system, regardless of which financial model we take as a basis. If this modern ideology is introduced into the company, then the correct accounting of changes in the cost of capital should become an integral part of the process of analysing management decisions (Memon, Rus & Ghazali, 2015).

In the literature on VBM, the issue of analysing the structure and estimating the cost of capital is the prerogative of corporate finance specialists and is not considered in detail. However, errors in considering the impact of financial decisions on the cost of capital can lead not only to incorrect conclusions about the quality of decisions already made and / or the effectiveness of their current implementation, but also result in significant errors in the financial and economic justification for choosing the direction of the company's strategic development. The cost of capital is that objective threshold for the level of return that allows

you to separate economically attractive alternatives from decisions that destroy the company's value (Tauseef, Lohano & Khan, 2015).

One of the manifestations of the imperfection of the emerging financial markets, which includes Pakistan, is the inequality of opportunities to attract financing. Therefore, the task of developing a methodology for adequately adjusting the ratios for calculating the cost of capital in conditions where individual companies can attract resources at an underestimated or forced to do so at an overestimated price, in comparison with the objectively established cost of capital in the market, is relevant not only from a theoretical point of view, but also from a practical point of view (Larcker, Richardson & Tuna, 2017). Some companies can raise debt financing with an interest rate below the market (debt at below-market interest rate, subsidized debt).

These can be projects that are supported by the state, schemes for partial compensation of interest payments from the manufacturer of industrial equipment for companies that purchase this equipment on credit, or, finally, special financing conditions for structures affiliated with the bank (Larcker, Richardson & Tuna, 2016).

The benefits of obtaining subsidized debt are traditionally seen as a side effect of financing that increases the value of the company or the NPV of the project, and this effect can be considered explicitly using the Adjusted Present Value (APV) method for estimates. Thus, the authors provide examples of how the benefits of obtaining subsidized interest rate debt can be assessed and provides a comparative analysis of four methods taken from the textbook and valuation practice and offers recommendations for their application. The task that most researchers solve is to obtain an overall estimate of the NPV of an investment project, including the benefits of subsidized financing. Being a universal valuation tool, the adjusted present value (APV) method, at the same time, does not answer the question of whether and the Weighted Average Cost of Capital (WACC) of a leveraged company (Aziz & Abbas, 2019).

The simplest and most intuitive way to adjust the calculation is to plug the “contractual” debt interest rate directly into the classic WACC formula. But this is a deliberately erroneous path leading to inadequate results. First, the cost of capital is a market category, and its assessment should consider the requirements of the market for the return on investment with the corresponding risk, and not the individual agreements of individual entities (Aziz & Abbas, 2019). Second, the weights in calculating WACC should be determined based on market

valuations of equity and debt, but the “intuitive” approach does not give any indication of how the equity-to-debt ratio will change if the interest rate of debt differs from its market value. Third, one might expect (Aziz & Abbas, 2019).

The advantage of the APV method is that it can be used to account for all the side effects of financing decisions in a company's overall valuation, not just the benefits of tax protection of interest payments. However, unreasonable rectilinear "extension" of the model leads to a serious distortion of the results and incorrect conclusions (Akram, 2021). The correctness of estimates in a situation where debt is provided to a company at a rate different from the market depends primarily on a correct understanding of what is happening with the company's cash flows. Clarity in the formation of cash flows allows you to make the necessary adjustments to the calculation of the cost of capital and ultimately obtain consistent and consistent estimates.

When analysing the impact of debt financing with a non-market interest rate on the capital structure and value of the company, we will rely on the basic provisions of the classical theory. All the results obtained below are based on the principle that the valuation of a company does not depend on which of the discounted cash flow methods is used for this. If the initial assumptions are consistent and the corresponding cash flows are discounted at the appropriate rates, then the final estimates should match (Akram, 2021).

The cash flow that provides the return on investment of those who provided capital to the company initially arises from the turnover of assets. This cash flow (from assets) that is "free" to be distributed to investors is called Free Cash Flow (FCF). It does not depend on financing decisions and will not change, at whatever rate debt financing is attracted (Shaheen & Malik, 2016).

If there is mixed financing, i.e., the capital of the company is formed from equity and debt, then part of the free cash flow is redistributed in the direction of debt investors, forming cash flow on debt (Cash Flow to Debt - CFD), and its remaining part becomes cash flow for shareholders (Cash Flow to Equity - CFE) (Tauseef, Lohano & Khan, 2015). In addition to the free cash flow generated by the assets, there is a stream of benefits from the interest payment tax protection (Tax Shield - TS), which, as noted, is the result of the redistribution of part of

the state's claim rights in favour of the shareholders of the company resorting to borrowing (Tauseef, Lohano & Khan, 2015). Thus, for any given time, the total amount of cash available for distribution to debt and equity investors is the sum of the FCF free cash flow and the TS tax shield, which in turn is equal to the sum of the cash flow to CFE shareholders and the cash flow to debt investors (Shaheen & Malik, 2016).

