Capital Structure, Global Contractions and financial Performance: Evidence from Private Firms

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Abstract
History has seen severe global credit crisis in 2007-2009, which has raised many concerns. One of the serious concerns are the leverage, performance relationship and the role of financial crisis in the performance of the private firms. Therefore, this study aims to examine the leverage, performance relationship and the impact of financial crisis on performance of private firms. To achieve our goal, the study used fixed effects regression model. Data for the study is extracted from the FAME database UK, for the period of 2004-2009. The results reveal that leverage and financial crisis have negatively affected the performance of private firms. Size and growth have positive impact on performance of private firms, while tangible assets have negative impact on performance. Further analysis reveals that both small and large firms were exposed to financial crisis. The findings of the study documents variations in the supply of finance and credit which has serious implications on their growth and performance. The findings of the study thus has implications for policy makers and financial regulations in the country.

Key words: Capital Structure, Performance, Small Firms, Financial Crisis

Introduction
Leverage measures how much assets of the firm are financed through debt. It is also used for financing the expansion of business operations so that the owners’ wealth may be increased. By making a mix of funds, which is called capital structure, the business activities are enlarged, and still the owners are entitled to the residual profit (see for example, Majumdar & Chhibber, 1999). The decision to find the optimal level of capital structure is essential for every organization, because at this level, the firm serves its stakeholders at its best. The decision is also important for its survival in the competitive environment, because an unsuitable amount of debt, in the capital structure, can kick out the organization from the market (Abor, 2005).
The relationship of leverage with the firm’s value is first examined in their seminal work by Modigliani and Miller (1958). According to the researchers, in an ideal market (in the absence of taxes, transaction cost, homogenous expectations and perfect information with all the market participants) capital structure has no impact on firm’s value. It means that the firm’s performance will remain unaltered regardless of how much debt is used in financing the assets and operations of the firm.

The real financial environment is, however, different and more complicated from the ideal one, where the assumptions made by Modigliani and Miller (1958) do not hold (Kyereboah-Coleman, 2007). The agency cost hypothesis states that high leverage ratio (but up to a certain limit) reduces the agency cost of external equity, because managers are compelled to act in the best interest of the firm’s owners (Berger & Patti, 2006), therefore, the firm's value is enhanced. There are other researchers (such as, Kyereboah-Coleman, 2007; Margaritis & Psillaki, 2007), who argue that capital structure and firm’s performance are not independent, i.e. the capital structure do have an impact on firms performance.

Financial crises make the market more vulnerable and the financial environment becomes more uncertain. Such financial crisis occurred in the period of 2007-2009 which started from bursting of the housing bubble in the United States and is considered the most severe financial turmoil after the Great Depression (see for example, Brunnermeier, 2008, for details). Not only the financial markets suffered during this crisis, but also other markets and sectors of the economy became the victims. The financial markets of Europe and Asia were also frozen during this financial crunch (Campello et al., 2009).

The financial markets and firms of the United Kingdom were not safe from the impact of global credit supply shocks. Many firms in the UK were defaulted and some were taken over by other, because they were unable to survive on their own, after the hit of such huge financial slack (Akbar et al., 2013, Akbar, Rehman., Liu, & Shah., 2017)

The impact of capital structure on firm’s performance is the focus of many researchers (see for example, Abor, 2005; Berger & Bonaccorsi di Patti, 2006; Majumdar & Chhibber, 1999, Marandu, & Sibind., 2016; Dinh, & Pham., 2020; Tetteh, Bediako, Jha, Bansal, & Kashyap, 2020 for details) however, these studies are mainly carried out during normal situations and a very limited literature exists regarding such relationship during the crises period. In addition, most of studies have focused on listed firms. Therefore, this study is carried out to examine the impact of leverage on performance and the impact of the FC on performance of private firm, which are largely, ignored in the existing literature.

