The Impact of Global Financial Crisis on Capital Structure: Analyzing the Severity of Its Impact on Engineering SMEs in Pakistan?

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Abstract: The current study examines the impact of global financial crises on the capital structure of engineering small and medium enterprises in Pakistan. The study takes GDP as an indicator of financial crises and total debt to total asset ratio, long-term debt to total debt ratio and long-term debt to total asset ratio as indicators of capital structure. The study mainly focuses on panel data from 5 years by including pre and post-crisis periods. The sample size of the study is 20 engineering small and medium enterprises in Pakistan. The research uses inferential statistical techniques to extract results. The findings depict that the financial crises have an insignificant effect on the capital structure of engineering small and medium enterprises in Pakistan. Moreover, by analyzing the statistics, we see that debt financing is frequently decreasing in engineering small and medium enterprises in Pakistan after the occurrence of this financial crisis globally.

Keyword: Financial Crisis, Capital Structure, SMEs, Engineering, Inferential Statistics

1. Introduction

Historically the financial crisis in 2008 remained globally incurred and most alarming after the great depression of 1930s. Subsequently, so many of financial institutions collapsed, although some of them survived with the support of their respective nations (Reinhart and Rogoff, 2009). This financial collapse ultimately affected to international trade among the countries, which caused economic downturn globally. The financial crisis has been transmitted worldwide through international banks and financial markets. Consequently, these markets impacted the economies of many countries severely (Cetorelli & Goldberg, 2010). This crisis was a major drop-down in the economic activities of modern era globally. However, in 2009, many developed countries faced a deep recession. After the above major breakthrough, the Organization of Economic Co-operation and Development (OECD) estimated a shrink in trade volumes of about 15% in 2009 as compare to 2008 globally (Mckibbin, 2010)). According to Miller & Modigliani (1958) capital structure does not affect firm profitability. However, this statement supposes that if all the financial institutions are to be perfect and thus not consistent with real markets. After the M&M theory many scholars try to investigate the reasoning behind the decision of the combination of debt and equity, which reveals the choice of optimal capital structure of a firm that enables them to discover the various theories of capital structure. After the successful efforts they introduce the most debated theory of capital structure which is known as Trade-off theory. According to this theory firms value will also be affected by the cost of bankruptcy and the effect of tax. These all understandings lead towards the optimal capital structure. The financial crisis of 2008 which was incurred globally makes significant impact in firm capital structure which makes a significant impact on their values (Zarebski & Dimovski, 2012). Numerous studies indicate that the financial crisis of 2008 makes a severe effect on firm capital structure which affects the firms financing behavior in the

economic downturn (Harrison & Widjaja, 2013). This financial crisis mainly affects the firms those are highly levered due to the shortage of credit supply (Thakor, 2015).

This shortage of credit supply is due to the lack of confidence of banks in the non-financial firms which increases the shortage of supply in the debt market (Fosberg, 2012). During this financial crisis loans would be provided by borrowers up to 40% however the buyback of share falls immensely when this crisis is on peak (Mokhova & Zinecker, 2014). In the other hand the equity market is also suffer from the shortage of supply after analyzing the condition of bond markets (Kahle & Stulz, 2013). Hence raising investment for equity financing is consider to be the most challenging condition for firms (Mokhova & Zinecker, 2014). Several scholars also study about how the financial crisis of 2008 affects the factors of capital structure. They comparatively analyze the pre and post financial crisis and their impact on different factors of capital structure and come to know that there is no significant change in liquidity although there is a change in economic development, tax, inflation and tangibility during this both periods (Zhang & Mirza, 2015).