The effects of debt financing with an interest rate different from the market value of the debt have cross-cutting effects on the cost of capital, capital structure, and company value. They manifest themselves in changes in estimates of debt, equity, and tax shield benefits and should be reflected in the formation of financial model parameters (Qamar et al., 2016). Incorrect consideration of the consequences of non-market debt financing can lead to significant distortions in the calculation of the discount rate when making investment decisions and to significant deviations in the determination of the opportunity cost of capital when calculating the family of indicators of residual income (residual income), for example, economic profit etc. Underlying the current monitoring of results in value-oriented (value based) management systems (Qamar et al., 2016).

It has been established that debt financing with a subsidized interest rate leads to a transfer of value from debt investors to company shareholders with its partial loss in the form of a reduction in tax shield benefits. The cost of equity decreases, and its value grows, but for the company, the effect is just the opposite. When financed with below-market interest rate debt, the company with subsidized debt has a higher weighted average cost of capital and a lower value than it would if it were borrowing at market terms (Pham & Nguyen, 2020).

A necessary condition for the validity of valuations that include the side effects of financing decisions is the correct accounting for the redistribution of cash flows, as well as the consistency of the procedure for calculating the cost of capital with the parameters of the chosen valuation model. With the proper construction of the financial model, all discounted cash flow methods give an identical result, and any of the DCF models can be used as the basis for the analysis and evaluation of management decisions (Nazir, Azam & Khalid, 2021).

In the annual analytical study of the leasing market, Gazman notes that the average cost of credit resources for leasing companies was almost always close to the refinancing rate of

the Bank of Pakistan, which, for example, decreased from 23 to 10% in the period from 2002 to 2007 (Nazir, Azam & Khalid, 2021).

As a result, companies, including leasing companies, were able to finance investment projects on better, more acceptable terms. However, since the end of 2007, the cost of funding began to grow due to the onset of the global economic crisis, which caused a reduction in attracted credit resources. This emphasized the dependence of the banking system on Western financial institutions, respectively, the dependence of the Pakistan's economy on the financial stability of the global financial system (Memon, Rus & Ghazali, 2015).

Thus, the decrease in the interval between Q4 2007 and Q2 2009 was due to an increase in lending rates due to a decrease in the liquidity of the banking sector, which immediately affected the investment attractiveness of leasing and, as a result, the attraction of bank loans when forming the capital of leasing companies (Memon, Rus & Ghazali, 2015). The dynamics of the cost of borrowing for the second half of 2009 and the 1st quarter of 2011 allows us to talk about the stabilization of capital markets, lower interest rates, which manifested itself in the growth of borrowing at an acceptable cost (Larcker, Richardson & Tuna, 2017).

Pakistani banks are actively looking for the most attractive assets in which they could effectively invest money. Leasing project lending is very popular because it facilitates access to investment projects since the leasing company is already conducting their initial selection and analysis (Hunjra, Butt & Rehman, 2019). However, one cannot speak about the dependence of the share of bank loans in the capital structure on the volume of new business of leasing companies. This indicator in dynamics are bank lending faces competition from other sources of capital, i.e., lessors are constantly looking for alternative sources. On competitive terms and, as practice shows, they are often found in the non-banking sector. Leasing companies quite often use several sources of financing to finance projects. Statistical data allow us to say that the absolute indicators of bank lending have always exceeded other sources of financing combined. In some years, the discrepancies were reduced to a minimum, but the prevalence of bank lending remained unchanged (Hunjra, Butt & Rehman, 2019).

A feature of lending to Pakistani leasing companies is a high dependence on resources raised in foreign capital markets. The nominal specific indicator of attracted foreign loans is

about 20% (Hamrouni, Boussaada & Toumi, 2019). However, it should be borne in mind that the real figure can be much higher, because: Pakistani banks that issued loans in Pakistan attracted loans abroad. According to the Bank of Pakistan, by mid-2008 non-resident funds became the main source of liabilities. Leasing companies, which are subsidiaries of banks, received loans from parent structures, in fact being sub-loans since the banks themselves attracted foreign capital (Hamrouni, Boussaada & Toumi, 2019). Partially leasing companies attracted credit funds from subsidiaries of foreign banks represented in Pakistan. Another source of debt formation capital of leasing companies is the issue of debt securities. The process of issuing bonds is a significant direction in raising capital. The issuance activity of leasing companies dates to 2001, when over the next four years more than ten Pakistani lessors, using their subsidiaries, issued securities worth more than \$380 million (Hamrouni, Boussaada & Toumi, 2019). At that time, the largest leasing company JSC RTK-Leasing was the first to take the path of attracting bonded loans. Over three years, the company has placed securities worth 3 billion rupees by open subscription. Bonded loans were short-term (6 months), and investors were offered from 21.1% per annum (Hamrouni, Boussaada & Toumi, 2019).

