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Impact of COVID-19 on the Capital Structure of Listed Firms in Pakistan

by

Atiya Iftikhar

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To Allah Almighty, who has made us the crown of creation and has given us the ability to learn. I dedicate this work to my parents who always support and encourage me with their infinite love. I also dedicate this work to my teachers who help and appreciate me on every step of my studies. Without your support and encouragement, this journey would not have been possible.

CERTIFICATE OF APPROVAL

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Abstract

The issue of capital structure has been widely studied among the literature. Many studies have tried to examine the capital structure decisions and its impact on the performance of firms. Some studies also find the impact of different pandemic on capital structure as well as on the performance of different firms like Global Financial Crises, Swine Flu epidemic etc. There are mixed findings due to different sections of crises, different sectoral, different market dynamics and different examination models used to study the impact. Therefore, the main objective of this study is to investigate the impact of COVID-19 pandemic on capital structure of Listed firms of Pakistan. Empirical analysis is carried out on a sample of 12 sectors for the period of 2014-2020. Panel data analysis and least square dummy variable analysis is used to observe the results. The procedure for capital structure is short-term debt to asset ratio, long-term debt to asset ratio and total debt to asset ratio, and firm specific variables including size, profitability, tangibility, asset utilization and growth opportunity. The results of panel data analysis show that COVID-19 does not directly affect the financing of the firms, but capital structure is influenced by firm specific variables like, size, profitability and tangibility which exhibited significant results during COVID-19 whereas, growth opportunity and asset utilization has insignificant impact on capital structure. Least Square dummy variable analysis used the sectoral effect shows increased results. During COVID-19 significant impact was found on short-term debt to asset ratio in Auto industry, cement industry, paper industry and technology industry, while chemical, fertilizers, sugar, oil & gas, textile, pharma, power industries show insignificant effect. No significant result was found on long-term debt of any industry. Significant impact of COVID on Total debt was observed in cement and technology industries. The other industries report insignificant impact of COVID on Capital structure.

Keywords: Capital structure, COVID-19, impact, long-term, short-term.

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Abbreviations

BDRs	Book debt Ratios
CBRT	Central Bank of Republic of Turkey
COVID	Coronavirus disease of 2019
FMD	Foot and Mouth Disease
GFC	Global Financial Crises
GMM	Generalized Methods of Moments
HINI	Hemagglutinin Type 1 and Neuraminidase Type 1
LTD	Long-term Debt
M&M	Modigliani Miller
MDRs	Market Debt Ratios
MSMEs	Micro, Small and Medium Enterprises
OEF	Oxford Economic Forecasting
OLS	Ordinary Least Square
PLCs	Private Limited Companies
PSX	Pakistan Stock Exchange
ROA	Return on Assets
ROE	Return on Equity
ROS	Return on Sales
SMEs	Small and Medium Enterprises
STD	Short-term Debt
TD	Total Debt
UNCTAD	United Nations Conference on Trade and Development
WHO	World Health Organization

Chapter 1

Introduction

Firms whether these are newly incorporated or has been operating for many years, they need financing. We cannot underestimate the importance of funds that a firm need, as it is very significant for the successful operations of the firms. Some firms need funds so that they can enable their expansion and some firms need these funds to facilitate the day-to-day operations. This capital may be obtained either inside or outside the firms. Internal funds are derived from retained earnings and there is no obligation for these funds. But external funds are obtained from lenders or shareholders and need repayment of funds in form of interest payments, dividends, value creation and maximization of profit (Chechet and Olayiwola, 2014).

Since capital structure affect the wealth maximization of firms and it also affect their ability to maintain their position in this competitive world, that's why right decision about capital structure is very crucial. However, for many firms to decide about effective capital structure mix is still very difficult task. They face this difficulty because of some challenges confronted in making a model which will give correct results for optimum capital structure (Koech, 2013). Due to this reason, the decision about issuance of capital structure attracts the attention of many business players such as analysts, investor and management of the firms. This attraction is crucial because capital structure decisions are very important in financial management.The decision about capital mix not only impact the profitability of firms but it is significant to maintain the going concern status of firms, in time of financial crises.

At an international level with the outbreak of any financial crises, firms that are not performing well face financial distress. At the same time, accessibility of debt also significantly shrinks, and risk exposure intensifies throughout the years which in turn rises the cost of capital and creates a burden on the firms. Therefore, firms face a lot of pressure to come up with such corporate structure that would tackle the problems and give maximum profits to shareholders (Martis, 2013). Hence, in this study, we try to examine the impact of COVID-19 crises on capital structure of Listed companies of Pakistan. Previous studies show the effect of different pandemics on capital structure and how these pandemics effect the performance of the firms. There is no such research in Pakistan which specifically study about impact of COVID-19 pandemic, so this study providing insight about the impact of COVID-19 epidemic on capital structure of firms and firms' performance through this pandemic.

1.1 Theoretical Background

Due to outburst of COVID-19 disease both national and global economies are highly influenced. All firms whether these firms are small, medium or large all of them are facing many issues like interruptions in demand and supply, financial issues, transportation related issues, exports order cancelation etc. This epidemic has a significant impact on almost all the firms around the globe. All firms are affected because of this pandemic but small and medium firms are extremely affected as compared to large firms as these small and medium firms have fewer resources especially managerial and financial resources than large firms. These small firms mostly reliant on their daily transactions and to manage such disruptions these firms have fewer resources. But in case if they have resources to manage such disruptions like COVID-19 then they face a decline in their stocks which arises the problems in managing these operations. In developing countries COVID-19 have a greater impact and it is very challenging for developing countries to apply effective strategies without confronting necessary foreign exchange limitations (UNCTAD, 2020a). Some nations are more vulnerable as they have weak infrastructure of

health, they are highly reliant on trade sectors and tourism, and highly indebted which rely on unstable capital flows (World Bank, 2020). If outburst of COVID is controlled then it stimulates the country's economy, but danger of continual financial stress even after 2020 is extremely high (World Bank, 2020).

The research regarding the capital structure got attention after (Modigliani and Miller, 1958). They said that there is no impact of capital structure on the value of firm by assuming that there are perfect capital markets. Consequently, even if some amount of debt and equity is change but it will not influence the value of firm, but this theory of MM was criticized by many researchers because no perfect market exists. In Modigliani and Miller (1963) modified their theory by considering taxes and claimed that when interest payments are tax deductible in the market imperfections, then the firm value will rise with the debt amount. In other terms, when capital structure is optimum then capital structure is using 100 percent of debt, even though it is very unusual or even difficult to find.

There is another theory of capital structure which was suggested by the Myers which we called the Pecking Order Theory. This theory says that first choice of firms is to use internal financing which is obtained from retained earnings. But if firms need some external funding, then their first preference is to use the most secured funding i.e., debt which has lowest risk and they go for some riskier debt i.e. hybrid securities (convertible bonds) and then at the end, they finally choose preferred stocks and ordinary stock. Myers also discussed another theory i.e., Trade-off Theory which shows that firms will add up the debt to a particular limit where tax-shield that arises from the extra debt is equal to the cost of financial-distress. Financial distress is a state wherever firms are not able to fulfill, or they face difficulty in paying off its financial liabilities to their creditors, because of which they may end in the bankruptcy of the firms. Every management of firm must find out right structure of capital structure and appropriate funding for the firm.

For operating and managing any interruption, firms must be financially strong. If firms are financially strong then they can manage interruptions like COVID-19 and because of this, they can maintain their place in the market. But the

questions arises that how the firms can be financially strong? For the firms to be financially strong it is important that they must maintain their optimal capital structure. The most significant decisions that a financial manager must take is how to maintain the performance and competitiveness of the firm and it could be done when they will adopt right decisions about capital structure. When firms are seeking out about their financing then their main purpose is to maximize their profits by reducing its cost. For this purpose, they use external financing which we called the debt and use internal funds for financing that we called the equity. Some firms use both external debt as well as internal debt i.e., equity. Capital structure is a combination of external funding (debt) as well as internal funding (equity). So, there are two sources of financing, debt as well as equity which a firm utilizes to fund their operations.

Debt can be of two types; it could be long-term and short-term and equity financing could be in form of common stock or preferred stocks. Decision related to capital structure can affect the firm positively or negatively that is 'why it is an important decision. When firms take right decisions about financing then it can maximize its value and week decisions about financing can affect the firm badly. But how much we should finance through equity and how much we should finance through debt, it all depends on a firm decision. Some firms use only equity for financing, some use both debt and equity for their financing. It all depends on firms that what type of financial decisions they are taking.

Firms' managers take this decision, and they must make such decisions which are profitable for company, which can increase shareholders wealth, and cost minimization and risk factors are also included in his decision. This decision is also important for the firm to be competitive in the market. Because of these decisions companies survive in this competitive world, if companies are not able to make right decisions about capital structure, then they cannot survive in this competitive world and soon they face financial distress because of mismanagement of capital structure or not making right decisions at the right time. Because of current pandemic firms are also financially affected. COVID-19 has also influenced the capital structure of the companies. To manage such disruptions, they should

study market and make decisions about what is a suitable decision regarding capital structure at that specific time in the market.

Because of pandemic, firms' leverage is especially affected as financial institutions also faced many problems. There are some firms which are listed in the stock exchange, and some are not listed. Due to which effect of this pandemic on both types of firms is also different. As listed firms have more access to capital market financing than non-listed firms. Significantly, as greater information is available to Listed firms which may also lessen the reduction of credit during the crises, as compared to the firms that are not listed / Small & medium enterprises depend on some specific banking relations as a resource of external financing and may be more influenced due to negative supply of credit because of such disruptions.

Theory indicates that the financial crises may influence the capital structure of the companies through various ways. Because of financial crises, as uncertainty as well as risk increase and profits decrease, lenders and borrowers both are unwilling towards the long-term investment. From lenders' perspective, due to an increase in the default probabilities, dividend upon which lender is prepared to lend, significantly rises in the period of crises, because of which long term financing is less appealing as compared to short-term financing (Gürkaynak and Wright, 2012; Dick et al., 2013). Because of crises uncertainty rises, and it becomes ambiguous to forecast about businesses.

Firms should take such decisions which could lessen their leverage and maturity because they do not have the ability to commit themselves to an aggregate maturity structure. For instance, Brunnermeier and Oehmke (2013) presents a 'rat race' capital structure model which shows that when volatility is high then it will rise firms' incentives to shorten the debt maturity, irrespective of high roll-over costs which is related to short term debt, because when they do that, it will weaken the long-term investors' pay-off. The study reveals that during volatile conditions if firm value financial flexibility, then there are less expectations that these firms will enter the long-term contracts with covenants, and demand of long-term financing will decrease. For the period of economic crises, issuing of another long-term loan may be decreased and if another debt will be issued then these debts would

probably have shorter maturities that would be led by both supply and demand consideration (Asli et. al., 2019).

Economic theory specifies that the degree to which a crisis affect the capital structure of the firms by greater risk and uncertainty, and lesser returns are expected to rely on the characteristics of financial systems and surrounding environment of institution in which the firm is operating. For instance, Jensen and Meckling (1976) presented a model of agency cost which says that in those countries where monitoring and bankruptcy cost is high, a rise in the variation of returns would result in most risk which is taking by the shareholders i.e., a risk shifting effect. When widespread bad news and uncertainties occur, then in those environments where contrasts are difficult to impose, shortening of debt maturities occur which results in the de-leveraging e.g., in cases in which bankruptcy procedures and laws are in such a manner that the liquidation of assets is expensive (Diamond, 2004). In terms of global liability, in those countries where they have low rights of property and rule of law, lack of commitment with strong investors rights can cause inadequately short-debt maturities and too much roll-over risks which occur if there is high ambiguity (Jeanne, 2009).

In this study, the impact of COVID-19 on capital-structure of Listed Firms of Pakistan is examined. To analyze the behavior of capital structure, it focuses on three proxies. First one is long-term debt to asset ratio and second is short-term debt to asset ratio and third is the total debt to assets ratio. The study examines how COVID-19 affect the short-term financing, long-term financing and total financing of listed companies of Pakistan. This study further examines different sectors to check whether all sectors are equally affected, or some are more affected as compared to others.

There are some firm-level factors that influence the capital structure (size, tangibility, growth opportunity and profitability), which have been recognized in the previous studies (Rajan and Zingales, 1995; Demirgüç-Kunt and Maksimovic, 1996, 1999; Booth et al., 2001; Frank and Goyal, 2009). The purpose of these variables is to attract several factors that are supporting the capital structures of firms which are linked to agency models which is related to the conflict between insiders

and other financiers that are outside the firms for example, as shown in Jensen and Meckling (1976); Jensen (1986); Hart and Moore (1995); Rajan and Zingales (1995); Diamond (2004), and asymmetric information models which are related to external financing for example as shown in (Myers and Majluf, 1984). These firm-level determinants of capital structure consist of size of firm, tangibility, profitability, asset utilization and growth opportunity. This study finds the impact of Size, tangible assets, growth opportunity, asset utilization and profitability on capital structure. As these all variables are related to capital structure and affect it in one way or another. So, to clearly identify the impact of COVID-19 on capital structure or minimize the changes because of these variables on capital structure, the study also uses them as control variables.