The term SMEs covers a wide range of definitions. Mostly it would be identified through the number of employees, sales, level of investment and overall net assets. Most commonly it is defined as a cut off of employees ranging from 0-250. Small and medium enterprises (SMEs) contributed in the development of economy and in the growth of country GDP. World bank primarily focus to provide funding to SMEs as it is the great way to foster the economy, reduce the poverty and in creation of employment which ultimately decreases the overall unemployment rate. Frequent globalization provides small and medium enterprises some huge opportunities to enhance their businesses but global financial crisis of 2008 hit economies of many countries of the world (Syed et al., 2012). The global financial crisis hits the banking sector which ultimately increases the constraint of external funding for medium enterprises. Although the large and listed firms are not facing much difficulties to finance their business as compare to the small and medium enterprises (Beck et al, 2008). During the financial crisis level of risk is on his peak and high uncertainty for getting returns with the frequent decrease in returns ultimately decreases the long term funding for SMEs as compare to the short term financing (Wright, 2012). In the other hand the mortgage assets loss their values and it is unclear that who owned would results to the credit crunch (Cowling et al, 2012). As the uncertainty and level of risk increases, firms those are unable to find themselves in a better way could dilute their business operations as they are unable to find financing for their businesses (Asli Demirguc-Kunt, 2019). Hence after five years of this financial downturn the behavior of banks towards the SMEs not recovered (Archibugi, 2011). This research traced the research gape making a sense that concept of financial crises is frequently paying a growing attention among the minds of scholars, business professional, managers and policy makers. The frequent change in the business environment perceived a growing attention for managers, entrepreneurs and financial analysts. The aim of the current study is to explore the impact of global financial crises on capital structure of engineering small and medium enterprises of Pakistan. Moreover, the research has intended to answer five research questions, which are, 1) How the global financial crises affect the combination of debt and equity of a firm? 2) Is there any significant impact on small and medium enterprises of Pakistan after global financial crises? 2) To identify the extent to which the global financial crises of 2008 affect the capital structure? 3) Is there any significant effect on capital structure due to the global financial crises? 4) To identify the extent to which the global financial crises of 2008 affect the small and medium enterprises of Pakistan? 5) To identify the extent to which the global financial crises affect the business of Pakistan? Meanwhile, this study provides an insight that how the global financial crisis would affect the combination of debt and equity of small and medium enterprises of Pakistan. The current study is beneficial for lenders, borrower, policy makers, financial analysts, entrepreneurs and managers. This study is also makes a useful contribution while making a decision of financing for SMEs. It gives an insight to the managers and entrepreneurs that how to run the business operation in financial downturn.

2. Literature Review

The global financial crises of 2008 put stock market under a huge panic which ultimately affects the financial markets and put them in the financial downturn (Reinhart & Rogoff, 2009). These financial crises are being in an action in the beginning of 2008 and put entire the liability market in a liquidity position (Brunnermeier, 2009). According to Kahle (2013) these financial crises created a drastic supply shortage in the market. Due to this drastic change, most of the financial institutions had collapsed. Although, among all some of them have been survived but after the huge support of their respective

nations (Rogoff, 2009). Consequently, the financial crises create a supply shock which puts a significant impact on firms financing decision and in particular on firm capital structure (Brunnermeier, 2009).

2.1 The Global Financial Crises

The global financial crises which were in an action in the beginning of 2008 put the entire liability market in an unfavorable and liquidity position (Brunnermeier, 2009). These financial crises have been started to develop from the advanced economies and also hit developing economies of the world. Nevertheless, the countries would be affected widely across the globe (Robert and James, 2012). These crises have their own consequences in the European as well as in Asian countries where banks and troubled mortgage providers has been rescued (Hodson, 2009 and Alter, 2012). In this uncertain financial condition, banks are requiring to raise additional equity in order to fulfill the Requirement of capital ratios but they are not able to raise the enough capital due to the lack of understanding among the banks which enables financial securities to increase the interbank lending rates which results in decrease of loan supply to non-financial institutions (Fosberg, 2012). As per the several studies, the financial crises of 2007-08 created a supply shortage in the equity markets which increases the cost of debt market that ultimately increases the challenge for high levered firms to raise additional equity for their business (Kahle & Stulz, 2013). Moreover, the financial crises result as a decrease demand for consumption and makes higher uncertainty of economic recovery which decreases the demand of goods and services and thus decreases the overall investment and increases the cash holding (Graham & Robert, 2015). Several studies identify that the reason of this crises is the change in the growth of 2007 and also in the projected growth of 2009. Although, many countries realize the impact in the economic activities prior to these crises would not justify the approach of the growth variability for the global crises (World Bank 2009). Moreover, some authors would indicate that the cause of these global financial crises is the default mortgages (PIA Connection, 2008). Another scholar suggests that the cause of this crises is the vertical specialization, internationalization of production and the cost of trade credit which results in decline in global investments. According to Patrick J. Keheo (2008) there are three main claims for the nature of financial crises which includes a consistent drop down in the bank lending to non-financial corporations and individuals, interbank lending is also invisible and there is a frequent decline in the issuance of commercial papers by non-financial institutions. The reason of these financial crises may vary but some researchers suggested the boom in the real market, default mortgages, securitization practices and poor regulation (Prasad & Panduranga, 2009).