At the first placement, up to 16% per annum on the following issues (Habib, Khan & Wazir, 2016). The first issues of debt securities were characterized by a short period of their placement. The dynamics of increasing the maturity of bonds was directly dependent on economic growth, improving the investment climate, and improving the financial stability of companies. Thus, in 2005 the average maturity of bonds of leasing companies was 4-5 years, in 2007 - 7 years, and in 2010 - 10 years (Habib, Khan & Wazir, 2016). Thus, the terms of attracting capital became comparable with the terms of leasing agreements. The cost of attraction depends on many factors, among which the general state of the capital markets, the volume of attraction, the term and place of placement, the frequency of repayment, the availability of credit ratings from leading rating agencies, as well as the business reputation of the issuer should be noted (Habib, Khan & Wazir, 2016).

The cost of borrowing is a key factor in deciding whether it is possible to attract a bonded loan and is directly dependent on the situation on the capital market. Like the cost of bank lending, the bond market is characterized by an undulating movement of coupon rates. In particular, the largest bond issuer on the leasing market, LLC VTB-Leasing Finance, had a rate

of 8.2% on the first four coupons of the first issue (2007-2008), on the next four coupons the yield reached 12.1%, and already in 2010, the yield of investors on seven-year bonds was below 7% (Aziz & Abbas, 2019).

Thus, as the crisis emerges, the yield rates on coupon bonds move downwards, and in some cases, they fell below the refinancing rate (Akram, 2017). A distinctive feature of the placements of bonds of leasing companies is the thorough justification of projects. A significant part of the securities in demand will be presented for redemption in 2017-2020, which indicates investor confidence in the financial stability of issuers (Aziz & Abbas, 2019). Financial stability is confirmed by the share of defaults on coupon and principal payments 0.96% of the issue amount for all placed securities. Bond issues contain various offer conditions, which allowed lessors to redeem the securities. Part securities were placed to refinance previously placed more expensive loans, which made it possible to reduce the burden on interest payments, as well as to minimize the weighted average cost of capital (WACC) (Akram, 2017).

Analyzing the dynamics of bond placement, we can conclude that the issuance activity increased from mid-2009 to 2011, which indicates an improvement in the macroeconomic environment and overcoming the crisis consequences (Ahmed & Siddiqui, 2019). When making a final decision to issue bonds, companies are primarily guided by a comparison of their strategic goals and the overall macroeconomic situation, the current state of the domestic and foreign capital markets and the timing of raising funds. Recently, to raise capital, leasing companies began to use another type of debt securities - exchange-traded bonds. The popularity of this instrument is obvious due to the presence of several advantages over corporate bonds (Ahmed & Siddiqui, 2019).

Exchange-traded bonds can be placed by the company whose securities are traded on the stock exchange. At the same time, the legislative restriction on the issue of bonds without collateral for an amount not exceeding the size of the authorized capital of the company does not apply to the issue of exchange-traded bonds (Afza & Hussain, 2015). Exchange-traded bonds can be issued without collateral. When issuing exchange-traded bonds, registration of the issue by the regulator, registration of the prospectus and the report on the results of the issue are not required, which leads to a reduction in the terms of placement, costs and, as a

result, the cost of placement. Shorter issuance periods make it possible to respond more quickly to changing market conditions and more reasonably set the current market coupon rate (Afza & Hussain, 2011).

In this study examine various financial ratios of profitability to find the influence of debt and seem combination of results, profitability of firm was not affected by the variables of debt (Javed, 2016). (Mun, 2017) study the behavior of restaurant business regarding debt financing. (Shyam-Sunder, 1999) also found a positive relation between profitability and debt financing. (Akinlo, 2012) and (Hamid, 2017) suggested that short-term loans increase the profitability more than long-term loans. (Dada, 2014) uses return on asset and return on equity to measure the relation between debt and firm performance in Nigeria. (Gabrijelcic, 2013) investigates the impact of debt financing on firm performance. (Kumar, 2010) study the impact of debt on performance of company by using GMM(SGMM) dynamic panel regression. (Iavorskyi, 2013) examine the impact of debt on performance of companies in Japan.

The study of the impact of capital structure on firm performance of Palestinian financial institution using the model of multiple regression (Abbadi, 2012). They carried out an analysis on data of 8 banks listed on Palestine Securities exchange. They conclude that a there is a direct relationship between debt financing and market efficiency.

Chapter 3

3. DATA AND METHODOLOGY:

Research methodology is the certain method or ability used to recognize, choose, process and examine information about a subject matter. This tells that how a researcher plan to examine the information and formulate their target and challenges. This chapter label the research techniques used throughout the study and sources from where the date is been collected.