1.2 Research Gap

As COVID-19 is a recent pandemic, this has left its impact on every sector. It is a global crisis which has caused a situation of fear due to which economic stagnation has created in different business activities like construction has stopped, factories are closed, delays in transportation, labor shortage, financial issues, no transaction around the world etc. Shafi et al. (2020) studied an impact of COVID on micro, small & medium sized enterprises of Pakistan. Results show that COVID has badly affected the firms as well as these firms are facing a lot of issues. But still financing or cash flow requirements of businesses cannot be changed as they must pay salaries, fixed cost etc. for which they must create an alternative for this cash flow requirement. And this alternative is no other than short-term debt. so, there is a possibility that this pandemic would disturb the companies' capital structure. According to the latest report of UNCTAD (United Nations Conference on Trade and Development (UNCTAD, 2020a), due to COVID pandemic, Pakistan would be hardest hit economically. Because of this specific situation, companies' capital structure would be constant or there would be some variations in the capital structure to handle this situation? Therefore, there is need to study about effect of COVID-19 on capital structure of firms in Pakistan. Till now, there is limited

work which examines this link. That is why the objective of this study is to examine the impact of COVID-19 on capital structure of listed firms in Pakistan.

1.3 Problem Statement

The pandemic has caused a situation of fear due to which economic stagnation has created in different business activities. But firms still need some cash flows which they could use to pay fixed cost etc. For this cash flow they will use an alternative i.e. short-term financing. Because of this specific situation, companies' capital structure would be changed or not? There is a need to investigate this change. As the capital structure is also important for the existence of any firm, so study about capital structure is important as firms can get more information and benefit from it.

1.4 Research Questions

There are different questions that are raised about capital structure of the firms;

1. How financial and macroeconomic uncertainly due to COVID-19 affect the capital structure?
2. Is the change in capital structure due to COVID is different in different sectors of Pakistan or the same?

1.5 Research Objectives

1. To explore how financial and macroeconomic uncertainty arising out of COVID influence the firms' capital structure.
2. To explore the impact of severity of COVID-19 on firms' capital structure.
3. To explore all the firms are equally affected or it is different in various sectors of Pakistan.

4. To compare among capital structure of different sectors of listed firms of Pakistan.

1.6 Significance of the Study

Due to COVID-19 every firm is facing many issues. Now, firms are trying to recover their losses which they faced due to this crisis. They are exploring each possibility and information which could be helpful in this pandemic and to recover their losses. This study helps policymakers and practitioners to identify different strategies that can be helpful to handle this crisis. It also helps many firms which are highly affected in this pandemic. This study also helps them how they can prepare themselves to face this risk. It assists the firms in their planning and decision-making by predicting the risk in the early stage.

1.7 Plan of the Study

This research is organized into 5 chapters. First chapter is related to introduction and theoretical background of the study. Second chapter describes the literature on relationship between capital structure and COVID-19 pandemic. Third chapter describes the methodology which is adopted for this study and the data employed. Fourth chapter consists of the results and discussions. Fifth chapter concludes the study and provide policy recommendations and direction for future research.

Chapter 2

Literature Review

2.1 Literature Review

In December 2019, there was an outburst of an unfamiliar etiology, later which was described as novel virus named as corona virus (COVID-19). This corona virus spread very quickly and affected many things (World Bank, 2020). Due to which on 30th January 2020, World Health Organization declared a 'Public Health Emergency of international concern' because it was spreading globally (World Bank, 2020). Due to this virus, many cases were reported in a very short time, and it started to spread exponentially all over the world, which is why WHO called it a 'pandemic' on March 11, 2020 (World Bank, 2020). On 19th July 2020, WHO told that there were 14,043,176 cases because of this virus and there were 597,583 deaths in 216 countries (World Bank, 2020). In Pakistan, due to COVID-19, the first case was testified on February 26, 2020, and after 15th March 2020, these cases were spreading more quickly because of pilgrimage that was arrived from Iran through Taftan Border, due to which lockdown was imposed by the government of Pakistan within a day, creating disturbance because migrants are returning to their homes, aggravating gathering and making the social distance impossible to maintain (World Bank, 2020). This crisis turned international from 21st February to 24th March 2020, yet there were cases of corona worldwide. Because of the lockdown global economy was greatly affected (World economic, 2020).

In the past many external environmental crises were reported which affected the micro, small and medium enterprises globally like 1953 great flood in Holland, 2011 floods in Thailand and many more. Moreover, there were many widespread epidemics that had happened worldwide like swine Flu epidemic (2009 HINI), in 2014 Ebola outbreak, Avian influenza, Salmonella Infantis outburst, ZIKA epidemic etc. besides COVID-19 (Auzzir et al., 2018; Eggers, 2020; Kim et al., 2020). Such disasters not only have an impact on the economy, but also created a risk to corporate community.

Due to natural disasters, interruptions were seen in the supply chain all over the world and due to significant disruptions, small and medium firms were badly affected even if a disaster had not directly affected them (Prasad et al., 2015). Different external environmental crises like flood, earthquakes, epidemic diseases etc. badly affected the business operations and even affect their existence (Asgary et al., 2020; Prasad et al., 2015; Samantha, 2018; Eggers, 2020). Additionally, micro, small and medium enterprises were not financially strong, small, and had rare resources, due to which they were more vulnerable to crises as compared to big companies (Asgary et al., 2020; Bartik et al., 2020; Eggers, 2020; Prasad et al., 2015; Samantha, 2018; Williams and Schaefer, 2013).

As uncertainty caused by such disruptions increases and business opportunities become more ambiguous than the companies which are not able to obligate a collective maturity structure then they took a step, to lessen their leverage and debt maturity. For instance, there is a model of capital structure that we called 'rat race' of Brunnermeier and Oehmke (2013), this model shows that due to extreme volatility, incentive of firm to contract the debt maturity increases, despite the high roll-over cost which they must bear due to short-term debt, because by adopting this it will reduce the long-term investors' pay-offs. This model shows that during volatile economic conditions if firms prefer financial flexibility, then there is a less possibility that they will move into long-term contracts with covenants, due to which long-term financing demand will reduce.

Therefore, in the period of such financial crises, there are less chances that new long-term debt will be issued and debt which will be issued would have short

maturity both determined by demand and supply considerations (Asli et. al., 2019).

The maturity composition of business debt is significant as this maturity composition defines a level by which assets are funded by liabilities which in turn reveal the company to rollover risks. Later, reduction in maturity of business debt transfer roll-over risk to firms and ahead of the lenders, because of these uncertainties of refinancing there is a negative influence of long-term productive investments and this influence is also on the growth of firm (Milbradt and Oehmke, 2015). For instance, different studies i.e., Duchin et al. (2010); Almeida et al. (2009) for the US, and Vermoesen et al. (2013) for Belgium, indicate that those companies which have higher outstanding of short-term debt before the crises, during the crises they bear a larger decline in investments. In addition to this, during higher uncertainty short-term maturities might support to lessen the under-investment problems of debt finance and become more attractive for borrowers, because worth of long-term debt as compared to the worth of short-term debt is less delicate for future investment opportunities (Myers, 1977).

It is very difficult to estimate the influence of pandemic while we are in the mid of this COVID-19 crisis. The research about impacts of such crises on culture, economic and social is very restricted, even though the globe has faced many such pandemics in the past. The literature on impacts of these events from the past show that returns on assets are very low during this pandemic and after such pandemic (Jordà et al., 2020). After these incidents, individuals manage to prevent investment as well as choose to cut down their deficits by with-drawing, due to which the economic activity is very low which lead to decline in overall growth.

In the current situation, as there is no economic activity due to which the returns on investments are negative, that is why we cannot foresee whether people would demonstrate same conservatism or not. Funk et al. (2009) find that fluctuations in investors' behavior mostly connects to security of own wealth, because they are worried about their security and safety instead of considering the entire community. There is an example which can be linked from current situation is to wear

masks. It is greater to do with the personal ease of access instead of a common behavioral change in the society. The impacts of COVID-19 epidemic around the globe are so severe which effects both human lives and financials, for example many well-known brands all over the world might go bankrupt altogether. Because the people around the world, most importantly in the developed countries are restricted in their homes, which has led to faltering in the economic events (Tucker, 2020). For instance, financial pressure that is confronted by the leading US brands like (Donthu and Gustafsson, 2020).

According to OEF (Oxford Economic Forecasting) a report published in 2009, even though the financial costs of the swine flu pandemic were comparatively low, but in the long-term, same pandemics may be projected to result in a significantly higher cost. In case of demand in tourism, we can predict a significant decrease in travel volume, which will have an impact on tourism supply. An important point related to tourism mentioned in the OEF economic model of 2009 is that by-country effect is going to be extremely unpredictable because of different levels of economic dependency on tourism exports and tourism imports (which the OEF models in regard to a tourism intensity measure).

In 2009 in Mexico, the early outburst of the H1N1 influenza virus or swine flu epidemic happened before expanding to coterminous countries Like America as well as to other nations such as United Kingdom. The swift rises in the total number of cases affected by swine flu virus in the United Kingdom, draw the attention of worldwide media coverage, thanks to the nation's top place on the international tourism map. The world was not completely unprepared for this swine flu crisis, but WHO in 2005 and in 2006 has prepared because of expectation of possible avian flu outburst, but mostly countries have been affected by December 2009, even though its severity as well as scale was changed across the region (Page et al., 2012).

Boodhoo (2009) reveals that capital structure is a framework related to financial system of a firm, and it is a mixture of debt and equity funds retained through an equity. Brendea et al. (2011) indicates that capital structure is a financing that is long-term and is being used by an entity, whereas Nirajini and Priya (2013)

states that capital structure is a mean through which a firm is financed through a mixture of long-term and short-term obligations. Capital structure is a mixture of debt and equity which a firm utilizes so that they can do the financing for their firms. If irrational decisions are made by financial manager about how to raise capitals out of debt funding, so it might be expensive for firm as cost of capital can rise which at the end reduce the value of the firm. Hence, we can say that such irrational decisions made by financial manager can influence survival and constancy of business(Damodaran, 2001; Pais, 2017).

The first theory about capital structure is proposed by M&M (Modigliani and Millers), which state that there is no impact of capital structure on market value of the firm and on average cost of capital. There is an assumption behind the theory of Modigliani & Millers that there is a perfect capital market in which there is no transaction cost, no tax, and debt is free of risk (Modigliani and Miller, 1958). This theory wis supported by Cole et al. (2015) study which shows that there is no link between capital structure and stock price of companies.

In 1963, Modigliani and Millers present a new study to fix their mistakes in earlier research and indicate that firms get tax advantage through debt finance (Modigliani and Miller, 1963). Thus, capital structure is related to the value of firm and this value can be maximized by increasing the level of debt in the capital structure (Sabin and Miras, 2015). This theory is also supported by Nirajini and Priya (2013) that debt and performance of firms have a positive relationship. Modigliani & Millers theory is criticized as impractical because of its unrealistic assumptions (Sabin and Miras, 2015). The M&M theory is limited to applicability because there is no perfect capital market and in real world transaction cost and bankruptcy cost exist (Foo et al., 2015).

Deeds et al. (1995) reveal that Modigliani & Millers' theory is appropriate for small firms only to explain decisions about capital structure. Even though, Modigliani & Millers' theory has a few limitations but still it offers a groundwork for the capital structure and other theories (Ahmad et al., 2012). Ahmeti and Prenaj (2015) also stayed with Modigliani and Millers theory extends beyond the suggestions for their own.

Many research studies form the Trade off theory and is taken from the Modigliani & Millers' relevant theory (Myers and Majluf, 1984). Trade off theory proposes that every source of finance have their own cost and benefits (Awan and Amin, 2014). The optimal capital structure of firm is recognized by the trade-off of cost and benefits of financial source (Myers and Majluf, 1984). Trade off theory proposes that firms with greater profitability can take more tax advantage through increasing their borrowing without taking the risk of financial distress and use a greater percentage of debt finance in capital structure (Kausar et al., 2014).

Several studies such as Goyal (2013); Javed and Akhtar (2012); Salawu and Awolowo (2009); Kyereboah-Coleman (2007); Negasa (2016) offer empirical proof to support trade-off theory and state that profitability and debt level has a positive relationship. Though, trade-off theory is criticized by saying that it is accurate with the assumption of no adjustment of cost (Myers and Majluf, 1984). Moreover, trade-off theory also overlooks the impact of retained earnings in capital structure (Frank and Goyal, 2009). Pettit and Singer (1985) criticize that this theory is not appropriate for smaller companies, as smaller companies do not have sufficient earnings to trade-off the cost of debt.

Pecking-order theory is presented by (Myers and Majluf, 1984). This theory explains that there is no existence of optimum capital structure, and internal funds are preferably used by the firm's manager so that they could do financing to manage their business activities (Hasan et al., 2014). There is an evolution of asymmetric information among the manager and stakeholder, managers have more information related to the performance of firm as compared to investors who are outside the firms (Nirajini and Priya, 2013). Pecking-order theory indicates the presence of financial hierarchy in which firstly internal funds are used, then debt is used and at the end equity is used (Saputra et al., 2015; Foo et al., 2015). There is a research which utilize pecking-order theory for checking the capital structure and it is observed that there exists a negative influence of capital structure on performance of the firm (Mohammadzadeh et al., 2013). Acaravci (2015) showed pecking-order theory is generally applicable in both big companies and small companies. Butt et al. (2013) reveal that pecking-order theory reflects the motivation

of firm. Liesz (2001) also supports the Pecking-order theory detect and describe actions of management. However, the tax shield effect is little considered by this theory (Acaravci, 2015). Moreover, this theory also overlooks an issue of excessive financial slack and long term fails to provide security which can be directed to the low security price (Liesz, 2001). Saputra et al. (2015); Foo et al. (2015); Mohammadzadeh et al. (2013) studies show that there is a negative impact of capital structure performance of the firm, which is consistent with this theory.