As mentioned above, large amount of existing published literature have focused on listed firms, and the literature on the private firms is limited, despite the fact that the private firms in the UK hold more than two third of corporate assets (Brav, 2009). The non-listed firms have problems in access to capital markets and the firm’s performance relationship with the capital structure still remains debatable and the researchers have called for more research in the area (See for example, Kyereboah-Coleman, 2007; Rehman, 2010; Rehman & Rehman, 2011). Further, due to the large size of the US economy and academic literature, the research regarding the impact of capital structure on firms performance during the crises has mainly focused on the US firms, the results
of which are not applicable to the UK, because of differences in tax system and ownership structure (Akbar et al., 2013, Akbar et al., 2017)

This study, therefore, aims to examine the impact of leverage and the GCS on performance of the UK private firms. To get more insight, the study splits the sample into small and large groups and did separate analysis on each group. The results of the study would add to the existing literature on the behavior of small and large firms in the crisis period.

Literature Review

The literature regarding the impact of capital structure on firm’s performance starts with the seminal work of Modigliani and Miller (1958), which states that in the absence of taxes, transaction costs and agency cost the firm’s performance is invariant to its capital structure in a perfect competitive market. However, the research work carried out later has revealed that optimal capital structure exists because the firms survives not in ideal world and in the real world agency cost, transaction cost and taxes exists (Aggarwal & Kyaw, 2010).

According to Berger and Patti (2006) high leverage ratio of a firm results in high financial performance. Using data for 691 US banks for the period 1990-1995, the researchers find that increasing the level of debt in financing assets of the firms reduces the agency cost of using the outside equity funds. They further argue that use of leverage should be up to a certain limit, because beyond this limit the agency cost of outside debt will overpower the cost of equity and overall cost will rise, which negatively affects the firm’s performance. These results are followed by Margaritis and Psillaki (2007) which examined the relationship of firm’s efficiency and leverage level on a sample of 12,240 firms from New Zealand. They have also examined the reverse causality effect and found that firm’s efficiency positively affects the capital structure from low to mid level of leverage, while this effect is negative at high leverage level. There are other studies which find that the relationship of capital structure with firm’s performance of 58 Malaysian firms (from industrial and consumer sectors) during the period 2005-2010 is positive (Ahmad et al., 2012). Using data of the textile sector Pakistan Asad, Iftikhar, & Jafary (2019) also document that the relationship between capital structure and firm performance is positive.

Kyereboah-Coleman (2007) examined the impact of capital structure on performance of 52 microfinance institutions from Ghana using fixed and random effect techniques. Analysis carried out on panel data, for the period of 1995-2004, results reveal that majority of the microfinance institutions (MFI) use high level of debt in financing their operations and prefer long term debt over short term. They further find that highly levered MFIs outperformed low levered MFIs, because of economies of scale, better access to funding resources, better management of moral hazard and adverse selection problems and risk. These results support the findings of Abor (2005), who examined the profitability of firms in relation to capital structure of twenty two firms listed at Ghana stock exchange for the period 1998-2002. He also examined the impact of short term debt and long term debt and found a positive relation of profitability with short term debt, while the relation with long term debt was negative; however, the overall relation was positive. The results reported by Nirajini and Priya (2013) supports these findings that firms performance is positively related with its capital structure. They examined this relationship for a sample of listed trading companies in Sri Lanka for the period of 2006-2010.
Majumdar and Chhibber (1999) found significant negative relationship between debt ratio and firm’s performance in India. The researchers examined a large sample of 1000 Indian firms for the period of 1988 to 1994 and found contradictory results with the previous literature. They attribute these contradicting findings to the nature of credit providers and state that the debt providing financial institutions are state owned in India. They further argue that positive or negative relationship of debt level and performance is due to the behavior of managers towards the credit providers. Rakesh, H. M. (2013) also finds weak negative association between firm’s capital structure and its financial performance. He examined this relationship for Indian companies listed at Bombay stock exchange for the period 2009-2012. However, the author attributes this negative relationship to the payment of high interest charges on the use of debt capital by these companies.