3.1. Research Approach:

The research approach is the strategy that is used to investigate the information and different elements of research. The research investigates the impact of debt financing on companies' performance. This study is based on quantitative research approach as the data is gathered from secondary sources. Quantitative findings are attained using regression models in this study.

3.2. Time horizon:

In this study panel data is used which contain data of 5 years from 2017 to 2021. A panel study is research technique which contain repetition of data with similar variables for short or long-time horizon. Panel study is used because data of different companies are collected from different sectors of Pakistan.

3.3. Population and sampling:

Population are number of individuals from which sample is drawn. The study is quantitative and data is collected from secondary source. There are 556 total companies which are listed in Pakistan stock exchange so the population of this study is 556. There are 36 different sectors in PSX from which researcher selected 4 sectors to conduct this study are Fertilizer, Pharmaceutical, technological and textile composite. A cross-sectional sample of 32 companies ranging from 2017-2021 listed in Pakistan stock exchange is taken to conduct this study.

3.4. Sources of data:

This study implies quantitative analysis hence secondary source is used to collect data. Data of different companies are collected from Pakistan stock exchange. Financial statements, annual reports are the main sources of data. The dependent variables short term debt and long-term debt are collected from balance sheet of companies and sales growth and firm size are calculated from other elements of balance sheet as discussed above.

3.5. Model Specification:

The aim of this research is to investigate the impact of debt financing on performance of company. the independent variables are taken in this study are determinants of profitability. Return on Assets and net profit margin. On the other side dependent variables include, Long-term debt (LTDA), Short-term debt, firm size (FS), and sales growth (SG). The equation of the study is.

$$ROA_{it} = \alpha + \beta_1 STDA_{it} + \beta_2 LTDA_{it} + \beta_3 SG_{it} + \beta_4 FS_{it} + \varepsilon_{it}$$

$$NPM_{it} = \alpha + \beta_1 STDA_{it} + \beta_2 LTDA_{it} + \beta_3 SG_{it} + \beta_4 FS_{it} + \varepsilon_{it}$$

3.6. Choice of Variables:

Dependent variables of the research study are.

- Return on Asset.
- Net Profit Margin.

The independent variables of the research study are.

- Long term Debt to Asset.
- Short term Debt to Asset.
- Sales Growth.
- Firm Size.

3.7. Definition of variables:

3.7.1. Long Term Debt to Asset (LTDA):

Long term debt are debts a firm borrow from a third-party lender for more than period of one year. Long term debt are label as non-current liabilities on balance sheet which simply means it is due for more than one year. Long term debt to asset is percentage of how much long-term debt is due in company total assets. It is calculated by dividing long term debt of company to its Total Assets.

3.7.2. Short Term Debt to Asset (STDA):

Short term debts are debt a firm borrow from a third-party lender for less than one year. Short term debt are label as current liabilities in balance sheet with simply means firm has to repay loan in less than a year. Short term debt to asset is ratio of how much a company dissolve its total asset to pay its current liabilities. It is estimated by the division of short-term debt to total assets of company.

3.7.3. Sales Growth:

Sales growth is an estimation of change in total sales over fixed time horizon. It can be obtained by comparing revenue of current and previous years. A growth of 5-10% is normally considered good.

3.7.4. Firm Size:

Usually there are three measures to determine firm size which are total assets, market value of equity and sales. Total assets of the company are used as a measure to describe the firm size in this research. Firm size is obtained by using natural log of total assets of company.

3.7.5. Return on Assets:

Return on assets measure how much gain a company is making from its total assets. The ratio tells the percentage of profits generated by total assets of company. The value of ROA is demonstrated by simply division method, net income of a company by its total assets. Normally a return on Assets greater than 5% is considered to be good and return on assets lower than 5% is considered low and company must try to utilize maximum assets to increase sales.

3.7.6. Net Profit Margin:

Net profit margin usually indicates that how much net income is created as percentage of total sales. It is considered by dividing net income by total sales. Generally average profit margin is 10% and a good profit margin is 20% or above.

3.8. Research strategy:

This research is quantitative and different tests are used to analyze the data. The data is cross-sectional as the study investigate the data of different companies with different variables at a given time. The descriptive value of statistics is utilized to condense the data characteristics. This test mainly provides the link between variables and statistical information about the data. Furthermore, Correlation matrixes, panel least square, Hausman test is used to analyze the data.

3.8.1 Correlation Matrixes:

Correlation matrixes is a table which shows the relationship between different variables and show correlation coefficient of variables. The correlation matrixes display the correlation among all viable pairs of coefficients in a table. When analyzing a large data set researchers use this matrix as a powerful tool to visualize figures in given data. The correlation matrixes comprise of multiple rows and columns containing correlation coefficients of variables. Furthermore, correlation coefficient is often used in coexistence with other statistical tools. In multiple linear regression analysis correlation matrixes is helpful in examining the correlation coefficients of independent variables existing in model.