The market timing theory proposed by Baker and Wurgler (2002) confronts the two earlier theories by saying during favorable periods the firms funding their deficits via the issuing of shares. Crotty (2009) state that during financial crises firms choose to raise their capital by way of debt. Hence, during the economic crises the market timing indicates for an improved level of leverage. The market timings theory presumes that there is no optimum capital structure, financial choices are varying during the time period Baker and Wurgler (2002), and development of capital structure should be viewed as the consequence of historical decisions of funding. Market Timings Theory implies that companies will decide whether shares should be issued or not depending upon the market conditions, and this changing shall have the impact over the next few years due to the fact that the debt modification by itself is not a goal (Hovakimian, 2006). Less indebted companies are those companies that have collected financial resources when they have been overvalued and tacitly, very indebted companies are those firms that have drawn external funds when their valuations are damaging (Baker and Wurgler, 2002). At the same moment, these conditions may be observed once an increase in the price is projected, wherein companies will attract capital, or if a decline is expected, so they will select indebtedness (Kayhan and Titman, 2007). It suggests that there is a negative connection between the evaluation of capital market of company and the level of indebtedness (Hovakimian, 2006). Like this, choices that managers do depend on the deviations of share price and cost of debt, and at the same moment, these choices and variations of capital markets have a long-term influence on the financial framework (Baker and Wurgler, 2002).

In 1976, Jensen and Meckling develop the Agency-cost theory. It is a cost that

arises due to the internal conflicts of agent and principal (Ahmad et al., 2012). (Jensen, 1986) create a hypothesis about free cash flow, shareholders as well as managers have a unique expectation about usage of free cash, that's why conflict arises between them. Principal-agent conflicts and problems of free cash flow can deal with a certain amount of capital structure through raising the level of debt (Boodhoo, 2009). A very high amount of debt encourages managers to make investments in those projects which are profitable that help shareholders' capital to be certain that firm can pay interest (Berger and Di Patti, 2006). Therefore, a large quantity of debt can reduce the agency cost which leads to a rise in the performance of the firm (Chinaemerem and Anthony, 2012). The research of Chinaemerem and Anthony (2012) provides support to Agency-cost theory.

Moreover, Agency-cost theory can be regarded as a form of trade-off theory (Brendea et al., 2011). This theory says that capital structure is optimal at a point where the benefit that we get from debt finance offsets the agency cost of debt (Brendea et al., 2011). In the world Agency cost really exists, but the intensity of agency issue is dependent on the law, regulation, and human ingenuity in framing the contracts (Jensen and Meckling, 1976). But this agency cost theory is appropriate only when the goal of agent and shareholder is incongruent (Arthurs and Busenitz, 2003). Agency cost theory is criticized that it is fit to describe the idea of human being, but it does not properly disclose varied motivation for the behavior of an individual (Baumüller, 2007). The agency cost theory reflects regarding the perspective of the principal, behavior of principal, their responsibilities, and its impact on affiliation with an agent was overlooked (Baumüller, 2007).

Capital structure is not only a significant matter for companies that attempt to increase their value, but capital structure is also an important issue through economic downturns. During financial crises, companies in the country faced a trend of bankruptcies with an extreme leverage which can lead to sovereign default and financial distress. Previous studies are mostly related to the theories of capital structure i.e., trade-off theory and pecking-order theory etc. These theories are developed under normal economic circumstances. There is less research on the capital structure during economic downturns or during financial crises (Lyubov

and Heshmati, 2019). During financial crises, financial distress and bankruptcies of companies provide a foundation for current empirical studies to explore an outcome of financial crises on capital structure of firms globally e.g., (Demirgüç-Kunt et al., 2015). There is a study which examines the influence of Asian crises 1997 on speed of adjustment and the capital structure of Listed companies in Korea. The study uses the dynamic model of capital structure and observe that crises negatively affect the optimum capital structure. The study notices that after 1997 crises, mean adjustment speed is significantly reduced, which shows that firms faced a lot of difficulties after the crises (Kim et al., 2020).

Chang et al. (2019) investigates an influence of capital structure on profitability by using four Asian markets for the period of 2013-2016. The outcomes of this study indicate that leverage and profitability have a significant as well as negative relation, while growth as well as leverage has a significant and positive connection in Korea, Taiwan as well as in Hong Kong. In addition to this, it is also noticed that in each country size as well as leverage has a significant and a positive connection. There are large number of studies which recommended that firm size has a positive relation to leverage ratio. The foundation of this principle is evidence proposed by the Warner (1977); Ang et al. (1982) that as firms' worth decreases, relevance of direct bankruptcy cost decreases, indicating that effect of this cost on the choices of borrowings of large firms may be insignificant. It is said that the large companies are most diversified Titman and Wessels (1988), and easily enter the capital markets and do borrowings at the greater reasonable interest rates Ferri and Jones (1979).

The trade-off theory foresees that in place controlling for the profitability of assets, those companies who have new opportunities of investment, have less leverage for the reason that: (a) More opportunities of investment in firms are connected with a lesser free cash flow and have fewer requirements for the disciplinary role of debt over manager actions Jensen (1986); (2) Agency problems are created between stockholders and bondholders in those firms who have growth opportunities because in these firms shareholders have greater options of risk-shifting substitution and have stronger incentives to underinvest Myers (1977); (3) Finally, in

the bankruptcy situation as the value of growth opportunities is close to 0, then in those companies in which investment opportunities signify larger proportion of existing value of firm, cost of financial distress connected will be higher with the use of debt (Myers and Majluf, 1984; Harris and Raviv, 1991). These rationales lead the Trade-off theory to forecast a negative connection between investment opportunities and debt in the company. These arguments are consistent with those companies that consume equity to fund their growth Jung et al. (1996) and with those companies that have fewer growth possibilities and use debt financing because of its disciplinary role (Jensen, 1986). As compared to this theory, Pecking-order theory foresees a positive marginal connection between growth opportunities and leverage, because strong financing needs lead to the growth opportunities and, all the things being equivalent, will lead to an issuing of more debt. Likewise, as information asymmetries in place regarding investment opportunities are greater than assets, Pecking-order theory predict that companies who have greater opportunities highly prefer the debt as compared to equity (Alves and Francisco, 2015).

There are studies which say that Global Financial Crises have a negative impact on the capital structure of Turkish firms. For example, Jermias and Yigit (2019); Yildiz et al. (2018) show that after Global Financial Crises the adjustment speed of capital structure of Turkish companies had decreased. As Financial Crises of 2007-2009 rises, firms shorten the structure and maturity of debt due to increase of information asymmetry, transaction cost and risk. The empirical studies reveal that larger firms and smaller firms made crucial changes in their capital structure and debt maturity (Alves and Francisco, 2015; González, 2015; Zeitun et al., 2017; Mimouni et al., 2019; D?Amato, 2020; Demirgüç-Kunt et al., 2020)

Regarding international sample, Alves and Francisco (2015); González (2015) demonstrate that during the Global Financial Crises firms reduce their maturity of debt due to decrease in supply of credit and demand of credit. Recently, Demirgüç-Kunt et al. (2020) notice that during as well as after the Global Financial Crises smaller firms faced more issues in accessing finance. For those who are included in six Gulf Cooperation Council (GCC) countries, Zeitun et al. (2017); Mimouni

et al. (2019) suggest that companies in Gulf Cooperation Council countries have decreased borrowing and shortened the maturity of debt. Particularly, D?Amato (2020) reveals that Italian SMEs reduced their leverage and debt maturity.

Yildiz et al. (2009) observe that debt and profitability are negatively correlated with each other. The study provides that firm size and capital structure has a positive connection. Likewise, this negative connection between capital structure and firm size has been verified by many studies (Ata and AĞ, 2010; Demirhan, 2009; Karadeniz et al., 2011). Kaynak et al. (2005); Uyar and Guzelyurt (2015) have argued that Small and Medium Enterprises (SMEs) do not have an objective debt ratio and use financing in a pecking order. Jermias and Yigit (2019) also verifies the reverse trend on the adjustment speed of leverage following the financial Crises. Moreover, utilizing CBRT data, Köksal and Orman (2015); Orman and Köksal (2017) state that both stock exchange listed as well as unlisted (small and private) Turkish companies can change their decisions regarding Capital Structure depending on whether the economy remains stable or not. There is a research which examined that profitability, tangibility, growth and liquidity have a significant effect on the capital structure in manufacturing firms of Indonesia. Whereas non-debt tax shield, age, size and investment do not have a substantial impact om capital structure (Margaretha and Ramadhan, 2010). There is another study which shows different results. The study notices that in manufacturing companies in Indonesia, decisions related to capital structure are more affected by the size, business risk and liquidity ratios, but no significant results are shown by liquidity, profitability, sales growth and asset structure (Furi and Saifudin, 2012). There is another research of real estate company which find that debt ratio and growth significantly affect capital structure, whereas profitability revealed no important results (Kesuma, 2009).

A study done by Milton and Raviv (1991) observe that profitability has positive significant effect on capital structure. This research shows that big firms with huge profits and strong financial resources will acquire low-cost funds. The firm's strength in making profits to ensure the very good for creditors to be capable to offer debt with relatively low interest rates. This debt with little interest rate is

usually used to fulfill requirements of firm's funds. The positive affect of profitability on capital structure is also observed (Ross, 1977; San and Heng, 2011a; Scott, 1977).

In compliance with the Pecking Order theory put forward by Myers, first internal funds are used to meet the financing needs. For firms that have a favorable prospect, only internal funds are not self-sufficient. Therefore, debt can be used to fulfill the requirement of company's resources. Those companies that have higher growth opportunity, they need greater debt financing. It can be assumed that there is a positive effect of growth opportunity on capital structure. This result is also confirmed by the studies of (Hossain et al., 2012; Huang et al., 2006; Myers and Majluf, 1984; Pahuja and Sahi, 2012; Titman and Wessels, 1988).

There are studies which shows that firms that have higher growth opportunity be likely to have a huge internal funds. If basis of internal funds is large enough that is owned by a firm, then the firm's need for debt will be reduced. This outcome shows that the growth opportunity has a negative impact on capital structure. The outcomes of research exhibited a negative effect (Akhtar and Oliver, 2009; Bauer et al., 2004; Buferna et al., 2005).

Tangibility has been described as the ratio of fixed assets and total assets. The ratio shows large amount of fixed assets that is possessed by a firm. Firms that have huge amount of fixed assets have a tendency to get large debt. The theory discusses the trade-off of the bankruptcy risk for firms having huge amount of debt. These big firms are required to have an excessive tangibility for each debt to avoid the risk. These results are also confirmed by various studies (Akhtar and Oliver, 2009; Antoniou et al., 2002; Bevan and Danbolt, 2002; Buferna et al., 2005; Çekrezi, 2013; Friend and Lang, 1988; Khrawish and Khraiwesh, 2010; Milton and Raviv, 1991; Rajan and Zingales, 1995; Scott, 1977; Shah and Khan, 2007). Grossman and Hart (1982) recommend otherwise. They suggest that firm must increase the level of debt for those firms that have a little collateral. The accumulation of this debt is useful for stockholders to check activities of the administration.

This indicates that the tangibility has a negative impact on capital structure. The outcome of this negative influence is observed in different studies (Bauer et al.,

2004; Ebaid, 2009; Fauzi et al., 2013; Hossain et al., 2012; Huang et al., 2006; Sayilgan et al., 2006).

Rajan and Zingales (1995) observe that big firms have a tendency to get the convenience of attaining debts. They search for their trusted lenders as compared to large firms that can diversify their investments, so that bankruptcy risk can be low. Cost of finance companies is cheaper when the risk of bankruptcy is lower. Such as a large company identical with the financial fundamentals of company. It means that debt will be achieved when company's size will be greater, or there is a positive impact of size on the capital structure. This positive influence is also confirmed through these studies (Antoniou et al., 2002; Bauer et al., 2004; Çekrezi, 2013; Furi and Saifudin, 2012; Huang et al., 2006; Karadeniz et al., 2011; Khrawish and Khraiwesh, 2010; Ogbulu and Emeni, 2012; Titman and Wessels, 1988).

Fama and Jensen (1983) observe that there is a negative influence of company's size on capital structure. Debt policy is an information which is not symmetric as needed by the company and can be asymmetric information. For stockholders, taking a large amount of debt could be a negative information. Consequently, organizations mostly use their own debt capital. It means that when the company size is large, the debts will be smaller, or there would be the negative impact of capital structure on the company size. These results are also supported by various studies (Fauzi et al., 2013; Pahuja and Sahi, 2012). In the late 2000s the financial crises had a main influence on the financial markets, which significantly decreasing security issuance by companies and lending through financial institutions. Financial crises caused disruptions in the capital and lending markets; the consequences of these disruptions are drastically increasing the level of debt in capital structure of the firm.

It has been demonstrated that especially between 2006 & 2008, the Global financial crises and instantaneous recession trigger sample companies to rise their market debt ratios (MDRs) by an average of 5.50%. When the effects of recession on capital structure of the firm are removed, it is observed that all the debt accumulation (5.1%) is done to financial crises. Moreover, it is observed that effect of

financial crises on capital structure of firm is almost entirely inverted at the end of 2010.