2.2 Capital Structure

Every corporation must have their designated authority while selecting the optimal ratio of debt and equity which enhances overall value of the firm. If the decision regarding the capital structure goes wrong then it may lead the organization towards bankruptcy and financial downturn (Sheikh & Wang, 2011). Capital structure is the most debating topic among the scholars in the past few decades. Moreover, the decision regarding optimal structure of debt and equity may vary from industry to industry. Companies which have huge investment in their assets are mostly highly leveraged firm as compare to the companies which had lower investment in their assets and face lower fixed cost (Brigham & Houston, 2007). Consequently, the debt ratio of the companies may vary from industry to industry (Guney et al, 2012). According to Myers (2001), the study of capital structure deals with the financial securities opted by the corporation to finance their business. Hence, the decision regarding the optimal capital structure to maximize the overall value of the firm would be the crucial choice for managers. Consequently, it is a very rare case that the financial managers would agree on one best capital structure. Although, there is no theory which reveals the best choice of debt and equity financing but there are some theories which provided us a hint of financing with their own conditional restrictions. (William Mujis, 2015). Among them, the first is Irrelevancy theory. This theory is formulated by Miller and Modigliani in 1958. According to MM theory, capital structure has no effect on firm value but this assumption is only holds in the perfect market where there would be no taxes, no transaction cost and no bankruptcy. Hence, this is not possible of having a perfect capital market. After considering the fact, Miller and Modigliani added corporate taxes in their theory and then identify that the firm value is being increase with the increase in debt as debt provide tax shields to the corporation. Conclusively, Miller added that the use of debt financing is favorable as it provides tax shield whereas the use of equity financing is favorable when the tax treatment of Stock income favors the equity financing (Truong Hong Trinh and Nguyen Thao, 2015). In response to the Irrelevancy theory, Kraus and Litzenberger (1973) introduced Trade-off theory as the assumption of previous theory does not hold in the real world. This theory deals with the trade-off while making the decision that leads towards the chosen capital structure.

According to the theory, the market value of the corporation is not aligned with the capital structure of the firm (Miller & Modigliani, 1958). This theory includes some facts that the corporations who have intangible assets borrow less as compare to the corporation those have tangible assets in their business. According to Smith and Watts (1992), firms that are expected to get high profit in their future investments would borrow less today. Subsequently, another theory was introduced named as Agency theory. According to this theory, the separation of owners and managements would increase the agency cost which ultimately creates a conflict among managers and owners/stakeholders of the business. According to Jensen (1986), having a huge amount of cash would increase the manager's involvement to reinvest the cash and ultimately going toward their own benefits which increases the variation in objectives among owners and managers of the business. In order to eradicate this issues, a firm showed go towards a debt financing even in the availability of equity financing. Moreover, Grossman (1988) suggest that using short term debt financing may decrease the conflict between managers and owners by eradicating the cause of under investment which ultimately increase the benefits of managers and owners.

2.3 Financial Crises and Capital Structure

The above data of literature is dominated by the theories of capital structure. Moreover, to identify the clear picture researchers are going to identify the impact of global financial crises on corporate capital structure. Most of the researchers have identified that global financial crises make a severe impact on capital structure but it varies from region to region (Rami & Akram, 2016). According to Fosberg (2012), the main outcome of the global financial crises is the decrease of loans provided by banks to non-financial corporations or it will be provided in the unfavorable rates which creates a supply shock in the debt market. Firms faced drastic problems in financing their business during these global financial crises (Ivashina, 2008). This situation is arising due to lack of confidence of banks towards the non-financial corporation which ultimately increases the rate of bank loans and decrease the supply of debt market (Forberg, 2012). During the financial crises period, corporations were facing a severe problem while financing their projects (Scharfstein, 2008). The first is liquidity crises which ultimately decrease the supply of their credit in the market (Cornett et al., 2011). Subsequently, investment was almost rare which also decrease the demand for external financing which ultimately decreases the leverage ratios during these global financial crises (Mokhova and Zinecker, 2014). Another scholar identifies that the main thing which hits the corporate investments is the negative supply shock (Duchin et al., 2010). On the other hand, equity market is also suffered to raising capital for the corporation because it was quite costly during this period and due to wealth transfer from shareholders to bondholders (Kashyap et al, 2008; Myers, 1997). According to Iqbal & Kume (2013), leverage ratio decreases in the financial crisis but return back after the pre-crises. Furthermore, they identify that the corporations that have low leverage will borrow more debt and the corporations those are highly leverage will borrow less. Moreover, during the financial crises the usage of debt financing is consequently increases as identified by several authors which will be decreases after the financial crises (Fosberg, 2012; Kahle & Stulz., 2013). Numerous scholars tend to identify the availability of investment for the capital structure and come to the conclusion that investment condition had a severe impact on a firm leverage. Since in the financial crises lending becomes quite expensive and the overall riskiness of the firms increases drastically (Vithessonthia & Tonguraib, 2015). Moreover, the several theorists suggest that the financial will affects the capital structure of the firm in many aspects as the riskiness and uncertainty increases drastically and the overall expected return decreases during the financial crises which make both lenders and borrowers restrict while investing in long term opportunities (Gurkaynak & Wright 2012). According to Kahle (2013) these financial crises created a drastic supply shortage in the market. Many theories suggest that financial crises would make an effect on the capital structure of the firms in several aspects. During the global financial crises, the overall risk is high and the expected returns would shrink drastically so both lenders and borrowers are looking to invest their capital in long term assets.