3.8.2. Panel Data Analysis:

Panel data technique is manipulated by researchers to estimates the parameters of cross-sectional data in regression analysis. The model is mostly used by researcher because it merges the data of cross-sectional and time series. In this model researchers assumed that the behavior of data is identical in numerous periods. In this method researcher can use two of the techniques, ordinary least squares or least square approach to evaluate panel data model.

The equation of panel data regression is.

$$Y_{it} = \alpha + \beta^t X_{it} + \varepsilon_{it}$$

$I = 1,2,3,4,5 \dots N$ and $t = 1,2,3,4,5 \dots T$

Here, N = amount of cross section or individuals and T = number of time intervals.

3.8.3. Hausman Test:

The hausman test is used to determine predictive variables in regression model. Hausman test is also used in panel data analysis to illustrate the probability to choose between fixed and random effect model of regression. If the probability of hausman test is less than 5% significant level than fixed effect model is applied and if the probability is greater than 5% significant level than random effect model could be applied to analyze the data.

3.8.4. Fixed Effect Model:

Due to past changes in observations the intercept may differ in each cross section. Fixed effect model illustrates that for each cross section there will be different intercept. Dummy variable is used in fixed effect model to record the dissimilarity between intercept of companies. the general equation of the model is.

$$Y_{it} = \alpha + \beta_1(X_1)_{it} + \beta_2(X_2)_{it} \dots \dots + \beta_k X_k + \mu_{it}$$

In the above equation $i = 1,2,3,4,5,6 \dots N$ and $t = 1,2,3,4,5,6 \dots T$

Here, N = number of cross section and T = time period.

3.8.5. Random Effect Model:

The random model illustrates that there is same intercept between time and cross section or individuals. In this model the dissimilarity between intercept is called error terms of each firm. The general equation of random effect model is.

$$Y_{it} = \alpha + \beta_1(X_1)_{it} \dots \dots + \beta_k(X_k)_{it} + \mu_{it} + \epsilon_{it}$$

In the above equation $i = 1,2,3 \dots N$ and $t = 1,2,3 \dots T$

Here, N = number of cross section and T = time interval.

Model Diagram



Table 1. The key variables are defined

Variable	Abbreviation	Measurement
Independent variables		
Short term debt	STDA	$\frac{\text{Short term debt}}{\text{Total Asset}}$
Long term debt	LTDA	$\frac{\text{Long term Debt}}{\text{Total Asset}}$
Firm Size	FS	Log of revenue.
Sales Growth	SG	Comparing current sales with previous sales
Dependent variables		
Return on assets	ROA	$\frac{\text{Net Income}}{\text{Total Assets}}$
Net profit margin	NPM	$\frac{\text{Net income}}{\text{Total sales}}$

Chapter 4

4. EMPIRICAL ANALYSIS:

Table 2. Descriptive Statistics

	ROA	NPM	LTDA	STDA	SG
Mean	0.126506	0.153528	0.120666	0.345379	0.132618
Median	0.123550	0.163134	0.055689	0.271744	0.156273
Maximum	0.681000	0.292000	0.798435	1.500845	0.460103
Minimum	-0.064900	-0.088600	0.003069	0.128811	-0.859791
Std. Dev.	0.104827	0.089282	0.142998	0.251876	0.188516
Skewness	2.503723	-0.452602	2.342883	2.788637	-2.420553
Kurtosis	14.41165	2.295759	10.52183	12.18665	14.11902
Jarque-Bera	388.2508	3.288378	196.3360	288.7512	367.6721
Probability	0.000000	0.193169	0.000000	0.000000	0.000000
Sum	7.590358	9.211650	7.239978	20.72275	7.957066
Sum Sq. Dev.	0.648332	0.470308	1.206458	3.743049	2.096753
Observations	160	160	160	160	160

Table 2 describes the results of the descriptive analysis. The results indicates that the 34.5% of Short-term Debt (STDA) of companies listed in Pakistan is of total assets and the long-term loan (LTDA) shows on average is 12.35% of total assets. The STDA variable diverge more than any other performance-measurement variable. There is a slight dissimilarity between NPM and ROA of selected firms. For the most part, data shows that all sectors have depended more on STDA.

Table 3. Correlation Matrix

	ROA	NPM	LTDA	STDA	SG	FS
ROA	1.000000					
NPM	0.450419	1.000000				
LTDA	-0.157607	0.080655	1.000000			
STDA	-0.059939	-0.084532	0.697870	1.000000		
SG	0.376069	0.220805	0.110828	-0.009119	1.000000	
FS	0.120228	0.259825	0.113695	-0.195385	0.126948	1.000000

Table 3 shows the relationship among all variables. It indicates that ROA have significant inverse relationship with long-term debt to assets with a value of 15.7%. Sales growth and firm size have a positive relationship with ROA with a value of 37.6% and 12% respectively. Also, firm size have a clear positive relationship with NPM with a value of 25.9%.