There is an investigation that uses book debt ratios (BDRs) and observe similar impacts of financial crises, but these impacts are smaller (Fosberg, 2012). Önel and Gansuwan (2012) analyze the effect of capital structure on performance of the firm by using 174 non-financial firms of Sweden as a sample. The outcomes of this study show that capital structure and performance of firm has significant negative relation. Ebaid (2009) analyze the influence of choosing the capital structure on performance of the firm in Egypt and outcome of this research reveals that there is weak to no association between performance of the firm and choice of capital structure.

Abu-Rub (2012) studies the effect of capital structure on performance of Palestine firms, the findings reveal that there is a positive effect of capital structure on measures of firm's performance, in both the marketplace and in accounting measures. There is a study which analyzes the influence of capital structure choices on financial performance of firm by choosing 15 manufacturing PLCs in Ethiopia as a sample from 2006-2012. The results show a significant negative connection between capital structure choices (total-debt, short-term debt, and long-term debt ratios) and financial performance which is being measured by using Return-on-Assets and Return-on-Equity (Admassu, 2016).

The common determinants of debt ratio which most researchers have used are size, growth, risk, profitability, and liquidity. From US firms, the empirical studies suggest that leverage rises with fixed assets, investment opportunities, non-debt tax shields, and size of the firm, and declines with the probability of bankruptcy, volatility, profitability, advertising expenditure, , and uniqueness of the product (Harris and Raviv, 1991). However, Devic and Krstic (1991) retrieve many variables which are constantly connected with the corporate capital structure. These variables are growth opportunities, tangibility, profitability and size. Deesomsak et al. (2004) observe that the positive impact of size of firm on leverage as well as negative influence of non-debt tax shield, liquidity, growth opportunities and performance of share price on leverage provide support to major theories of

capital structure. Some studies find that in developing countries there is a positive relation between leverage ratios and size of firm Pandey (2001); Huang et al. (2006), Whereas a new study report a negative relation whereby it is linked with short-term debt and when it is linked with long-term debt it shows positive relationship. Zoppa and McMahon (2002) find that there is negative relation between growth opportunity and leverage, while Booth et al. (2001) observe that growth opportunity and leverage has a positive relation.

Fattouh et al. (2005) find that growth has a positive as well as significant coefficient at low level of leverage and moderate levels of leverage, on the other hand at two highest quantities of distribution it becomes insignificant. It can be recognized to fact that at low and medium levels of leverage the effect of asset substitution is low, whereas the marginal agency costs related to the non-collaterizable assets increased at higher levels, thus discouraging the firms to resort to leverage.

Shah and Khan (2007) report that variable of growth is significant at 10% level, and it has negative connection with leverage. Their outcomes confirm the outcomes of previous research such as the studies of (Titman and Wessels, 1988; Rajan and Zingales, 1995). The predictable reason is that between safe and risky fir, growing firms have more options. Um (2001) contends that firms keep its tangible assets' level low, to mitigate equity agency cost the firm's management is offered with the chance of selecting a high level of debt, whereas for debt agency cost the size of the firm is used as a proxy which is occurring from conflicts of managers and shareholders. The study recognizes that there is a positive relation between tangibility and debt.

There is a study which examine the influence of capital structure on investment opportunity on pharmaceutical firms of Nigeria. The results find that there is a significant, negative and strong effect of total-debt, short-term debt and performance on investment growth opportunity of these Nigerian firm, whereas there is no effect of long-term debt on investment opportunity within this study period (Hassan and Aitimon, 2017). Wagenvoort (2016) state that a firm which has growth opportunity can decide that how capital is organized. Both theories i.e.,

Trade-off theory and pecking order theory come up with an opinion on how the relationship between growth opportunity takes shape. The trade-off theory claims that highly growing firms are subject to increase bankruptcy cost which indicating a negative correlation (Baskin, 1989). Whereas Pecking-order theory proposed positive connection such as firms with rich growth opportunities frequently find that internal funds are not sufficient and thus external funds are required (de Jong, 1999). Favoring debt over equity in the Pecking order hierarchy, leverage will rise with growth opportunities showing a positive association.

Tang and Jang (2007) observe that for the US lodging companies, long-term debt level has positive relationship with growth opportunities and fixed assets. But they did not observe any proof of connection among leverage ratio, volatility of earnings, size of the firm, profitability and free-cash flow. Karadeniz et al. (2009) report negative relationship among debt ratio, effective tax rates, tangibility of assets, and return of assets of Publicly traded lodging firms of Turkey, while there is no relation among debt ratio, free cash flow, non-debt tax shields, growth opportunities, net commercial credit position and size of firm. The study finds that these results neither support pecking-order theory nor the trade-off theory. Kim et al. (2006) believes that elements like, uniqueness, trend and industrial sector may cause firms to diverge from their optimum leverage. The speed at which firms alter towards the optimum capital structure is influenced by intangible assets, current liabilities, investments and crises, which maximize its value of the market.

Deesomsak et al. (2004) analyze the determining factors of capital structure of those firms that are working in the Asia Pacific area in 4 countries which have various environments such as, Thailand, Australia, Singapore, and Malaysia. The outcomes of this study indicate that capital structure is influenced by the surroundings in which company is working and some particular factors. The study investigate that the 1997 financial crises have a significant but varied influence on the decisions of the firm about capital structure through 4 countries. The debt ratio of Thailand, Malaysia, and Singapore has significantly enlarged after the crises. But in 2000, average debt ratio of Singapore is dropped, while the debt ratio of Thailand firms and Singapore are still around the level of 1998. Throughout the

whole period of observation, the Australian firms' average debt ratio is constant which shows that firms in the Australia are not directly influenced because of the crises as it is happened in some other countries and this constant rate of debt ratio is because of the high legal protection of shareholders. The financial and economic crises of 1997-1998 severely affected the small and medium enterprises. As interest rate begin to rise, many small and medium enterprises may bankrupt because of tight monetary policies, credit crunch and drop of international and domestic demands (Filardo, 2012; Wehinger, 2014). During an economic crisis, small and medium enterprises are more exposed due to weak financial structures and cash flow, little equity funds, inadequate adaptation potential and flexibility of downsizing, problems of liquidation, too much dependence on outside financial sources, tightened lines of credit, payment interruptions on receivables, deficiency of funds, and deficiency of essential skills to accept or make essential strategic decisions (Ates et al., 2013; Sannajust et al., 2014; Wehinger, 2014; Karadağ, 2016).

In 2014, Asia suffered disasters around 46% produced through natural hazards universally. Meanwhile 1985, Asia is the most susceptible area in the world found on the number of disasters, numbers of deaths and people which are influenced and economic damage, and it account for 50% -70% of global natural disaster statistics (Guha-Sapir et al., 2015). These tragedies not only influence the persons but also the industries from big multinational firms to small and medium firms. For example, because of floods in Thailand in 2011, at least 557,637 trades are influenced in the areas where there is flood and 90% of these businesses are small and medium enterprises. Moreover, around 2.3 million workers lose their works due to this tragedy (Perwaiz, 2015). There is a research which studies the performance of energy companies during the outbreak of COVID-19. The results find that COVID-19 has negative influence on corporate performance of energy sector, with the decline in performance in the first quarter of 2020. COVID-19 harm the productivity of energy sector which causes the revenues of firms to fall. The companies of this sector collapse to cover fixed costs and expenses which result in poor corporate performance eventually. The study finds that companies' performance with goodwill impairment is negatively influenced by COVID-19 (Auzzir et al.,

2018).

Opler and Titman (1994) indicate that firm sales and stock returns are more greatly influenced by firm leverage when the firm's industry is performing poorly. Lang et al. (1996); Aivazian et al. (2005) show that when there are low investment opportunities for the firm then the firm leverage influence growth of firm negatively. Fresard (2010) find that when firms face higher levels of import competition then increased firm cash holdings more positively influence firm growth.

In the context of the Great Recession, Giroud and Mueller (2017) observe the real economic effects of increased leverage by indicating that firms with higher leverage have a more elasticity of establishment-level employment regarding local house prices. Bhamra et al. (2010) find that the firms are more anxious about financial constancy, and they become more conservative about their financial procedures due to possibility of unexpected financial crises. Therefore, the debt-to-equity ratio has turned into a significant indicator of survival (Campello et al., 2010). Cornett et al. (2011) indicate that since the credit supply is limited, the banks suffer liquidity problems also, which influence the borrowing cost of the firms negatively. Campello et al. (2010) report that the growth opportunities for many companies during the financial crises are influenced in the negative way since it turns out to be harder to obtain external financing.

Watson and Head (2010) state that this is making the administration more worried related to the investment decisions along with the proper level of debt and equity because it has been proved to have an impact on performance of the firm (Fama and French, 1998; Gleason et al., 2000; Berger and Di Patti, 2006; Margaritis and Psillaki, 2010; Fosu, 2013). Regardless of convincing proof of financial crises' influence on capital structure, the industry particular impacts are not yet verified. It is logical to assume that influence of financial crises on capital structure of the particular industries varies since many studies demonstrate that capital structure varies in different industries (Bradley et al., 1984; Frank and Goyal, 2009). Basically, it has been argued that companies working in a similar industry are same and confront the similar risks, challenges, profitability, regulations etc. with their financial decisions (Bradley et al., 1984; Harris and Raviv, 1991; Kovenock and

Phillips, 1995; Frank and Goyal, 2009; Morri and Cristanziani, 2009). The final interpretation shows that various industries should be considered along with the different capital structures and thus, the impact of financial crises on different industries may have fluctuated among industries. In addition to this, it is claimed that theories developed about the capital structure until now, do not highlight the direct relationship between industry and capital structure (Abdullah et al., 2012). As such, it is an area which is yet unclear.

Even though there are many studies about capital structure, but the significance of choice of capital structure is yet ambiguous. Viviani (2008) highlights significance to ascertain the correct amount of debt and equity capital because it facilitates a firm to enhance its worth of market and to maximize its returns. Though, results of impact of capital structure on performance of the firm are ambiguous. Studies such as Berger and Di Patti (2006); Margaritis and Psillaki (2010); Fosu (2013) discover that there is a positive impact of financial leverage on performance of firm. The description of this resides in the fact that those operations which are financed with capital of owners is more costly than use borrowing financial resources as financing. Because the required rate of return of owner on the capital invested often goes beyond the interest rates on loans (Rajan and Zingales, 1995; San and Heng, 2011b; Salim and Yadav, 2012).

In general, there is a significant influence of financial crises on capital structure of business, and concentration has been pointed to the direction of level of debt as well as various debt options available due to the fact that debt is related to risk (MacKay and Phillips, 2005; Brealey et al., 2012; Ross et al., 2013; Fosberg, 2013; Custódio et al., 2013). Bradley et al. (1984) find extraordinary variations in the capital structure among industries.

This is verified by Frank and Goyal (2009) which reveals that how various factors influence the amount of debt in various industries. For example, those businesses which need to make enormous investments in fixed assets, they as well bear high-level fixed cost that often leads to a greater level of leverage. As compared to this, there are businesses with lesser fixed cost has smaller level of debt (Brigham & Houston, 2007).

The empirical data from Guney et al. (2011) indicate that there are substantial changes in ratios of the debt among industries, which is clarified by the fact that firms working in similar industry have numerous resemblances and work in similar environment wherever they bear comparable challenges, , risks, competition, technology, regulations and profitability.

In addition to this, Balakrishnan and Fox (1993) claim that pre-conditions to gain access to capital may vary among industries. All these factors associated with industry have an influence on financial choices of firms and their optimum capital structure (Bradley et al., 1984; Harris and Raviv, 1991; Kovenock and Phillips, 1995; Frank and Goyal, 2009; Morri and Cristanziani, 2009).

Many studies have stated harmful influence of such happenings on MSMEs. For instance, in 1999 earthquake in Turkey badly affected MSMEs with losses of almost $1.1 to 4.5 billion (Asgary et al., 2020). Likewise, in 2011 flood in Thailand influenced at least 557, 637 companies, together with almost 2.5M losses of jobs and 90 percent of these enterprises were Medium Small & Micro Enterprises (Auzzir et al., 2018). Similarly, because of extraordinary flooding by the end of 2014 in Malaysia, more than thirteen thousand Small & Medium Enterprises are influenced (Auzzir et al., 2018).

Moreover, Samantha (2018) observes that a tropical storm in May 2016 badly affect the western areas of Sri Lanka, which leads to an immense damage to society, the state-owned property and MSMEs. Several developed nations also suffer comparable disastrous impacts on MSMEs. For example, during Foot & Mouth Disease (FMD) epidemic, Small and Medium Enterprises in U.K experience massive losses, especially the non-agricultural losses are almost 5 billion pounds (Bennett and Phillipson, 2004).

Similarly, Pakistan also faces such type of crises affected by outside environmental disasters. For example, 2010 floods, influenced not just public and private properties but at the same time it affected the crops of almost $4.5 billion (World Trade Organization, 2019). Likewise, Pakistan experienced many comparable disasters in previous times such as climate change, earthquakes of 2005 & 2008, droughts in 1998 & 2004 etc (Ahmad and Ma, 2020; Hussain et al., 2020). Additionally, lately

in 2015, almost all the major types of natural catastrophes such as droughts, earthquakes, floods, heatwaves and cyclone are experienced by Pakistan that severely influenced many businesses (Hussain et al., 2020).