Muritala (2012) examined the impact of capital structure on firm’s performance for a sample of 10 nonfinancial firms listed at the Nigerian stock exchange for the period of 2006-2010. Results of the study reveal that firm’s performance is negatively related to its capital structure. Chinaemerem and Anthon (2012) investigated the same relationship for the same firms, but their sample consists of 30 nonfinancial listed firms at Nigerian stock exchange. The time span of his study is also large, i.e. 2004-2010. Their findings confirmed the results reported by Muritala (2012).

Negative relationship between firm’s performance and capital structure is also reported by Daud (2012). He examined this relationship for a sample of 76 Malaysian firms for the period 1994-2007. The researcher argues that the use of debt for financing increases financial risk of the firm. The business using more debt in financing its operations could not determine its direction clearly, because the bond holder may impose certain limitations on the use of funds. He further states that the firms need to hold some cash for meeting interest charges owed to debtors.

According to Umar, et al.,(2012) the impact of leverage on firm performance is negative. They examined this relationship for the sample of top 100 listed companies at Karachi stock exchange. The study covers a period of four years from 2006-2009. By using ordinary least square method, they argue that capital structure is an important determinant of financial performance. The results of Younas, et al.,(2014) are contradictory to that of Umar, et al., (2012). They examined the performance of firms in sugar industry listed at KSE for the period 2006-2010, and revealed weak positive relationship between the two variables.

The negative relationship between leverage and performance for Tehranian firms is reported by Pouraghajan, et al., (2012). They examined this relationship for a sample of 400 companies listed at Tehran Stock Exchange for the period of 2006-2010. They further argue that with a low amount of debt, the management can enhance the firm’s profitability and thus, the shareholder’s wealth.

San and Heng (2011) examined the impact of capital structure on corporate performance of Malaysian companies in the construction sector during the crises period but found no clear relationship. They divided the total sample of 49 companies into small, medium and large companies and analyzed the data from 2005 to 2008. The results reveal that for large companies
return on capital with debt to equity and earnings per share with long term debt are positively related, while earning per share with debt to capital is negatively related. Earnings per share are negatively related to debt to capital in small companies and in medium companies operational margin with long term debt to capital is positively related. The overall discussion is inconclusive about the relationship of capital structure with firm’s performance.

The literature regarding the impact of capital structure on firm’s financial performance is quite rich and this relationship is examined in many parts of the world but the results are contradictory and do not reach towards a unanimous conclusion, which suggest the need for more research in this area. In addition, most of the studies are carried out in the US, while there are quite few studies outside the US. Further, the results obtained from the US studies are not generalizable to other environment, because of differences in tax, ownership structure and financial reporting system etc (Akbar et al., 2013), which stress the need for more research on the issue in other environment.

Private firms, which play an important role in the economic development of an economy, are largely being ignored in the existing literature (Rehman, Rehman, et al., 2015). That is why some authors have called for more research on these firms (Rehman, Saeed, et al., 2015). Recently, few studies have focused on private firms such as Akbar et al. (2013); Rehman and Rehman (2014); and Rehman and Rehman (2015). However, our studies are different from these studies i-e Rehman and Rehman (2015) examined the behavior of trade credit; and Rehman and Rehman (2014) examined the behavior of financially constrained and unconstrained firms. Akbar et al. (2013) Examined the components of capital structure in the crisis period. Our study is different from Akbar et al. (2013) in that they have examined components of leverage ratios, using interactive term model. Our model is different from theirs. In addition, it is not clear from their study how the small and large firms behave during the crisis period.

In addition, none of the above mentioned studies have examined the impact of global credit crisis on performance of small and large private firms. Therefore, this study aims to fill these gaps in the existing literature by examining the leverage, performance relationship for private firms and to explore the impact of global crisis on performance of these firms. In addition the study also examines the behavior of small and large private firms in the turmoil condition.