Table 4. Panel Least Square (ROA)

Dependent Variable: ROA

Method: Panel Least Squares

Total panel observations: 160

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SG	0.210206	0.068003	-3.091130	0.0031
STDA	-0.071260	0.076046	-2.937063	0.0528
LTDA	-0.191704	0.132778	1.443791	0.1545
FS	3.879321	0.004593	-4.752991	0.0052
C	-0.327146	0.105530	3.100032	0.0030
R^2	0.200937	Mean dependent var		0.126506
Adjusted R^2	0.142824	S.D. dependent var		0.104827

S.E. of regression	0.097053	Akaike info criterion	-1.747468
Sum squared resid	0.518058	Schwarz criterion	-1.572939
Log likelihood	57.42405	Hannan-Quinn criter.	-1.679200
F-statistic	3.457658	Durbin-Watson stat	0.989783
Prob(F-statistic)	0.013665		

Table 4 shows the result of panel least square regression for Return on Assets. All variables express significant results at 5% significance level except LTDA. Growth in sales is positive and significance relation with return on assets. STDA is negatively affecting ROA and is significant. LTDA is negatively affecting ROA but is insignificant at 5% significance level. Firm size has a positive and significant effect on ROA.

Table 5. Hausman Test (ROA)

Correlated Random Effects - Hausman Test

Equation: (ROA)

Cross-section random effects are tested

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4.947804	4	0.2927

Test comparison of random effect of cross sections.

Variable	Fixed	Random	Var(Diff.)	Prob.
SG	0.030403	0.026533	0.000444	0.0011
STDA	-0.145713	-0.161379	0.005082	0.0487
LTDA	-0.128181	-0.157966	0.006196	0.0051
FS	4.017799	2.006115	0.001296	0.0064

R^2	0.622051	Mean dependent var	0.126506
Adjusted R^2	0.493205	S.D. dependent var	0.104827
S.E. of regression	0.074626	Akaike info criterion	-2.129483
Sum squared resid	0.245036	Schwarz criterion	-1.570991
Log likelihood	79.88448	Hannan-Quinn criter.	-1.911026
F-statistic	4.827862	Durbin-Watson stat	2.105147
Prob(F-statistic)	0.000022		

Table 5 show the results of estimating regression between financial leverage and Return on Asset. The Random effect model shows more accurate results than fix effect model because the probability value of Hausman test is 0.29 i.e. more than 0.05. In Random effect model coefficient of STDA has a negative relation with ROA and is significant at 5% level of significance.

So STDA has significant negative relation with ROA. LTDA also has a negative sign and is significant inverse relation with ROA. Sales growth has a direct relation with ROA showing a positive relation and it is significant at 5% level of significance. Firm size has no impact on ROA in RE model. The results fully support the hypothesis that financing operations with debt has a negative effect on business profits for long and short-term debt. Adjusted R^2 shows that there is 49.32% variation in Return on Asset due to LTDA, STDA, SG, and FS as a result of Random effect model.

In general, there is inverse and significant association between STDA with ROA and LTDA with ROA. The results of study indicates that debt has negative alliance with Return on Asset and supports the hypothesis H1 and H2. The firms that finance their operations more with debt either than equity in Pakistan will face decrease in firm performance and overall profitability. These findings are compatible with global community and previous studies by (Aziz, 2019) and (Dada, 2014).

Table 6. Panel Least Square (NPM)

Dependent Variable: NPM

Panel Least Squares model

No of observations:160

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LTDA	-0.316823	0.110676	2.862605	0.0059
STDA	-0.181738	0.063387	-2.867110	0.0059
SG	0.105584	0.056683	1.862696	0.0678
FS	7.011540	0.003829	-3.014128	0.0039
C	0.409550	0.087964	4.655896	0.0000
R^2	0.234667	Mean dependent var		0.153528
Adjusted R^2	0.179006	S.D. dependent var		0.089282
S.E. of regression	0.080898	Akaike info criterion		-2.111611
Sum squared resid	0.359943	Schwarz criterion		-1.937082
Log likelihood	68.34833	Hannan-Quinn criter.		-2.043343
F-statistic	4.216024	Durbin-Watson stat		0.610056
Prob of F-statistic	0.004767			

Table 6 shows results of panel least square regression in which all variables are significant at 5% significance model except sales growth. The coefficient of variables LTDA and STDA are negative so had a negative relationship with net profit margin. Coefficient of SG is positive and insignificant at 5% level of significance. The Firm size is positive and significant, so it impacts positively on profit margins. Adjusted R^2 shows that there is 17.9% variation in net profit margin because of STDA, LTDA, SG and FS.