Based upon literature review there is an abundance of study which aims to tell the connection between capital structure and firm performance. Empirical results and arguments have turned into both directions. Some studies provide evidence that there is positive correlation between capital structure and firm performance, while the others disagree with it by saying that there is a negative effect on the firm's performance. There is a research which studies the connection between capital structure and financial performance by using 196 Romanian publicly listed companies on the Bucharest Stock Exchange. By using cross-sectional regression, results show that performance in firms are greater when they prevent debt, and they are operating at equity. During the times, when taxes as well as inflation are high, firms divest a portion of their assets decreasing their cost. This shows a risk-holding behavior of manufacturing firms. This shows a preference of debt when they find themselves in financial crises and then they experienced high-level business risks, or when they cannot resolve their debt due to shortage of money (Vătavu, 2015).

There is an empirical evidence which shows the influence of capital structure on firm performance. By employing multiple regression analysis, the results indicate that firm performance has a positive or a negative relation with the capital structure (Ebrati et al., 2013). There is a study which investigated the impact of capital structure on firm performance of financial sector of Indonesian Stock Exchange. By using panel data analysis, results of this research shows that the capital structure is negatively linked to the firm performance, which is evaluated by ROA, which is consistent with the Pecking-Order Theory. Capital structure has a negative influence on security firms, financing firms and other financial sub-sectors at the same time the capital structure has a positive impact on the banking sector and insurance sub-sectors (Saputra et al., 2015).

There is a study which investigates the effect of capital structure on firm performance of Listed firms on Karachi Stock Exchange. By applying Fixed Effect

Model, they found the findings. The results show that relationship exists between capital structure and firm performance (ROA ,ROS, ROE) but this relationship is mixed. Some shows positive relation, and some shows negative relation (Javed et al., 2014). There is a study that observe the effect of capital structure on corporate performance in Nigeria with a particular emphasis on the customer products firm sector of market. By using Multiple regression of ordinary least square (OLS) in the analysis technique, the results demonstrate negative as well as insignificant influence of capital structure on corporate performance of the customer products firm sector of Nigeria. Long-term debt to total asset ratio has a negative as well as insignificant influence on returns on assets (ROA) , while total debt to equity ratio also has a negative as well as the insignificant influence on returns on assets (Uremadu and Onyekachi, 2018).

2.2 Hypothesis of the Study

H1: Financial instability affects the capital structure of Listed firms of Pakistan.

H2: COVID-19 has significant effect on capital structure.

H3: COVID-19 affect is different across sectors.

H4: COVID-19 has significant effect on short-term debt to asset ratio.

H5: COVID-19 has significant effect on Long-term debt to asset ratio.

H6: COVID-19 has significant effect on total debt to asset ratio.

H7: COVID-19 has significant effect on size.

H8: COVID-19 has significant effect on profitability.

H9: COVID-19 has significant effect on tangibility.

H10: COVID-19 has significant effect on asset utilization.

H11: COVID-19 has significant effect on growth-opportunity.

Chapter 3

Research Methodology

3.1 Population and Sample of the study

The population of the study consists of firms Listed at Pakistan stock exchange. Quarterly data of sample firms have been taken for the period of 2014 to 2020. Firms are selected from different non-financial sectors. To take equal sample at least five firms are selected on the basis of market capitalization. The details of sectors are given in Appendix-A.

3.2 List of Variables

- **Short-term debt to asset ratio**

  It is measured by the dividing the short-term debt to the total assets.

  STD = Short-term debt / total assets

- **Long-term debt to asset ratio**

  It is measured by dividing the long-term debt to the total assets.

  LTD = Long-term debt / total assets

- **Total debt to assets ratio**

  It is measured by dividing the total-debt to total assets.

$$TD = \text{Total debt / total assets}$$

- **Size**

  It is measured by taking the log of total assets and it is included as control variable.

$$\text{Size} = \text{Log (Total assets)}$$

- **Tangibility**

  It is measured by dividing the fixed assets to total assets and it is included as control variable.

$$\text{Tangibility} = \text{Fixed asset / total assets}$$

- **Profitability**

  It is measured by dividing the Net income to total assets and it is included as control variable.

$$\text{Profitability} = \text{Net income / total assets}$$

- **Asset Utilization**

  It is measured by dividing the sales to total assets and it is included as control variable.

$$\text{Asset utilization} = \text{Sales / total assets}$$

- **Growth Opportunity**

  It is measured by taking the difference of current year sales and base year sales and then divided by base year sales and it is included as control variable.

$$\text{Growth opportunity} = St - St\text{-}1 \ / \ St\text{-}1$$

  Where, St is the current year sales and St-1 is the base year sales.

- **COVID-19**

  It is measured as a dummy variable representing 1 in those quarters when there was covid and representing 0 in those quarters when there was no covid.

3.3 Data Collection

For this study, secondary data is collected from annual reports that are available on the Pakistan Stock Exchange (PSX) website and these are also available on the company's website. The study selects 12 non-financial sectors and use data of five firms from each sector.

3.4 Methodology

3.4.1 Model

To study the dynamics of capital structures of firms since the COVID-19, this study estimates a simple empirical model connecting the capital structure of firms to time invariant unobserved characteristics, to observable characteristics, and to time dummies to capture the impact of the COVID-19 period and its outcome.

$$Y(capitalstructure)_{i,t} = \alpha \ + \beta Firm_controlsit + \mu_0 COVID - 19_t + \varepsilon_{i,t} \quad (3.1)$$

Where $Y_{i,t}$ is a dependent variable i.e. capital structure for the firm i during the year t. Firm_controlsit is an array of firm level control variables which are discussed previously (i.e., size, profitability, tangibility, asset utilization and growth opportunity). COVID-19 is a dummy indicator for the year when the COVID spread around the world. Our coefficient of interest is μ_0 since it captures the behavior of capital structure of firms throughout the COVID-19 and subsequently. $\varepsilon_{i,t}$ is the error term. To evaluate the model, GMM (Generalized model of moments) or dynamic panel regression model is used.

$$Y_{i,t} = \alpha + \beta Firm_controlsit + \mu_0 COVID - 19t + \quad (3.2)$$

$$\gamma_0 \sum industryi \times COVID - 19_t + \Upsilon_1 industry + \varepsilon_{i,t}$$

In the description (3.2), the impact of COVID-19 is captured by μ_0. Average impact on the firms is captured by $\mu_0 + \gamma_0$. Υ_1 industry tells us that is there any industry pattern of capital structure or not. $\gamma_0 \sum$ industry i $timesCOVID - 19_t$ tells us the impact of COVID-19 on industry.

3.4.2 Descriptive Statistics

The descriptive statistics capture the statistical behavior of the data. This study examines the impact of COVID-19 on the capital structure of Listed firms of Pakistan. 12 non-financial sectors are selected. Mean, median, mode, skewness, lowest and maximum data points are all descriptive statistics which are used to study the impact. Means shows the central tendency of data, measure of dispersion is measured by standard deviation, kurtosis describe the peakness and flatness of data. Skewness shows positive and negative values.

3.4.3 Panel Regression

This study uses panel data to explain the impact of COVID-19 on capital structure of Listed firms of non-financial sectors of Pakistan. Data is consisting of nine variables for each firm. There are few assumptions which are based on slope coefficient, intercept and error term to evaluate the Panel Regression Model.

3.4.3.1 Fixed Effect Model

In this model, slope coefficients are constant, but intercept vary from one industry to another industry. It presumes that in the series there may not be any temporarily effect, but study may contain a cross sectional effect.

Redundant Fixed Effect Model:

Redundant Fixed Effect Model explains between common effect model and fixed effect model. If cross-sectional F-stat and chi-square are < 0.05 then we will use Fixed Effect Model and if P-value is insignificant then we will use common effect model.

3.4.3.2 Random Effect Model

In this model, intercept is regarded as the error term, and it does not have anything to do with the sectors. This model helps us to explain variations among different companies. This model has different benefits.

- As compared to fixed effect model, it has few restrictions.
- It gives the comfort for an extra independent variable with same number of observations in a group.

Hausman Test: This test explains between Random and Fixed effect Model. If P-value is <0.05 then we will use Fixed Effect Model while, if P-value is insignificant then we will use Random Effect Model.

Chapter 4

Results and Discussion

This study explains the impact of COVID on short-term and long-term financing in companies Listed in various sectors. Panel data analysis has been conducted to study the impact of various fundamentals.

4.1 Descriptive Statistics

Table 4.1 represents the results of descriptive statistics of 12 non-financial sectors of Listed firms of Pakistan. It consists of mean. Mode, median, maximum, minimum, standard deviation, skewness and kurtosis. Mean is used to calculate the average of the data, standard deviation is used to describe the uncertainty or variation, minimum and maximum are used to find the asymmetry.

Table 4.1: Descriptive Statistics

	Mean	**Median**	**Max**	**Min**	**Std dev**	**Skewness**	**Kurtosis**	**Prob**
Stda	0.382	0.357	1.042	0.047	0.193	0.621	3.03	0.000
Ltda	0.122	0.086	3.099	0	0.141	7.793	146.01	0.000
tda	0.504	0.496	3.614	0.055	0.229	1.915	24.10	0.000
Size	7.399	7.395	8.959	6.025	0.594	0.035	2.69	0.023
Profitability	0.023	0.021	0.448	-0.121	0.028	2.749	38.36	0.000
Tangibility	0.367	0.338	0.923	0.001	0.21	0.372	2.34	0.000
Asset util	0.272	0.197	2.377	-0.547	0.251	2.747	14.57	0.000
Growth opp	0.207	0.068	118.159	-7.114	2.95	37.118	1477.50	0.000
COVID-19	0.096	0	1	0	0.294	2.747	8.55	0.000

Table 4.1 shows that the average value of short-term debt is 50.4% which indicates that 50% of total assets are financed b y debt. The average ratio of short-term debt and long-term debt is 38.2% and 12.2% respectively. These results show that sample firms utilized more short-term financing as compared to long-term financing for their operations. It could be due to absence of an established debt market because of covid.

The maximum value of tda is 361 and minimum value is 5.5. It means that firms used debt finance in their capital structure. The maximum value of stda is 1.042 and minimum value is 0.047. The maximum value of ltda is 3.099 and minimum value is 0. These results indicate that mostly firms utilized short term financing. This is due to that during this pandemic firms are utilized cheapest means of finance.

The average size of the firms during covid is 7.399.The maximum value of size is 8.959 and minimum value is 5.025. The profitability during covid is 2.3%. On average there are 50% days where profitability is more than 2.3% and in remaining days it is less than 2.3%. The maximum value of profitability is 0.448 and minimum value is -0.121. These results indicate that some firms get profit during covid-19 and some also face loss.

The average tangibility during covid is 36.7%. The maximum value of tangibility is 0.923 and minimum value is 0.001. It shows that mostly firms have tangible assets which they could use to get loan. The average asset utilization of the firms during covid is 27.2%.

The maximum value of asset utilization is 2.377 and minimum value is -0.547. It shows that some firms are efficiently use their assets and some firms are not efficient with each dollar of assets they have. The average growth opportunity for the firms during covid is 20.7%. The maximum value of growth opportunity is 118.159 and minimum value is -7.114. It shows that firms get less chances for growth opportunity. The average impact of covid on firms is 9.6%. The maximum value of covid is 1 and minimum value is 0. Value of 1 show that when there was an effect of covid and 0 shows when there was no effect of covid on businesses.

4.2 Impact of COVID on short-term financing

The Table 4.2 provides the results of Fixed Effects Model that has been estimated to analyze the impact of COVID-19 on capital structure of Listed Firms of Pakistan controlling the effect of firm's specific variables i.e. size, profitability, tangibility, asset utilization and growth opportunity. In this table the Fixed Effects Model tests the relationship between COVID-19 and Capital structure that is measured by STD (short-term debt).

TABLE 4.2: Panel Analysis (COVID-19 and Short Term Financing)

Variables	**Co-efficient**	**Std. Error**	**Prob**	**T-statistic**
C	-0.476	0.143	0	-3.34
Size	0.126	0.019	0	6.73
Profitability	-0.537	0.093	0	-5.803
Tangibility	-0.22	0.029	0	-7.547
Asset Utilization	0.075	0.018	0	4.119
Growth Opportunity	-0.000	0.001	0.908	-0.116
Covid-19	-0.01	0.007	0.156	-1.421
	Effect Specification			
R-squared	0.833	**Prob(F-statistic)**	0	
Adjusted R-squared	0.827	**Durbin-Watson**	0.564	
F-statistic	128.007			

Table 4.2 show that the constant value of co-efficient is -0.476 and its t-statistic is -3.340 and its p-value is 0.000 that is negative and significant. This indicates the probability of omitted variable.

Size has a co-efficient value of 0.126 and its t-statistic is 6.730. P-value of size is 0.000 which is positive and significant . It means that size has positive and significant relationship with short term debt. Results show that firm size has direct impact on short-term debt. If size is increased by 1% then short-term debt is increased by 0.126% during COVID-19.

Profitability has a co-efficient value of -0.537 and its t-statistic is -5.803, p-value of profitability is 0.000 that is negative and significant. It means that profitability has negative but significant relation with short term debt. The results show that if firms' profitability is increased then short-term debt is decreased by -0.537 units

during COVID-19. It means that pecking order theory is being followed here and they are using internal generating funds.

Tangibility has a co-efficient value of -0.220 and its t-statistic is -7.547. its p-value is 0.000 which is negative and significant. It means that there is negative but significant relationship between tangibility and short-term debt. The results show that the selection of type of firm's assets affect the capital structure i.e. short-term debt. We can also say that tangible asset can be used as a collateral on a loan. Banks required more security when they give loan so if tangibility is high then firms can get loan. Further, outside investors also prefer those firms that have assets which can be used as collateral. So, results show that tangibility is negatively related to capital structure because some micro and small firms have less assets that they could provide to banks for loan as collateral. These results are consistent with the previous results of (Rajan and Zingales, 1995; Wald, 1999; Booth et al., 2001; Kayo and Kimura, 2011).