Methodology
The purpose of the study is to examine the impact of the leverage and financial crisis on the performance of the private firms. To this end, the study utilized fixed effects methodology. The study methodology is similar in spirit to the methodology adopted in some of the recent research articles (Akbar, Rehman, & Ormrod, 2013; Rehman & Akbar, 2011, Akbar et al., 2017). The model of the study is as follow:

\[
\text{Performance} = \alpha_0 + \gamma_1 \cdot SZ_{it} + \gamma_2 \cdot GT_{it} + \gamma_3 \cdot PPE_{it} + \gamma_4 \cdot \text{Lev}_{it} + \gamma_5 \cdot \text{FC} + \varepsilon_{it} \quad (A)
\]

Whereas, SZ is size of the firms i at time t, GT is sales growth, PPE is measure of tangible assets, Lev is leverage measured as total debt to total assets and FC is dummy variable measure the effect of financial crisis on firm’s performance.
The data for the study is taken from the database called Financial Analysis Made Easy database. The data is collected for the period 2004-2009. This time period is chosen because one of the objectives of the study is to examine the financial crisis impact on the performance of private firms.

**Results**

The results obtained from running the regression model (A) on firm’s performance is reported in table 1 below. It reveals that size has positive coefficient and significant at the level of 5%. The positive coefficient indicates that size has positive impact on the performance of firms. The result is consistent with the existing literature (Majumdar & Chhibber, 1999). Hence, the larger firm has an advantage of economy of scale and thus enjoys better performance in comparison with small firms.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model (A) Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SZ</td>
<td>0.028 (3.47)***</td>
</tr>
<tr>
<td>GT</td>
<td>0.085 (23.50)***</td>
</tr>
<tr>
<td>PPE</td>
<td>-0.068 (-6.37)***</td>
</tr>
<tr>
<td>TD</td>
<td>-0.165 (-16.88)***</td>
</tr>
<tr>
<td>FC</td>
<td>-0.005 (-3.55)***</td>
</tr>
<tr>
<td>C</td>
<td>-0.032 (-1.08)</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.655</td>
</tr>
<tr>
<td>N Obs</td>
<td>20710</td>
</tr>
<tr>
<td>F-statistic</td>
<td>7.76</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Note: T-statistics values are reported inside parenthesis. *** represent 1% level of significance. Similar, **, * represent 5% and 10%.

The result, however, appear inconsistent with the findings reported by Salim and Yadav (2012), who did not find significant relationship between size and performance for Malaysian listed firms.

Sales growth has also positive coefficient and is highly significant (at the 5% level). It is clear that higher the sale, higher will be the performance of the firms. The result appears consistent
with the existing literature (Salim & Yadav, 2012). Tangible asset (PPE) has negative coefficient and is highly significant. The negative relationship may reveal that tangible assets exert negative effect on performance of the firms. It may be because the inefficient use of tangible assets in the private firms.

TD, which is used as a proxy for the leverage, has negative coefficient and is highly statistically significant. It reveals that leverage has negative impact on performance of private firms. The result confirms the findings reported in Kyereboah-Coleman (2007) for micro-finance institution in Ghana. The result is also in line with the existing evidences on public firms (Aivazian et al., 2005; Majumdar & Chhibber, 1999; Salim & Yadav, 2012). Using data on US banking industry, Berger and Bonaccorsi di Patti (2006) find that leverage affects performance. However, the results appear inconsistent with published literature on public firms (Abor, 2005).

The coefficient of the FC, which is used as proxy for the financial crisis, has negative coefficient and is statistically significant. Since, the financial crisis has tightened the supply of credit, therefore, these firms are squeezed. As private firms have few financing options, therefore, reduction in the supply of credit from the bank, has negatively affected these firms’ performances. The result confirms the findings of Rehman and Rehman (2014), who show that credit shortage has weakened the performance of financially constraint firms.

The above results are obtained using whole sample, it is, however, not clear from the above discussion, that whether financial crisis has any impact on performance of small and large firms. In order to get further insight, the sample is split into small and large groups. The model (A) is run separately on each group. The results obtained are reported in table 2 below. The results reported in column (1) in table 2 below reveal the impact of leverage and financial crisis on small firms’ performance. The results reveal that leverage has negative impact on performance of small firms. Interestingly, the leverage has also negative impact on performance of large firms, see column (2) in table 2 below. Both results are statistically highly significant. However, the effect is pronounced on large firms than small firms.