Table 7. Hausman Test (NPM)

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4.471798	4	0.0459

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
LTDA	-0.224597	-0.212055	0.001335	0.7314
STDA	-0.047991	-0.072414	0.000928	0.0227
SG	0.017368	0.037901	0.000104	0.0445
FS	6.026183	8.006341	0.000459	0.0091
R-squared	0.801828	Mean dependent var		0.153528
Adjusted R-squared	0.734269	S.D. dependent var		0.089282
S.E. of regression	0.046024	Akaike info criterion		-3.096119
Sum squared resid	0.093202	Schwarz criterion		-2.537628
Log likelihood	108.8836	Hannan-Quinn criter.		-2.877663
F-statistic	11.86861	Durbin-Watson stat		1.956074
Prob(F-statistic)	0.000000			

Table 7 shows the regression result of Net profit Margin and financial leverage. In this analysis fixed effect model is used for evaluation because the p-value of Hausman test is smaller than 5% significant level. Fixed effect model shows that LTDA has a negative impact on NPM but is insignificant at 5% significance level. STDA also has a negative impact on NPM and coefficient is significant. Sales growth is positive and has a direct relationship with net profit margin and also is significant at 5% level of significance. Firm size is positive and

significant, so it matters for firm's profit. 73.42% is the value of Adjusted R^2 shows the variation in NPM due to performance of all variables in estimation.

The results are compatible with hypothesis 3 and 4 and with previous studies that debt financing has inverse relation with net profit margin in terms of STDA and LTDA as their coefficients in all models are negative. So fixed effect model shows that debts reduce profit margin and other variables sales growth and firm size strengthen profit margin.

4.1. Results Discussion:

Above mentioned empirical results of analysis indicate that long term debt financing shows a negatively significant influence toward return on investment but positively insignificant relation with net profit margin. Overall long-term debt has negative relation with performance of companies. Increasing your long-term debt to carry out operations will affect company profits negatively. The negative impact has been also indicated from the variables of short-term debt and significantly associated with firm performance. The results indicates that both types of debt short term and long term had a negative result to company performance which proves the hypothesis H1 and H2. The results of study support previous researches by (Myers, 2020) and the study of (Yazdanfar, 2015) which conclude that debt financing had negative impact on performance of company. The findings are also in line with study of (Aziz, 2019) and (Gabrijelcic, 2013) that concluded that taking too much debt in capital structure negatively affect the profits of company.

furthermore, findings of the study are contradicted with previous studies that state that taking more debt in financing operation of company has positive impact on performance of company due to low cost of debt (Javed, 2016) and study of (Lang, 2017). The other independent variable in study was firm size and sale growth. In this study the results of firm size variable show a positively associated with the performance of the firm which proves the H5 and H6. The returns of larger firms are more than smaller firms because of economies of scale and better management and broad investments options. The positive results of firm size support results of some previous studies by (Zeitun, 2017) and (Habib, 2016). Sales growth also has positive and significant relation with return on asset but relation with net profit margin is insignificant at 5% significance level which proves H3 and H4. (Tauseef, 2015) investigates the relationship between sales growth and firm performance. They argue that sales growth had

a positive relation with profit of firm. Furthermore, they conclude that firms with low debt have more profit. (Akinlo, 2012) also examine impact of growth in sales on profitability of firm. The empirical results of study show that increase in the sales will increase profits and dividend for shareholders. (Ghafoor, 2015) study the variables used for study are return on asset, return on capital employed and net profit margin. Results of study confirms that growth in sales positively impact all the profitability measures.

The results support the pecking order theory which state that companies should prioritize to finance their operation by internal sources of retain earning over debt financing. It will affect negatively when companies take debts. Companies having a larger firm size should focus on increasing sales growth to increase their profits and should not take debt ko increase their assets because it will affect their profits. In modern conditions, Pakistani enterprises are faced with the acute problem of attracting resources to finance the process of updating fixed assets, expanding production, and improving the national economy as a whole. This problem is especially relevant in the current situation. A significant part of domestic companies continues to rely on their own funds at a time when it is possible to effectively attract investment resources in order to increase the economic growth of the enterprise.

Currently, the main ways to attract borrowed capital are a bank loan, emission financing, leasing. In most cases, enterprises use a bank loan as borrowing sources, which is explained by the relatively large financial resources of Pakistani banks, as well as the fact that when obtaining a bank loan, there is no need to publicly disclose information about the enterprise. Here, some of the problems caused by the specifics of bank lending are removed, which is associated with simplified requirements for application documents, with relatively short terms for considering applications for issuing a loan, with the flexibility of borrowing conditions and forms of loan security, with the simplification of the availability of funds, etc.