2.4 Variables & Hypotheses

In this research we are working on three main variables which include the ratio of total debt to total assets (TDTA), the ratio of long term debt to total assets (LTDTA) and the ratio of long term debt to total debt (LDTTD). Moreover, the first two TDTA and LTDTA identify the extent to which the firm finances its assets including the debt and long term debt and the last variable LTDTA identify the maturity of debt. In order to identify the firm capital structure during the financial crises we estimate the model linking firm capital structure to observable characteristics including time invariant and time dummies in order identify the impact of financial crises period and its aftermath.

$$Yit = \alpha + \beta Firm\_controlsit + \mu\ 0Crisis0809\ t + \mu\ 1Crisis1011\ t + Ji + \varepsilon it$$

Whereas in the above equation Yit indicates the total debt to total assets, long term debt to total assets and long term to total debt i denotes the firm and t denotes the time period of the data. Firm_control is the set of variables which includes the ratio of fixed assets to total assets, the ratio of sales to assets, return over assets and the total assets. Moreover, Crises0809 is the variable which identify the period before the financial crises and Crises1011 identify the period of after the spread of financial crises. Ji is identifies the firm fixed effect and εit shows the residual firm level. Moreover, μ 0 and μ 1 is our major interest as it shows the firms behavior of capital structure during the financial crises.

Hypotheses

H1: Financial Crises has a positive effect on TADA ratio of E(SMEs).
H2: Financial Crises has a negative effect on TADA ratio of E(SMEs).
H3: Financial Crises has a positive effect on long term debt to total asset ratio of E(SMEs).
H4: Financial Crises has a negative effect on long term debt to total asset ratio of E(SMEs).
H5: Financial Crises has a positive effect on long term debt to total debt ratio of E(SMEs).
H6: Financial Crises has a negative effect on long term debt to total debt ratio of E(SMEs).

3. Method

The current study is based on one believe which is objective. The topic of this research is deductive and quantitative in nature thus it requires the explanation of the impact of Global Financial Crises on Capital Structure. The current study has the sample size of 20 firms. Although we selected the firms those have 5 years of consecutive analysis of before and after the crises. Secondary data is collected annually to analyze the impact of Global Financial Crises through the main sources and different websites like MUFAP, Business recorder, Bloomberg, Karachi stock exchange (KSE) and annual reports of small and medium enterprises (SMEs) particularly focusing on Engineering SMEs. The data is collected from 2006-2010 in total of 5 years in order to analyze the impact of Global Financial Crises on Firms Capital Structure.

4. Results

Table 1 (See Appendix-A) shows us the mean values of our sample data of all observations which is 100. The mean value of our independent variable GDP data is 0.03374. Furthermore, the mean values of our dependent variable of TDTA, LTDTA and LTDTD are 0.5477, 0.2222 and 0.2807 respectively. If we look to table 3 (See Appendix-A) then we can see the mean values of Pre financial crises including the year of 2006 and 2007 which is in total 40 observations. The mean value of independent variable GDP of these 40 observations are 0.0536. Furthermore, the mean values of our dependent variable of TDTA, LTDTA and LTDTD of these 40 observations are 0.5571, 0.2417 and 0.3029 respectively. If we compare this mean values of pre financial crises with all the observations, then we can identify that the mean value of all the variables before the financial crises is slightly better as compare to all the observation which states that these crises makes an impact on the determinants of capital structure. In order to get the clear evidence, we are going to compare the mean values of Pre Financial Crises including the period of 2006 and 2007 with the mean values of Post Financial Crises including the period of 2009 and 2010. In table 5 (See Appendix-A) we can see the mean values of Post financial crises including the period of 2009 and 2010. The mean value of our independent variable GDP during this time frame are 0.0222. Furthermore, the mean value dependent variables of TDTA, LTDTA and LTDTD are 0.5306, 0.2025 and 0.2566 respectively. By comparing the mean values of Pre and Post financial crises then we examine that the average values of the determinants of capital structure is slightly better in Pre financial Crises as compare to the Post Financial Crises. The average of GDP in 5 (See Appendix-A) years is 3.37% and in the period of before the crises is 5.36% and after the crises are 2.22%. GDP has dramatically decreases up to 3.15% after the occurrence of global financial crises of 2008. If we discuss about our independent variables, then our total debt to total asset (TDTA) is 54.77% in these 5 years and it is 55.71% before the crises and 53.06% after the crises. There is no major change has been developed in the TDTA ratio but yes it is also decreases around 1.5% after the occurrence of global financial crises. As far as long term debt total asset ratio is concerned it is 22.22% in these 5 years and 24.17% before the crises and 20.25% after the crises. It shows a major decrease of around 4% after the occurrence of financial crises globally. In the other hand long term debt to total debt ratio is 28.07% in

these 5 years of observations and it is 30.29% before the crises is incurred and 25.66% after the financial crises. It depicts that long term debt to total debt ratio also shows major change and it decrease around 5% after the financial crises. Furthermore, for clear indication of the impact of financial crises on capital structure graph 7 gives a clear idea about the mean deviation in this time frame of 5 years. In order to indemnify the results, we use least square method to examine the pre and post financial crises on capital structure by making an equation.