Asset utilization has a co-efficient value of 0.0756 and its t-statistic is 4.119. Its p-value is 0.000 which is positive and significant. It means that there is a positive and significant relationship between asset utilization and short-term debt. This variable says that managers who have a high debt burden are forced to utilize the company's assets efficiently so that they can can pay interest payment and prevent bankruptcy costs. The result shows that it has direct impact on short-term debt. It means that companies' assets are efficiently used to pay interest payments and avoid bankruptcy cost etc.

Growth opportunity has a co-efficient value of -0.000 and its t-statistic is -0.116. The p-value of growth opportunity is 0.908 that is negative but insignificant. The result of this variable shows that it does not have any effect on short-term debt during COVID-19 period.

COVID-19 has a co-efficient value of -0.010 with t-statistic of -1.421. The p-value of COVID-19 is 0.1555 that is negative but insignificant. The results of COVID-19 shows that it does not have any impact on short term debt as p-value is negative and statistically insignificant. The Adjusted R-square value is 0.826. It means that 82.6% variation in short-term debt can be explained by these variables. Its

F-statistic value is 128.007 and its overall p-value is significant. It may be noted that the decision of Fixed Effect Model is taken based on Hausman test and F test.

TABLE 4.3: Model Diagnostic

Redundancy Fixed Effect			
Test Summary	**Chi-Square**	**D.F**	**Prob**
Cross-section F	110.5968	-591,667	0.00
Cross-section Chi-square	2759.2107	59	0.00
Hausman test			
Cross-section random	38.9302	6	0.00

The Table 4.3 presents model diagnostic to check whether common effect is more appropriate or fixed effect. The Redundancy Fixed Effect test is applied to make a decision between Common Effect Model and Fixed Effect Model. When the value of probability is < 0.05 then it means that we will apply Fixed Effect Model. Here, in this case the value of probability is less than 0.05 that is why Fixed Effect Model is chosen.

Similarly The Hausman test is applied to decide whether we should use Fixed Effect Model or Random Effect Model. Hausman fixed effect test for capital structure (short-term debt) of listed firms of Pakistan show p-value is < 0.05, then it means that it is significant which is indicating that Fixed Effect Model is appropriate.

4.3 Impact of COVID on Long-term Financing

The Table 4.4 presents the results of Random Effects Model that has been estimated to study the impact of COVID-19 on capital structure of Listed Firms of Pakistan controlling the effect of firm's specific variables i.e. size, profitability, tangibility, asset utilization and growth opportunity. In this table the Random Effects Model tests the relationship between COVID-19 and Capital structure that is measured by LTD (Long-term debt). It actually explains that the effect of

COVID on long-term financing of Listed non-financial firms of Pakistan is positive or negative.

TABLE 4.4: Panel Analysis (COVID-19 and Long term Financing)

Variables	**Co-efficient**	**Std. Error**	**Prob**	**t-statistic**
C	-0.169	0.101	0.095	-1.67
Size	0.026	0.013	0.051	1.953
Profitability	-0.242	0.11	0.027	-2.209
Tangibility	0.298	0.029	0	10.464
Asset Utilization	-0.023	0.02	0.256	-1.136
Growth Opportunity	0	0	0.745	0.326
Covid-19	0.006	0.008	0.507	0.664
	Effect specification			
R-squared	0.077	**Prob(F-statistic)**		0
Adjusted R-squared	0.074	**Durbin-Watson**		1.551
F-statistic	24.108			

Table 4.4 shows that the constant value of co-efficient is -0.169 and its t-statistic is -1.670 and its p-value is 0.095 that is negative and insignificant. Size has a co-efficient value of 0.026 and its t-statistic is 1.953, p-value of size is 0.051 which is positive and significant . It means that size has positive and significant relationship with long term debt. Results show that firm size has direct impact on long-term debt. If size is increased by 1% then long-term debt is increased by 0.026% during COVID-19.

Profitability has a co-efficient value of -0.242 and its t-statistic is -2.209. P-value of profitability is 0.027 that is negative and significant. It means that profitability has negative but significant relation with long term debt. The results show that if firms' profitability is increased then long-term debt is decreased by -0.242 units during COVID-19. It means that pecking order theory is being followed here and they are using internal generating funds.

Tangibility has a co-efficient value of 0.298 and its t-statistic is 10.464. Its p-value is 0.000 which is positive and significant. It means that there is positive and significant relationship between tangibility and long-term debt. The results show that the selection of type of firm's assets affect the capital structure i.e., long-term debt. We can also say that tangible asset can be used as collateral on a loan.

Banks required more security when they give loan so if tangibility is high then firms can get loan. Further, outside investors also prefer those firms that have assets which can be used as collateral. So, results shows that firms have tangible assets which they can used as collateral to get loan.

Asset utilization has a co-efficient value of -0.023 and its t-statistic is -1.136. Its p-value is 0.256 which is negative and insignificant. It means that there is a negative and insignificant relationship between asset utilization and long-term debt. This variable says that managers with a high debt burden are forced to use the company's assets efficiently so that they can pay interest payment and prevent bankruptcy costs. The result shows that it does not have any effect on long-term debt.

Growth opportunity has a co-efficient value of 0.000 and its t-statistic is 0.326. The p-value of growth opportunity is 0.745 that is positive but insignificant. The result of this variable shows that it does not have any effect on long-term debt during COVID-19 period. COVID-19 has a co-efficient value of 0.006 with t-statistic of 0.664. The p-value of COVID-19 is 0.507 that is positive but insignificant.

The results of COVID-19 shows that it does not have any effect on long term debt as p-value is positive but statistically insignificant. The Adjusted R-square value is 0.074. It means that 7.4% changes in long-term debt can be explained by these variables. Its F-statistic value is 24.108 and its overall p-value is significant.

The decision of Random Effect Model is taken based on Hausman test. The Table 4.5 report Hausman fixed effect test for capital structure (Long-term debt) of listed firms of Pakistan for the period of 2014-2020.

Table 4.5: Hausman test(COVID-19 and Long-term Financing)

Test Summary	**Chi-Square Statistic**	**Chi-Square d.f**	**Prob**
Cross-section random	3.2043	6	0.7828

The Hausman test is applied to decide whether we should use Fixed Effect Model or Random Effect Model.If P-value is greater than 0.05 or insignificant then we will apply Random Effect Model and if p-value is less than 0.05 or significant then we will apply Fixed Effect model. As p-value is greater than 0.05, so it means

that it is insignificant which is indicating that we will apply Correlated Random Effect Model (Hausman Test).

4.4 Impact of COVID on Total-Debt Financing

The Table 4.6 reports the results of Fixed Effects Model that has been estimated to study the impact of COVID-19 on capital structure of Listed Firms of Pakistan controlling the effect of firm's specific variables i.e., size, profitability, tangibility, asset utilization and growth opportunity. In this table the Fixed Effects Model tests the relationship between COVID-19 and Capital structure that is measured by TD (total debt). Table 4.6 shows that the constant value of co-efficient is -0.682 and its t-statistic is -3.380 and its p-value is 0.000 which is negative and significant.This indicates the probability of some omitted variables.

Size has a co-efficient value of 0.157 and its t-statistic is 5.946, p-value of size is 0.000 that is positive and significant . It means that size has positive and significant relationship with total debt. Results show that firm size has direct impact on total debt. If size is increased by 1% then total debt is increased by 0.157% during COVID-19.

Table 4.6: Panel Analysis (COVID-19 and Total Debt Financing

Variables	**Co-efficient**	**Std. Error**	**Prob**	**t-statistic**
C	-0.682	0.202	0	-3.38
Size	0.157	0.026	0	5.946
Profitability	-0.787	0.131	0.105	-6.006
Tangibility	0.067	0.041	0	1.62
Asset Utilization	0.055	0.026	0.033	2.129
Growth Opportunity	0	0	0.749	0.32
Covid-19	-0.007	0.01	0.484	-0.701
	Effect specification			
R-squared	0.762	**Prob(F-statistic)**		0
Adjusted R-squared	0.753	**Durbin-Watson**		1.353
F-statistic	82.018			

Profitability has a co-efficient value of -0.787 and its t-statistic is -6.006. P-value of profitability is 0.105 that is negative and insignificant. It means that profitability

has negative but insignificant relationship with total debt. The results show that there is no effect of profitability on total debt. Tangibility has a co-efficient value of 0.067 and its t-statistic is 1.620. Its p-value is 0.000 which is positive and significant. It means that there is positive and significant relationship between tangibility and total debt. The results show that the selection of type of firm's assets affect the capital structure i.e., total debt. We can also say that a tangible asset can be used as collateral on a loan. Banks required more security when they give loan so if tangibility is high then firms can get loan. Further, outside investors also prefer those firms that have assets which can be used as collateral. So, results show that firms have tangible assets which they could use as collateral to get loan.

Asset utilization has a co-efficient value of 0.055 and its t-statistic is 2.129. Its p-value is 0.033 which is positive and significant. It means that there is a positive and significant relation between asset utilization and total debt. This variable says that managers with a high debt burden are forced to use the company's assets efficiently so that they can pay interest payment and prevent bankruptcy costs. The shows that it has direct impact on total debt. It means that firms have assets which they can efficiently use to pay their payments. Growth opportunity has a co-efficient value of 0.000 and its t-statistic is 0.320. The p-value of growth opportunity is 0.749 that is positive but insignificant. The result shows that it does not have any effect on total debt during COVID-19 period.

COVID-19 has a co-efficient value of -0.007 with t-statistic of -0.701. The p-value of COVID-19 is 0.484 that is negative and insignificant. The results of COVID-19 shows that it does not have any impact on total debt as p-value is negative and statistically insignificant. The Adjusted R-square value is 0.753. It means that 75.3% variation in total debt can be explained by these variables. Its F-statistic value is 82.018 and its overall p-value is significant. The decision of appropriate model is taken based on Hausman test and F test presented in 4.7.

The Redundancy Fixed Effect test is applied to decide between Common Effect Model and Fixed Effect Model for capital structure (Total debt) presented in Table 4.7. If the value of probability is less than 0.05 then its mean that we will apply Fixed Effect Model. Here, in this case the value of probability is less than 0.05 that

Table 4.7: Model Diagnostic

Redundancy Fixed Effect			
Test Summary	**Chi-Square**	**D.F**	**Prob**
Cross-section F	67.2642	-591,667	0.00
Cross-section Chi-square	2110.9249	59	0.00
Hausman test			
Cross-section random	30.1911	6	0.00

is why we will apply Fixed Effect Model.The Hausman test is applied to decide whether we should use Fixed Effect Model or Random Effect Model. As p-value is less than 0.05, then its mean that it is significant which is indicating that we will apply Fixed Effect Model.

4.5 Industry Analysis of Impact of COVID on Debt Financing (Short-Term Debt)

The Table 4.8 presents the Least square dummy variables analysis that has been performed by using dummies for different sectors from PSX (Pakistan stock exchange) to study the effect of COVID-19 on their financing (Capital structure). In this table, the Model tests the effect of COVID-19 on short-term financing of different sectors whether during COVID-19 this effect is positive or negative on different sectors. It also shows that whether all the sectors are equally affected, or some sectors are more affected as compared to others.

Table 4.8 shows that the constant value of co-efficient is 0.374 and its t-statistic is 6.864 and its p-value is 0.000 that is positive and significant. Size has a co-efficient value of 0.002 and its t-statistic is 0.250, p-value of size is 0.803 which is positive but insignificant . It means that size does not have any effect on short-term debt during COVID-19. Profitability has a co-efficient value of -2.449 and its t-statistic is -15.576, p-value of profitability is 0.000 that is negative and significant. It means that profitability has negative but significant relationship with short term debt during COVID-19. The results indicate that if firms' profitability will be increased by 1 unit, then short-term debt will be decreased by -2.449 units. It

TABLE 4.8: Industry Analysis (COVID-19 and Short term Financing)

Variables	Coefficient	Std. Error	Prob	t-statistic
C	0.374	0.055	0	6.864
Size	0.002	0.007	0.803	0.25
Profitability	-2.449	0.157	0	-15.576
Tangibility	-0.052	0.023	0.02	-2.322
Asset Utilization	0.246	0.018	0	13.592
Growth Opportunity	0.001	0.001	0.386	0.866
Covid-19	0.045	0.047	0.332	0.97
Auto industry*Covid-19	0.151	0.066	0.022	2.292
Cement industry*Covid-19	-0.194	0.066	0.003	-2.95
Chemical industry*Covid-19	0.004	0.064	0.952	0.06
Paper industry*Covid-19	-0.156	0.066	0.017	-2.385
Power industry*Covid-19	0.036	0.066	0.582	0.551
Pharma industry*Covid-19	-0.102	0.066	0.119	-1.559
Fertilizers industry*Covid-19	0.032	0.064	0.614	0.504
Textile industry*Covid-19	0.027	0.065	0.679	0.414
Tech industry*Covid-19	-0.141	0.072	0.051	-1.952
OG industry*Covid-19	-0.059	0.067	0.38	-0.878
Sugar industry*Covid-19	-0.06	0.067	0.373	-0.89
		Effect Specification		
Adjusted R-squared	0.194	**Durbin-Watson stat**		0.31
F-statistic	25.569			

means that pecking order theory is being followed here and they are using internal generating funds. Tangibility has a co-efficient value of -0.052 and its t-statistic is -2.322. Its p-value is 0.020 which is negative and significant. It means that there is negative but significant relationship between tangibility and short-term debt.