The leaders of most Pakistani companies do not want to disclose financial information about their enterprises, as well as to make changes in financial policy. As a consequence - the fact that only 3% of Pakistani companies use equity financing. Leasing, as well as emission financing, is used by a smaller share of Pakistani enterprises. Its catalyst is demand, and at this

stage of economic development, this important element of market relations is just beginning to gain momentum.

The need to identify the causes influencing the development of the debt capital market, as well as the conditions that contribute to the effective attraction of debt capital by Pakistani enterprises to increase growth rates, makes the topic of this dissertation research of particular relevance.

Attracted financial resources are formed on the basis of the redistribution of funds between economic entities and characterize the degree of interaction of the enterprise with them. Sources of attracted borrowed financial resources of enterprises are loans from commercial banks and non-banking organizations, loans, private loans. Financial resources in the form of state support funds can be allocated to a special group. Today, the state is beginning to increasingly influence the activities and financial stability of enterprises and organizations, both in the form of direct and indirect financial support in order to encourage and stimulate the investment activity of businesses. In this regard, it is advisable to allocate this type of financial resources to a separate group, also due to the fact that these sources often have a non-market nature associated with protectionist state policy, and also pursue social, political, and other goals. The source of their formation is funds that are provided on a reimbursable basis and involve their return - a budget loan, interest-free loans, short-term loans, lending programs. Also, the sources are funds provided on a gratuitous basis in order to redistribute resources more effectively between sectors of the economy, as well as to solve other socio-economic problems. Among these forms of support, subventions, subsidies, grants (budget appropriations, budget investments) can be distinguished.

The source of funds raised from third parties are resources received from legal entities and individuals, receipts from industry and research funds, charitable contributions, financial resources from unions, associations, industry regional structures, grants from public organizations, international organizations, charitable foundations, etc. This classification reflects the specifics of financial support for business activities, since own funds are the backbone of the activities of enterprises, and the attracted state support funds are mainly focused on supporting business entities. Also, this classification determines the nature of the

interaction of enterprises and organizations with the external environment and facilitates the management of financial resources.

Chapter 5

5. Conclusion:

The purpose of the study is to investigate the impact of taking debt in financing operation of company on its performance. The study is conducted to check that either debt financing effects firm performance positive or negative. The Dependent variables used for this study are net profit margin and return on assets which are main elements to check financial performance of companies. The independent variables used are long term debt, short term debt, firm size and sales growth to estimate that how much independent variables has effect on dependent variables.

In this study the companies for analysis are selected from four main sectors from Pakistan stock exchange. A cross-sectional data is collected from 32 listed companies on Pakistan stock exchange ranging from 2017-2021. The data is cross-sectional and arranged in form of panel data. The tools and techniques used for the analysis are descriptive statistical model, correlation matrixes, panel least square and Hausman test. The results of descriptive statistical model conclude that the most diverging variable is Short-term debt to asset (STDA). The Hausman test is used to select whether to choose fixed effect model or random effect model. The p-value of Hausman test indicates to choose random model for analyzing return on assets. The results of this test conclude that STDA and LTDA has negative impact on return on assets which are compatible with hypothesis 1 and 3. The variables firm size and sales growth has positive impact on return on assets in random effect model which proves the hypothesis 5 and 7. For analyzing net profit margin the p-value of Hausman test indicates to choose fixed effect model. The results of fixed effect for net profit margin conclude that short term and long term debt has negative association which are compatible with hypothesis 2 and 4. Sales growth and firm size show positive association with net profit margin and supports the hypothesis 6 and 8. The study conclude that debt had negative association with firm performance.

If companies want to increase their profits they must focus on sales growth and try to take less debt while financing their operations.

5.1. Limitations and recommendation:

The study is done on four sectors out of 36 sectors mention in Pakistan stock exchange. The research is limited to fertilizer, pharmaceutical, technological and textile sector of Pakistan. Following are the recommendation of the research.

- As proved above that debt has negative effect on performance of firms in Pakistan so companies should use less level of debt in their capital structure.
- Firms should take less debt and rely more on financing their operations from internal sources.
- Firm should use ideal level of capital structure because taking high level of debt increases the insolvency risk of firms.
- Companies with larger firm size should focus on increasing their sales growth instead of taking debt.

5.1.2. Directions for future research:

The Future study can be done on other sector of Pakistan stock exchange such as automobiles, chemical etc. In future research can be done including other variables of firm performance and capital structure such as return on equity, return on investment, tangibility etc. Better results can be obtained by including more variables of performance and capital structure. It can also be done by increasing the time range to get more reliable results. Future research can be expanded by observing behavior of investors weather they like to invest in firm with high level of debt or they prefer a firm with high level of equity in capital structure. As this research include companies in Pakistan so further research can be done by analyzing effect of debt on Asian companies' performance. The further study can be conducted on finding the ideal capital structure by describing that how much a company can take debt so it doesn't affect its performance.

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APPENDIX:

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