$Yit = \alpha + \beta Firm\_controlsit + \mu\ 0Crisis67\ t + \mu\ 1Crisis910\ t$

Here in the above equation Y denotes the ratio of total debt to total asset, ratio of long term debt to total asset and the ratio of long term debt to total debt. Furthermore, i is a sign of firm indication and t stands for time. Firm_control is accounted for our independent variable GDP and Crises67 is the period before the financial crises and Crises910 is the period after the financial crises. By analyzing table 2, 3 and 4 we are able to identify that the results are insignificant as the p value is greater than 0.05 and it is around 0.8. Moreover, we have seen a weak positive relation between GDP and total debt to total asset ratio in table 2 (See Appendix-A). As far as the table 3 (See Appendix-A) is concerned it shows a mediate positive impact of GDP in long term debt to total debt. In table 4 (See Appendix-A) we are able to see the mediate positive impact of GDP in total debt to total asset ratio. Furthermore, if we discuss about the Pre financial crises including the year 2006 and 2007 so table 6 dictates us a weak positive impact of GDP in total debt to total asset. While table 7 (See Appendix-A) shows a weak negative impact of GDP in long term debt to total debt and table 8 shows us weak positive impact of GPD in total debt to total assets. In table 10 of Post financial crises including the year 2009 and 2010 we have seen a weak positive impact of GDP in total debt to total assets ratio. In table 11 (See Appendix-A) we identify a weak positive impact of GPD in long term debt to total assets. Furthermore, in table 12 we identify a weak positive impact of GDP in total debt to total assets ratio.

5. Discussion

The finding of the current results dictates that financial crises does not any major impact in small and medium enterprises of Pakistan. As these financial crises starts from US and from its banking sector so the investor those are heavily invested their funds in US gets impacted by the mortgage crises more significantly. Furthermore, the descriptive of the results dictate that there is an impact of these financial crises in small and medium enterprises of Pakistan as the long term debt to total debt ratio is going in the declining phase before these mortgage crises. Moreover, the analysis shows that the results are insignificant as the p-value of all the independent variables is less than 0.05 or 5% which clearly depicts the insignificancy of the results. We examined the impact of financial crises of 2008 on capital structure of small and medium enterprises of Pakistan and reveals insignificant relationship between them. The current study gets the similar results in to some extent as it gets in the previous one that the global financial crises has a negative on small and medium enterprises on Pakistan. Moreover, there are certain difference between both the studies, the current paper gets insignificant results and the other study gets the significant evidence of the effect of global financial crises on small and medium enterprises of Pakistan (Syed et al., 2012). This study also examine a declining phase in debt financing in the post financial crisis including the period of 2009 and 2010 and these finding correlate with the analysis done in Portuguese SMEs (Proençaa, 2014). Similarly, another study depicts that they have seen no severe changes in the determinants of capital structure during the economic downturn. Furthermore, these economic would certainly decreases the leverage ratio of the firms which actually correlate with the findings done in the paper as the current study also examine the declining phase in debt ratio during the global financial in the results (Balios et al., 2016)

6. Conclusion

In the light of global financial crises which makes a significant impact on every part around the globe increases the concerns for financing the business of small and medium enterprises which ultimately creates a hinder for firms to finance their businesses. This phenomenon ultimately decreases the jobs in the market due to the uncertain business condition and unavailability of funds to finance their business. This study reveals some opportunities related to globalization and economic recession of the business growth of small and medium enterprises of Pakistan. The financial crises of 2008 makes a negative impact in the growth and even in the survival of small and medium enterprises of Pakistan (Syed et al.,

2012). The current research paper investigates the phenomenon of financing the business for firms and more particularly for small and medium enterprises during the global financial crises of 2008 and its immediate effect on the nature of engineering SMEs to finance their businesses in the period of 2010 and 2011. The finding depicts that there is an insignificant negative impact of global financial crises in small and medium enterprises as compare to the giant firms due to the lack of access of capital market financing to SMEs (Asli Demirguc-Kunt, 2019). The results depict that the small and medium enterprises have a major negative of financial crises on their capital and growth pattern as compare to that large firms as the giant firms has more opportunities for raising funds to finance their business and they are more diversified. Furthermore, there is less likelihood that these large listed firms go for bankruptcy. So in particular for creditors it is less risky to give loans to that firms those have less likelihood for bankruptcy as compare to the small and medium enterprises. In the current research paper, we further want to investigate that how the different factors of capital structure effect the small and medium enterprises leverage in different ways during and after the global financial crises. In order to investigate that we apply our model in 20 engineering SMEs operating in Pakistan and their data of before and after crises including 2006-10 (Balios et al., 2016).