The results show that the selection of type of firm's assets affect the capital structure i.e., short-term debt. We can also say that tangible asset can be used as collateral on a loan. Banks required more security when they give loan, so if tangibility is high then firms can get loan. Further, outside investors also prefer those firms that have assets which can be used as collateral. So, results show that tangibility is negatively related to capital structure because some micro and small firms have less assets that they could provide to banks for loan as collateral. These results are consistent with the previous results of (Rajan and Zingales, 1995; Wald, 1999; Booth et al., 2001; Kayo and Kimura, 2011).

Asset utilization has a co-efficient value of 0.246 and its t-statistic is 13.592. Its p-value is 0.000 which is positive and significant. It means that there is a positive and significant relationship between asset utilization and short-term debt. This variable says that managers with a high debt burden are forced to use the company's assets efficiently so that they can pay interest payment and prevent bankruptcy costs. The result shows that it has direct impact on short-term debt. It means that firms are efficiently using its assets to get revenue and pay their interest payments and bankruptcy costs etc.

Growth opportunity has a co-efficient value of 0.001 and its t-statistic is 0.866. The p-value of growth opportunity is 0.386 that is positive but insignificant. The result of this variable shows that it does not have any effect on short-term debt. COVID-19 has a co-efficient value of 0.045 with t-statistic of 0.970. the p-value of COVID-19 is 0.332 that is positive but insignificant. The results of COVID-19 shows that it does not have any impact on short term debt as p-value is negative and statistically insignificant.The Adjusted R-square value is 0.194. It means that 19.4% variation in short-term debt can be explained by these variables. Its F-statistic value is 25.569 and its overall p-value is significant.

The Auto industry has a co-efficient of 0.151 and its t-statistic is 2.292. Its P-value is 0.022 which is positive and significant. It means that during COVID-19 positive and significant relationship is shown between auto industry and short-term debt. Results show that during COVID-19 short-term financing of Auto industry is increased by 0.151 units. It shows that when there is a situation of fear then companies do not make long-term commitments, and they go for short-term financing. As in the current situation of covid we are meeting the current requirements and current requirements are that industry is facing some issues in selling the products and due to this there is no cash flow, but companies have to pay fixed cost for which they need some cash and for this cash they will go for short-term financing. Due to this situation government lower the interest rates so that businesses could be managed. As a result, debt financing has relatively increased due to specific conditions of this market. Market timings theory is being followed here.

The Cement industry has coefficient of -0.194 and its t-statistic is -2.950. Its P-value is 0.003 which is negative and significant. It means that during COVID-19, Cement industry and short-term debt show negative but significant relationship. Results show that during COVID-19 short-term financing of Cement Industry is decreased by -0.194 units. It means that cement industry pay its debt. As in this situation government lower the interest rates and construction industry get more benefit from it and increases their profit by doing construction which they use to pay their debt.

The Chemical industry has a co-efficient of 0.004 and its t-statistic is 0.060. Its P-value is 0.952 which is positive but insignificant. It means that during COVID-19 there is positive but insignificant relationship between Chemical industry and short-term debt. Results show that COVID-19 does not affect the short-term financing of Chemical industry.

The Paper industry has a co-efficient of -0.156 and its t-statistic is 2.385. Its P-value is 0.017 which is negative but significant. It means that during COVID-19, negative and significant relationship is shown between paper industry and short-term debt. Results show that during COVID-19 short-term financing of Paper industry is decreased by -0.156 units.

The power industry has a co-efficient of 0.036 and its t-statistic is 0.551. Its P-value is 0.582 which is positive but insignificant. It means that during COVID-19, power industry and short-term debt have positive but insignificant relationship . Results show that during COVID-19 short-term financing of Auto industry does not affect.The Pharma industry has a co-efficient of -0.102 and its t-statistic is -1.559. Its P-value is 0.119 which is negative and insignificant. It means that during COVID-19, there is negative and insignificant relation between pharmaceutical industry and short-term debt. Results show that during COVID-19 short-term financing of Pharma industry does not affect.

The Fertilizers industry has a co-efficient of 0.032 and its t-statistic is 0.504. Its P-value is 0.614which is positive but insignificant. It means that during COVID-19, positive and insignificant relationship is shown between fertilizers industry and short-term debt. Results show that during COVID-19 short-term financing

of Fertilizers industry does not affect. The Textile industry has a co-efficient of 0.027 and its t-statistic is 0.414. Its P-value is 0.679 which is positive but insignificant. It means that during COVID-19 there is positive and insignificant relationship between textile industry and short-term debt. Results show that during COVID-19 short-term financing of textile industry does not affect. The technology industry has a co-efficient of -0.141 and its t-statistic is -1.952. Its P-value is 0.051 which is negative and significant. It means that during COVID-19 technology industry and short-term debt have negative and significant relationship. Results show that during COVID-19 short-term financing of technology industry is decreased by- 0.141 units. It means companies pay their debt. As during Covid usage of technology was high due to which may be companies get profit which they use to pay the loan.

The Oil and Gas industry has a co-efficient of -0.059 and its t-statistic is -0.878. Its P-value is 0.380 which is negative and insignificant. Its means that during COVID-19 there is negative and insignificant relationship between Oil and Gas industry and short-term debt. Results in Table 4.9 show that during COVID-19 short-term financing of Oil and Gas industry does not affect. The Sugar industry has a co-efficient of -0.060 and its t-statistic is -0.890. Its P-value is 0.373 which is negative and insignificant. It means that during COVID-19 negative and insignificant relation is shown between Sugar industry and short-term debt. Results show that during COVID-19 short-term financing of Sugar industry does not affect. We can say that all sectors are not equally influenced by COVID-19. Some sectors have been affected by COVID-19 and some sectors are not affected.

4.6 Industry Analysis of Impact of COVID on Debt Financing (Long-Term Debt)

The Table 4.9 presents the Least square dummy variables analysis that has been conducted by using dummies for different sectors from PSX (Pakistan stock exchange) to investigate the effect of COVID-19 on their financing (Capital structure). In this table the Model tests the effect of COVID-19 on long-term financing

of different sectors whether during COVID-19 this effect is positive or negative on different sectors. It also shows that whether all the sectors are equally affected, or some sectors are more affected as compared to others.

TABLE 4.9: Industry Analysis (COVID-19 and Long Term Financing)

Variables	**Coefficient**	**Std. Error**	**Prob**	**t-statistic**
C	-0.139	0.038	0	-3.673
Size	0.022	0.005	0	4.259
Profitability	-0.204	0.109	0.0615	-1.871
Tangibility	0.309	0.016	0	19.746
Asset Utilization	-0.032	0.013	0.012	-2.521
Growth Opportunity	0	0.001	0.478	-0.71
Covid-19	0.014	0.032	0.657	0.444
Auto industry*Covid-19	-0.056	0.046	0.224	-1.218
Cement industry*Covid-19	-0.042	0.046	0.356	-0.924
Chemical industry*Covid-19	-0.013	0.045	0.766	-0.298
Paper industry*Covid-19	0.077	0.046	0.091	1.689
Power industry*Covid-19	-0.019	0.046	0.676	-0.419
Pharma industry*Covid-19	-0.027	0.046	0.55	-0.598
Fertilizers industry *Covid-19	0.009	0.044	0.837	0.206
Textile industry*Covid-19	0.01	0.045	0.818	0.23
Tech industry*Covid-19	-0.032	0.05	0.525	-0.636
OG industry*Covid-19	0.013	0.047	0.774	0.287
Sugar industry*Covid-19	-0.034	0.046	0.464	-0.732
	Effect Specification			
R-squared	0.277	**Prob(F-statistic)**		0
Adjusted R-squared	0.27	**Durbin-Watson**		1.06
F-statistic	38.641			

Table 4.9 shows that the constant value of co-efficient is -0.139 and its t-statistic is -3.673. Its p-value is 0.000 that is negative and significant.Size has a co-efficient value of 0.022 and its t-statistic is 4.259, p-value of size is 0.000 which is positive and significant . It means that size influences long-term debt during COVID-19.

Profitability has a co-efficient value of -0.204 and its t-statistic is -1.871. P-value of profitability is 0.0615 that is negative and insignificant. It means that profitability has negative and insignificant relationship with long term debt during COVID-19. The results show that firms' profitability does not have an impact on long term debt. Tangibility has a co-efficient value of 0.309 and its t-statistic is 19.746. Its p-value is 0.000 which is positive and significant. It means that tangibility and

long-term debt show positive and significant relationship. The results show that the selection of type of firm's assets affect the capital structure i.e., long-term debt. We can also say that tangible asset can be used as collateral on a loan. Banks required more security when they give loan, so if tangibility is high then firms can get loan.

Further, outside investors also prefer those firms that have assets which can be used as collateral. So, results show that companies have tangible assets which they can use as collateral to get loan.

Asset utilization has a co-efficient value of -0.032 and its t-statistic is -2.521. its p-value is 0.012 which is negative but significant. It means that asset utilization and long-term debt has a negative and significant relationship. This variable says that managers with a high debt burden are forced to use the company's assets efficiently so that they can pay interest payment and prevent bankruptcy costs. The result shows that it has direct impact on long-term debt.It means that companies are not efficiently using their asset to get revenue and pay their interest payments etc.

Growth opportunity has a co-efficient value of -0.000 and its t-statistic is -0.710. The p-value of growth opportunity is 0.478 that is negative and insignificant. The result shows that it does not have any effect on long-term debt. COVID-19 has a co-efficient value of 0.014 with t-statistic of 0.444. the p-value of COVID-19 is 0.657 that is positive but insignificant.

The results of COVID-19 shows that it does not have any effect on long term debt as p-value is negative and statistically insignificant. The Adjusted R-square value is 0.270. It means that 27% variation in long-term debt can be explained by these variables. Its F-statistic value is 38.641 and its overall p-value is significant. The Auto industry has a co-efficient of -0.056 and its t-statistic is -1.218. Its P-value is 0.224 which is negative and insignificant. It means that during COVID-19 auto industry and long-term debt show negative and insignificant relationship. Results show that during COVID-19 long-term financing of auto industry does not affect.

The Cement industry has coefficient of -0.042 and its t-statistic is -0.924. Its P-value is 0.356 which is negative and insignificant. Its mean that during COVID-19

there is negative and insignificant relationship between Cement industry and long-term debt. Results show that during COVID-19 long-term financing of Cement Industry does not affect.

The Chemical industry has a co-efficient of -0.013 and its t-statistic is -0.298. Its P-value is 0.766 which is negative and insignificant. It means that during COVID-19 negative and insignificant relationship is shown between Chemical industry and long-term debt. Results show that COVID-19 does not affect the short-term financing of Chemical industry.

The Paper industry has a co-efficient of 0.077 and its t-statistic is 1.689. Its P-value is 0.091 which is positive but insignificant. It means that during COVID-19 there is positive and insignificant relationship between paper industry and long-term debt. Results show that during COVID-19 long-term financing of Paper industry does not affect.

The power industry has a co-efficient of -0.019 and its t-statistic is -0.419. Its P-value is 0.676 which is negative and insignificant. It means that during COVID-19 power industry and long-term debt show negative and insignificant relationship. Results show that during COVID-19 long-term financing of Auto industry does not affect. The Pharma industry has a co-efficient of -0.027 and its t-statistic is -0.598 Its P-value is 0.550 which is negative and insignificant. It means that during COVID-19 negative and insignificant relationship is shown between pharma industry and long-term debt. Results show that during COVID-19 short-term financing of Pharma industry does not affect.

The Fertilizers industry has a co-efficient of 0.009 and its t-statistic is 0.206. Its P-value is 0.837 which is positive but insignificant. It means that during COVID-19, fertilizers industry and long-term debt have positive and insignificant relationship. Results show that during COVID-19 short-term financing of Fertilizers industry does not affect.The Textile industry has a co-efficient of 0.010 and its t-statistic is 0.230. Its P-value is 0.818 which is positive but insignificant. It means that during COVID-19 there is positive and insignificant relationship between textile industry and long-term debt. Results show that during COVID-19 short-term financing of textile industry does not affect.

The technology industry has a co-efficient of -0.032 and its t-statistic is -0.636. Its P-value is 0.525 which is negative and insignificant. It means that during COVID-19 negative and insignificant relationship is shown between technology industry and long-term debt. Results show that during COVID-19 long-term financing of technology industry does not affect.

The Oil and Gas industry has a co-efficient of 0.013 and its t-statistic is 0.287. Its P-value is 0.774 which is positive but insignificant. It means that during COVID-19 Oil & Gas industry and long-term debt show positive and insignificant relationship . Results show that during COVID-19 long-term financing of Oil and Gas industry does not affect.

The Sugar industry has a co-efficient of -0.034 and its t-statistic is -0.732. Its P-value is 0.464 which is negative and insignificant. It means that during COVID-19 Sugar industry and long-term debt show negative and insignificant relationship. Results show that during COVID-19 long-term financing of Sugar industry does not affect. For long-term financing, all sectors show insignificant results. This is because in a situation of fear companies do not go for long-term commitments as they prefer short-term financing to manage their operations.