The impact of financial crisis on financial performance is also examined. The results reported in table 2 reveal that credit crisis has negatively affected the performance of both small and large firms. The results of both samples are statistically significant. However, the impact is slight more on small firms than large firms. As these firms have few financing options and credit crisis has squeezed the supply of credit to these firms, which consequently has badly affected their performance.

The results of the study have contributed to the growing literature on financial crisis, by providing evidence from the perspective of the private firms, which are largely ignored in the existing literature. This is one of the first studies which have examined the leverage, performance relationship during the crisis period. In addition, sub-sample analysis has provided further new insights about the behavior of small and large firms especially, during credit drought period. The results will also serve as food for thought for the future researchers. However, the study suggests that further research in the related area is required to better understand the effect of financial crisis on firms’ behavior.
Table 2: Leverage, Financial Crisis and Firm Performance of Small and Large firms

<table>
<thead>
<tr>
<th>Variable</th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small firms</td>
<td>Large firms</td>
</tr>
<tr>
<td>SZ</td>
<td>0.1130</td>
<td>.0072</td>
</tr>
<tr>
<td></td>
<td>(5.21)***</td>
<td>(0.37)</td>
</tr>
<tr>
<td>GT</td>
<td>0.00040</td>
<td>.0002</td>
</tr>
<tr>
<td></td>
<td>(0.68)</td>
<td>(0.53)</td>
</tr>
<tr>
<td>PPE</td>
<td>-1.34E-06</td>
<td>1.07E-08</td>
</tr>
<tr>
<td></td>
<td>(-3.027)***</td>
<td>(1.218)</td>
</tr>
<tr>
<td>TD</td>
<td>-0.093</td>
<td>-0.134</td>
</tr>
<tr>
<td></td>
<td>(-4.980)***</td>
<td>(-4.86)***</td>
</tr>
<tr>
<td>FC</td>
<td>-0.014</td>
<td>-0.011</td>
</tr>
<tr>
<td></td>
<td>(-6.185)***</td>
<td>(-2.95)***</td>
</tr>
<tr>
<td>C</td>
<td>-0.316</td>
<td>0.065</td>
</tr>
<tr>
<td></td>
<td>(-3.97)***</td>
<td>(0.69)</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.602</td>
<td>0.611</td>
</tr>
<tr>
<td>N Obs</td>
<td>20544</td>
<td>2832</td>
</tr>
<tr>
<td>F-statistic</td>
<td>6.730</td>
<td>7.696</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Conclusion
The study examined the impact of leverage, and financial crisis on performance of private firms. To achieve the objectives, the study extracted data from the FAME database for the period 2005-2009. Fixed effects regression model has been used as the study research methodology. The results reveal that size and growth have a positive impact on performance of private firms, while tangible assets have a negative impact on performance. The impacts of leverage and credit crisis have negatively affected performance of firms. All results are statistically significant. In order to get the full picture, the study split the sample into small and large firms. The study finds that leverage has negatively affected the performance of both small and large firms, however, the effect is more pronounced on large firms than small firms. Further, analysis reveals that financial crisis has badly affected the performance of both firms, but small firms were more squeezed as compared to large firms.

The study has several implications. The findings have implication for all the firms especially for small firms which suggest that small firms should use other alternative financial channels for effective managing the negative impact of crisis. The results documents that impact of non-availability of external finance on operation, growth, sustainability. As small and private firms plays key role in the employment generation and economic development of the country therefore,
findings of the study has implications for the future financial regulations and policy making in the country.

The study has investigated the impact of leverage and financial crisis on the performance of firms using annual data. Future research may use quarterly data to investigate the impact of capital structure and financial crisis on performance of firms. The use of triangulation method in future research is expected to enhance our understanding of the issue discussed in our paper.

References