In order to examine the pre and post impact of global financial crises of 2008 on the determinants of capital structure of small and medium enterprises of Pakistan we use panel data of 5 years ragging from 2006-10. Our finding reveals that there is an insignificant impact of global financial crises in the capital of small and medium enterprises of Pakistan which will be seen when we identify that there is certain decrease in total debt to total asset ratio in 2010 and in the mid of 2009 as compare to the past three years including 2006, 2007 and 2008 respectively which also reveals that these financial crises makes negative impact on total debt ratio of small and medium enterprises which we will clearly identifies after analyzing our results. Furthermore, after the analyses we also reveal that there is also a certain change in the long term debt of small and medium enterprises after the financial crises of 2008. Results also dictates that long term debt of SMEs is significantly decreases in 2010 as compare to the previous year states that the global financial crises of 2008 has a negative impact on long term debt of small and medium enterprises of Pakistan. Our finding also indicates that the long term debt to total assets ratio of small and medium enterprises is also been decreases after the global financial crises of 2008. Analyses dictates that the value of long term to total asset ratio is decreased in 2009 and also in 2010 as compare to the past years. After the global financial crises of 2008 the firms relying more towards equity financing rather than the debt financing or if they financing their business with debt then the results dictates that they are consecutively relying more on short term financing rather than the long term debt.

7. Implications, Limitations and Recommendations

The research paper contributes theoretical models in many ways such as the previous literature suggest that some organization use their managerial knowledge and experience to counterfeit Global Financial Crisis and make well-informed decision on its major operations. The theoretical implication is corresponding with the literature conducted by (Wambua, 2014). Secondly, the results contribute to the Pecking Order Theory (POT) as the small and medium enterprise of Pakistan lesser rely on external debt financing to finance major projects while having equity financing in hand. Nevertheless, banking institutions makes more restriction in lending finances with long term debt during the financial downturn so, companies left no stone unturned to finance operations. In addition, most of the research on GFC has been done in different sectors of the world as severe impact was found such as financial institutions. No study has taken engineering SMEs into account within the ground context of Pakistan. Specifically, the paper contributes to the application of any severe impact on the firm performance in these ways: such as this paper take contingency factor of GDP as a proxy of measuring the world biggest global financial crisis into account. The study has some political implications for government, financial investors within the stock market of Pakistan and financial analyst during pre-crisis and post-crisis to take informed investment decisions. Governments may take some political measure to turn away from the crisis while boosting its economy through accelerating export and Consumer Confidence Index. Government could make such legalities to protect country SMEs and provide better financing mediums (He & Ausloos, 2014). As for the firm financial analyst, they can improve corporate structure during these calamities such as pushing key stakeholders to investment in measuring their investment to key financial performance indicators such as price to earnings ratio to measure investor confidence to price growth in future. During a post financial crisis, firm must measure debt to equity ratio, long term debt to equity

ratio with other means or models to measure the impact on firm performance (Lee & Chen, 2016). However, this paper contributes to the economic growth for both Pakistan and other countries as the small and medium enterprise sector is the backbone for any country's economy and mostly has employment generated strength because in formalization in this sector is very high. An interesting future research could be done to strengthen the current study with taken more key variable into account such as firm size, non-debt tax shield, tangibility, and earning per share and compare these in advance and most emerging market as it will measure the competitiveness of the firm for taking external funding before and after the financial crisis (Yazdanfar et al., 2019). The study conducted on small and medium enterprise sector of Pakistan so, it would be beneficial to conduct the research on the impact of global financial crisis on the similar sectors but official one. Furthermore, same research can be conducted but with more focus on qualitative study in measuring performance.

Considering the study limitations, Firstly the current study is only examined only one situational factor which is global financial that leads to the change in capital structure of SMEs in Pakistan. Furthermore, there are also some other factors as well which may also contribute to the change in capital structure which is lower utilization of assets and may be change in the market trend. Second the sample size of the current research study is only included 20 SMEs which is considered as quite small. So the future research may be conducted with the large sample relative to this sample in order to increase the accuracy of the result. Third the current study is only covered SMEs of Pakistan. So it is not applicable to the other major sectors of Pakistan. Furthermore, future research may also be conducted in other sectors of the country. Fourth the current study is based on analyzing the panel data of 5 years including 2006-10. Furthermore, in future research the panel data may increases from 5 years to may be 7 years which can make a clear idea regarding the impact of global financial crises on capital structure. Fifth the current study is only considered the determinants of capital structure to examine the impact of global financial crises. Furthermore, there may be some other determinants as well which can also identify the impact of global financial crises which includes the size of the firm, growth of firm and its total market capitalization.