4.7 Industry Analysis of Impact of COVID on Debt Financing (Total Debt)

The Table 4.10 presents the Least square dummy variables analysis that has been done by using dummies for different sectors from PSX (Pakistan stock exchange) to investigate the effect of COVID-19 on their financing (Capital structure). In this table the Model tests the effect of COVID-19 on Total debt i.e., short term and long-term financing of different sectors whether during COVID-19 this effect is positive or negative on different sectors. It shows that whether all the sectors are equally affected, or some sectors are more affected as compared to others. Table 4.10 shows that the constant value of co-efficient is 0.233 and its t-statistic is 3.624 and its p-value is 0.000 which is positive and significant.

Size has a co-efficient value of 0.024 and its t-statistic is 2.761. P-value of size is 0.006 that is positive and significant. It means that size effects the total debt during COVID-19. Profitability has a co-efficient value of -2.651 and its t-statistic is -14.304. P-value of profitability is 0.000 that is negative and significant. It means that profitability has negative but significant relationship with total debt during COVID-19.

The results show that if firms' profitability is increased by 1 unit, then total debt is decreased by -2.651 units. It means that pecking order theory is being followed here and they are using internal generating funds.

Table 4.10: Industry Analysis (COVID-19 and Total Debt Financing

Variables	**Coefficient**	**Std. Error**	**Prob**	**t-statistic**
C	0.233	0.064	0	3.624
Size	0.024	0.009	0.006	2.761
Profitability	-2.651	0.185	0	-14.304
Tangibility	0.255	0.027	0	9.62
Asset Utilization	0.214	0.021	0	10.026
Growth Opportunity	0	0.002	0.752	0.316
Covid-19	0.06	0.055	0.278	1.086
Auto industry*Covid-19	0.095	0.077	0.221	1.224
Cement industry*Covid-19	-0.236	0.078	0.002	-3.046
Chemical industry*Covid-19	-0.009	0.076	0.901	-0.125
Paper industry*Covid-19	-0.079	0.077	0.304	-1.028
Power industry*Covid-19	0.017	0.078	0.831	0.213
Pharma industry*Covid-19	-0.13	0.077	0.094	-1.676
Fertilizers industry*Covid-19	0.041	0.075	0.587	0.543
Textile industry*Covid-19	0.037	0.076	0.628	0.484
Tech industry*Covid-19	-0.172	0.085	0.042	-2.031
OG industry*Covid-19	-0.046	0.079	0.561	-0.581
Sugar industry*Covid-19	-0.113	0.079	0.153	-1.431
	Effect Specification			
R-squared	0.21	**Prob(F-statistic)**		0
Adjusted R-squared	0.202	**Durbin-Watson stat**		0.561
F-statistic	26.876			

Tangibility has a co-efficient value of 0.255 and its t-statistic is 9.620. Its p-value is 0.000 which is positive and significant. It means that tangibility and total debt have a positive and significant relationship.

The results show that the selection of type of firm's assets affect the capital structure i.e., total debt. We can also say that tangible asset can be used as collateral on a loan. Banks required more security when they give loan, so if tangibility is high then firms can get loan. Further, outside investors also prefer those firms that have assets which can be used as collateral. So, results show that firms have tangible assets which could be used as collateral to get loan.

Asset utilization has a co-efficient value of 0.214 and its t-statistic is 10.026. Its p-value is 0.000 that is positive and significant. It means that there is a positive and significant relationship between asset utilization and total debt. This variable says that managers with a high debt burden are forced to use the company's assets efficiently so that they can be able to pay interest payment and prevent bankruptcy costs. The result shows that it has direct impact on total debt. It means that firms are efficiently using their assets to get revenue or to pay their payment etc.

Growth opportunity has a co-efficient value of 0.000 and its t-statistic is 0.316. The p-value of growth opportunity is 0.752 that is positive but insignificant. The result shows that it does not have any effect on total debt. COVID-19 has a co-efficient value of 0.060 with t-statistic of 1.086. The p-value of COVID-19 is 0.278 that is positive but insignificant. The results of COVID-19 shows that it does not have any impact on total debt as p-value is positive but statistically insignificant.The Adjusted R-square value is 0.202 It means that 20.2% variation in total debt can be explained by these variables. Its F-statistic value is 26.876 and its overall p-value is significant.

The Auto industry has a co-efficient of 0.095 and its t-statistic is 1.224. Its P-value is 0.221 which is positive but insignificant. It means that during COVID-19 auto industry and total debt have a positive and insignificant relationship. Results show that during COVID-19 total debt of Auto industry does not affect. The Cement industry has coefficient of -0.236 and its t-statistic is -3.046. Its P-value is 0.002 which is negative and significant. It means that during COVID-19 there is negative and significant relations between Cement industry and total debt. Results show that during COVID-19 total debt of Cement Industry is decreased by -0.236 units. It means that cement industry pays its debt. As in this situation government lower

the interest rates and construction industry get more benefit from it and increases their profit by doing construction which they use to pay their debt.

The Chemical industry has a co-efficient of -0.009 and its t-statistic is -0.125. Its P-value is 0.901 which is negative and insignificant. It means that during COVID-19 there is negative and insignificant relation between Chemical industry and total debt. Results show that COVID-19 does not affect the total debt of Chemical industry.

The Paper industry has a co-efficient of -0.079 and its t-statistic is -1.028. Its P-value is 0.304 which is negative and insignificant. It means that during COVID-19 paper industry and total debt show negative and insignificant relationship. Results show that during COVID-19 total debt of Paper industry does not affect. The power industry has a co-efficient of 0.017 and its t-statistic is 0.213. Its P-value is 0.831 which is positive but insignificant. It means that during COVID-19 positive but insignificant relationship is shown between power industry and total debt. Results show that during COVID-19 total debt of Auto industry does not affect.

The Pharma industry has a co-efficient of -0.130 and its t-statistic is -1.676. Its P-value is 0.094 which is negative and insignificant. It means that during COVID-19 there is negative and insignificant relations between pharmaceutical industry and total debt. Results show that during COVID-19 total debt of Pharma industry does not affect.

The Fertilizers industry has a co-efficient of 0.041 and its t-statistic is 0.543. Its P-value is 0.587 which is positive but insignificant. It means that during COVID-19 there is positive and insignificant relationship between fertilizers industry and total debt. Results show that during COVID-19 total debt of Fertilizers industry does not affect.

The Textile industry has a co-efficient of 0.037 and its t-statistic is 0.484. Its P-value is 0.628 which is positive but insignificant. It means that during COVID-19 textile industry and total debt have a positive and insignificant relationship Results show that during COVID-19 total financing of textile industry does not affect. The

technology industry has a co-efficient of -0.172 and its t-statistic is -2.031. Its P-value is 0.042 which is negative but significant. It means that during COVID-19 negative and significant relationship is shown between technology industry and total debt. Results show that during COVID-19 total financing of technology industry is decreased by- 0.172 units. It means companies pay their debt. As during Covid usage of technology was high due to which may be companies get profit which they use to pay the loan.

The Oil and Gas industry has a co-efficient of -0.046 and its t-statistic is -0.581. Its P-value is 0.561 which is negative and insignificant. It means that during COVID-19 there is negative and insignificant relationship between Oil and Gas industry and total debt. Results show that during COVID-19 total financing of Oil and Gas industry does not affect.The Sugar industry has a co-efficient of -0.113 and its t-statistic is -1.431. Its P-value is 0.153 which is negative and insignificant. Its mean that during COVID-19 Sugar industry and total debt show negative and insignificant relationship. Results show that during COVID-19 total financing of Sugar industry does not affect. We can say that all sectors are not equally affected by COVID-19. Some sectors are affected by COVID-19 and some sectors are not affected.

Chapter 5

Conclusion

5.1 Conclusion

The main objective of this research is to examine the impact of COVID-19 on the capital structure of Listed firms of non-financial sector of Pakistan. Some firm specific variables are also used to check the performance of the firms whether during COVID-19 pandemic variations in the capital structure effect the performance of the firms or not. This empirical study consists of 12 non-financial sectors Listed on Pakistan Stock Exchange, and we select five firms from each sector for the period of 2014-2020. By using panel data analysis and least square dummy variable analysis we investigate the results.

The study finds that during COVID-19 short-term debt, long-term debt and total debt of the firms are not affected as value of COVID-19 is insignificant for all type of financing. But some other firm related factors influence the performance of the firms, like during this COVID due to increase in size firms' financing is increased which is consistent with the empirical part of the studies of Rajan and Zingales (1995); Titman and Wessels (1988) who concludes that size and leverage have a positive relation. In short-term debt and long-term debt profitability of the firms show negative and significant results but in total debt it shows negative and insignificant results which can be shown by the results of Ozkan (2001) who recommends that negative relationship is shown between profitability and leverage

which is explained by the pecking order theory. Tangibility of firms in short-term debt shows negative and significant results but in long-term debt and total debt this result is positive and significant. Asset utilization in case of short-term debt and total debt show significant results but in long-term debt this shows insignificant result. Growth opportunity shows insignificant results, which shows that there is no growth opportunity for firms during COVID-19 pandemic, which can be shown by the study of Baily and Elliott (2009) who propose that when that due to any decline in the economy, there is less growth or no growth for some quarters.

Least Square dummy variable analysis of different sectors show different results. During COVID-19 significant impact is find on short-term debt to assets ratio in Auto industry, cement industry, paper industry and technology industry, while chemical, fertilizers, sugar, oil & gas, textile, pharma, and power industries show insignificant effect. No significant result is found on long-term debt of any industry. Significant impact of COVID on total debt is observed in cement and technology industries. The other industries report insignificant impact of COVID on capital structure.

5.2 Policy Recommendations

Economy is the backbone of any country. Companies in any countries are the major contributors to strengthen the economy. Those factors that affect the performance of the company include capital structure decision whether firms should choose debt or equity, they should go for short-term debt or long-term debt. This decision is even more crucial during crises like COVID-19. Recently, the negative effect of COVID-19 pandemic on whole economy is severe, whereas control and prevention of this pandemic is at a critical stage.

As shown from the analysis, COVID-19 does not have a direct impact on the capital structure but during this pandemic capital structure decisions effect the performance of the firms positively or negatively. Some sectors are affected badly as compared to others. As this type of situation is also a form of risk. That's why

it should be a part of strategic planning and risk management. If such type of situation arises then it affects our structures. That's why a manager should device a mechanism to handle this situation. Managers should be aware of that if this situation continues for two more years then what would be the solution?

In addition to controlling and avoiding the spread of this pandemic, countries should progressively give support to the companies that are severely affected so that companies can run smoothly to bear this pandemic storm. Managers should give attention to their environment outside and inside the firm and make such strategies according to the changing environment. For investors, they should study markets and check the fluctuations of returns during COVID-19 pandemic and appropriately control the risks which is linked with their financial assets.

5.3 Future Directions

This research examines the impact of COVID-19 pandemic on capital structure of 12 non-financial sectors of Pakistan. Future research can concentrate on comparison of financial and non-financial sectors of Pakistan. Further research can be done on the comparison of listed and non-listed firms on Pakistan Stock Exchange. This study has only 3-4 quarters in which COVID-19 pandemic is found, this COVID-19 pandemic period can be further expanded in the future research.

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Appendix A

Appendix A-1: Sample Companies

SUGAR & ALLIED INDUSTRIES	TECHNOLOGY	AUTO ASSEMBLER	ENGINEERING
J. D. W. Sugar Mills Limited	PAK Datacom Limited	Indus Motor Company Ltd	International Steels Ltd.
Al-Abbas Sugar Mills Limited	Pakistan Telecommunication Co.	Atlas Honda Limited.	International Industries Ltd
Habib Sugar Mills Limited	HUM Network Limited	Gandhara industries Ltd	Crescent Steel & Allied Products Ltd
Chashma Sugar mills Limited	Avanceon Limited.	Honda Atlas Cars (Pak) Limited	Agha Steel Industries Ltd
The Premier Sugar Mills Ltd	NetSol Technologies Limited	Al-Ghazi Tractors Limited.	KSB Pumps Company Ltd

Appendix A-2: Sample Companies

CEMENT	FERTILIZERS	OIL & GAS	PAPER & BOARD
Lucky Cement Limited.	Engro Corporation Limited	Oil & Gas Development Company Ltd	Packages Limited
Bestway Cement Limited.	Fauji Fertilizer Co. Limited	Pakistan Petroleum Limited.	Century Paper & Board Mills
D. G. Khan Cement Co. Ltd	Engro Fertilizers Limited.	Attock Petroleum Limited	Security Papers Limited
Maple Leaf Cement Factory Ltd	Fatima Fertilizer Co Limited	Pakistan Oilfields Limited.	Cherat Packaging Limited.
Kohat Cement Co. Limited	Fauji Fertilizer Bin Qasim Ltd.	Shell Pakistan Limited	Merit Packaging Limited
PHARMACEUTICALS	**CHEMICAL**	**POWER GENERATION & DISTRIBUTION**	**TEXTILE COMPOSITE**
Abbott Laboratories Pak Lted	Agritech Limited	K-Electric Limited.	Gul Ahmed Textile mills
Glaxo SmithKline Pakistan Ltd	ICI Pakistan Limited.	Hub Power Company Limited	Azgard Nine Limited
The Searle Company Limited	Engro Polymer & Chemicals Ltd	Nishat power Limited	Nishat Mills Limited
Highnoon Laboraties limited	Archroma Pakistan Ltd	Kot Addu Power Company	Sapphire Textile Mills Ltd
Sanofi-Aventis Pakistan Limited	Lotte Chemical Pakistan Ltd	Altern Energy Limited	Kohinoor Textile Mills Ltd