This study has also some crucial recommendations, the findings of this research is beneficial for financial institutions and governments in order to tackle the uneven financial conditions. This study is also beneficial for key investors and business professionals in order to project the financing portfolios. These Global Financial hits the major part of banking sector around the globe so the current study is also beneficial for banking officials and managers in order to formulate the lending and borrowing policies and procedures. This study is also beneficial for finance working professionals to identify appropriate portfolio of funding the businesses. This study also provides an insight to many giant firms to operate in any kind of financial crises or economic downturn. The study also enables firms to identify that how to avoid the bankruptcy in an uncertain market condition. Furthermore, future research may also cover the other sectors including the health, textile and manufacturing sector regarding the impact of these global financial crises. In order to the get the accuracy in results further research may be conducted with the big sample size. In order to see the impact more accurately future research may be conducted by considering the data of 10 years of before and after the global financial crises.

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Appendix-A

Table 1
Summary Statistics of All Observations

	GDP	LTDTA	LTDTD	TDTA
Mean	0.033740	0.222240	0.280780	0.547740
Median	0.028300	0.222500	0.284900	0.555800
Maximum	0.059000	0.244900	0.303300	0.562900
Minimum	0.016100	0.197900	0.250100	0.517600
Std. Dev.	0.019177	0.020019	0.023716	0.018280
Skewness	0.351263	-0.060165	-0.265435	-1.013602
Kurtosis	1.451717	1.438166	1.446007	2.508594
Jarque-Bera	0.602234	0.511209	0.561816	0.906466

Probability	0.739991	0.774448	0.755098	0.635570
Sum	0.168700	1.111200	1.403900	2.738700
Sum Sq. Dev.	0.001471	0.001603	0.002250	0.001337
Observations	5	5	5	5

Table 2

Dependent Variable: TDTA
Method: Least Squares
Date: 12/31/20 Time: 20:54
Sample: 2006 2010
Included observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	0.469733	0.478888	0.980883	0.3990
C	0.531891	0.018126	29.34450	0.0001

R-squared	0.242832	Mean dependent var	0.547740
Adjusted R-squared	-0.009557	S.D. dependent var	0.018280
S.E. of regression	0.018367	Akaike info criterion	-4.867303
Sum squared resid	0.001012	Schwarz criterion	-5.023528
Log likelihood	14.16826	Hannan-Quinn criter.	-5.286595
F-statistic	0.962132	Durbin-Watson stat	1.477199
Prob(F-statistic)	0.398983		

Table 3

Dependent Variable: LTDTD
Method: Least Squares
Date: 12/31/20 Time: 20:55
Sample: 2006 2010
Included observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	0.982252	0.433787	2.264365	0.1085
C	0.247639	0.016419	15.08273	0.0006

R-squared	0.630876	Mean dependent var	0.280780
Adjusted R-squared	0.507835	S.D. dependent var	0.023716
S.E. of regression	0.016638	Akaike info criterion	-5.065129
Sum squared resid	0.000830	Schwarz criterion	-5.221354
Log likelihood	14.66282	Hannan-Quinn criter.	-5.484421
F-statistic	5.127350	Durbin-Watson stat	1.642178
Prob(F-statistic)	0.108488		

Table 4

Dependent Variable: LTDTA
Method: Least Squares
Date: 12/31/20 Time: 20:56
Sample: 2006 2010
Included observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	0.896550	0.308745	2.903855	0.0623
C	0.191990	0.011686	16.42924	0.0005

R-squared	0.737587	Mean dependent var	0.222240
Adjusted R-squared	0.650116	S.D. dependent var	0.020019
S.E. of regression	0.011842	Akaike info criterion	-5.745206

Sum squared resid	0.000421	Schwarz criterion	-5.901431
Log likelihood	16.36302	Hannan-Quinn criter.	-6.164498
F-statistic	8.432372	Durbin-Watson stat	1.905595
Prob(F-statistic)	0.062307		

Table 5

Summary Statistics of Pre Financial Crises				
	LTDTD	**LTDTA**	**GDP**	**TDTA**
Mean	0.302904	0.241796	0.053650	0.557169
Median	0.250650	0.199850	0.053650	0.584350
Maximum	0.903100	1.000000	0.059000	0.965000
Minimum	0.000000	0.000000	0.048300	0.018320
Std. Dev.	0.250053	0.246566	0.005418	0.257246
Skewness	0.492934	1.601156	7.00E-16	-0.596394
Kurtosis	2.224375	5.467095	1.000000	2.495647
Jarque-Bera	2.622552	27.23559	6.666667	2.795195
Probability	0.269476	0.000001	0.035674	0.247190
Sum	12.11615	9.671822	2.146000	22.28677
Sum Sq. Dev.	2.438535	2.370992	0.001145	2.580840
Observations	40	40	40	40

Table 6

Dependent Variable: TDTA
Method: Least Squares
Date: 12/31/20 Time: 20:45
Sample: 1 40
Included observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	0.260140	7.701910	0.033776	0.9732
C	0.543213	0.415257	1.308137	0.1987

R-squared	0.000030	Mean dependent var	0.557169
Adjusted R-squared	-0.026285	S.D. dependent var	0.257246
S.E. of regression	0.260605	Akaike info criterion	0.197082
Sum squared resid	2.580762	Schwarz criterion	0.281526
Log likelihood	-1.941649	Hannan-Quinn criter.	0.227615
F-statistic	0.001141	Durbin-Watson stat	1.501859
Prob(F-statistic)	0.973233		

Table 7

Dependent Variable: LTDTD
Method: Least Squares
Date: 12/31/20 Time: 20:44
Sample: 1 40
Included observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	-0.083318	7.486661	-0.011129	0.9912
C	0.307374	0.403652	0.761483	0.4511

R-squared	0.000003	Mean dependent var	0.302904
Adjusted R-squared	-0.026312	S.D. dependent var	0.250053
S.E. of regression	0.253321	Akaike info criterion	0.140392
Sum squared resid	2.438527	Schwarz criterion	0.224836
Log likelihood	-0.807833	Hannan-Quinn criter.	0.170924
F-statistic	0.000124	Durbin-Watson stat	1.529341

Prob(F-statistic)	0.991179			

Table 8

Dependent Variable: LTDTA
Method: Least Squares
Date: 12/31/20 Time: 20:43
Sample: 1 40
Included observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	0.582047	7.381658	0.078850	0.9376
C	0.210569	0.397990	0.529080	0.5998

R-squared	0.000164	Mean dependent var	0.241796
Adjusted R-squared	-0.026148	S.D. dependent var	0.246566
S.E. of regression	0.249769	Akaike info criterion	0.112142
Sum squared resid	2.370604	Schwarz criterion	0.196586
Log likelihood	-0.242847	Hannan-Quinn criter.	0.142675
F-statistic	0.006217	Durbin-Watson stat	2.229064
Prob(F-statistic)	0.937565		

Table 9

Summary Statistics of Post Financial Crises				
	GDP	**LTDTA**	**LTDTD**	**TDTA**
Mean	0.022200	0.202549	0.256629	0.530682
Median	0.022200	0.104800	0.140950	0.572750
Maximum	0.028300	1.000000	0.959800	0.978300
Minimum	0.016100	0.000000	0.000000	0.005970
Std. Dev.	0.006178	0.258413	0.269293	0.277083
Skewness	-4.70E-16	1.777407	0.971331	-0.457086
Kurtosis	1.000000	5.622942	3.141351	2.277040
Jarque-Bera	6.666667	32.52753	6.323191	2.263968
Probability	0.035674	0.000000	0.042358	0.322393
Sum	0.888000	8.101970	10.26515	21.22727
Sum Sq. Dev.	0.001488	2.604323	2.828228	2.994229
Observations	40	40	40	40

Table 10

Dependent Variable: TDTA
Method: Least Squares
Date: 12/31/20 Time: 20:48
Sample: 1 40
Included observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	2.144221	7.267651	0.295036	0.7696
C	0.483080	0.167322	2.887132	0.0064

R-squared	0.002285	Mean dependent var	0.530682
Adjusted R-squared	-0.023970	S.D. dependent var	0.277083
S.E. of regression	0.280384	Akaike info criterion	0.343396
Sum squared resid	2.987386	Schwarz criterion	0.427840
Log likelihood	-4.867929	Hannan-Quinn criter.	0.373929
F-statistic	0.087046	Durbin-Watson stat	2.156471
Prob(F-statistic)	0.769572		

Table 11

Dependent Variable: LTDTD
Method: Least Squares
Date: 12/31/20 Time: 20:48
Sample: 1 40
Included observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	1.068730	7.069278	0.151179	0.8806
C	0.232903	0.162755	1.431006	0.1606

R-squared	0.000601	Mean dependent var	0.256629
Adjusted R-squared	-0.025699	S.D. dependent var	0.269293
S.E. of regression	0.272731	Akaike info criterion	0.288047
Sum squared resid	2.826528	Schwarz criterion	0.372491
Log likelihood	-3.760936	Hannan-Quinn criter.	0.318579
F-statistic	0.022855	Durbin-Watson stat	1.406897
Prob(F-statistic)	0.880634		

Table 12

Dependent Variable: LTDTA
Method: Least Squares
Date: 12/31/20 Time: 20:49
Sample: 1 40
Included observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP	0.768156	6.784574	0.113221	0.9105
C	0.185496	0.156200	1.187556	0.2424

R-squared	0.000337	Mean dependent var	0.202549
Adjusted R-squared	-0.025970	S.D. dependent var	0.258413
S.E. of regression	0.261747	Akaike info criterion	0.205833
Sum squared resid	2.603445	Schwarz criterion	0.290277
Log likelihood	-2.116665	Hannan-Quinn criter.	0.236366
F-statistic	0.012819	Durbin-Watson stat	2.523108
Prob(F-statistic)	0.910451		

Graphical Representation