Financial Problems of Small and Medium-Sized Enterprises in Turkey

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Abstract
The main of this paper is to examine the access to finance as one of the major problems faced by SMEs in Turkey. After discussing the current status of SMEs in Turkey, their difficulties in the context of the financial crisis, their current importance in Turkish economy and as an example of policy implication Credit Guarantee Fund will be discussed. In our study, we attempted to show the effectiveness of the Credit Guarantee Fund in access to finance opportunities for SMEs during the period 1990-2013/2014. Since 2006 when the efficiency of CGF has increased, structural break was found in commercial loans series. Thus existing of a significant impact of CGF on commercial loans has been showed. Also, during the related period, Granger Causality method revealed that an increased in commercial loans have an impact on new investments. As a result, it has been concluded that CGF by increasing the volume of commercial loans contribute to the country's current capital stock.
Keywords: SMEs, Financial issues, Commercial Loans, Fixed Capital Formation, Credit Guarantee Fund

Introduction
Small and medium-sized enterprises (SMEs) play an important role in sustaining competitiveness in the economy, providing employment, entrepreneurial improvements and as a tool of regional development. SMEs, due to their flexible structures, can adapt quickly to innovations, capable of responding to small variations in demand and are able to assess opportunities faster (Emir and Eyüboğlu, 2010).

Despite holding a large share in Turkish economy, the differences between Turkish and developed countries' SMEs can be seen in their levels of investment and technology, R&D, exports and lending rates (Özdemir and others, 2007). According to the OECD report on Turkey, due to low labour and annual financial turnover, SMEs in Turkey differ from SMEs in the EU and many other OECD countries. In addition, they lag behind in terms of know-how, skill level, and the amount of capital, access to modern technology, especially in communication and information field and the ability to benefit from these advantages (OECD, 2004).

Turkey has experienced crises in 1991, 1994, 1999 and 2001 consecutively. 1994 and 2001 crises differ in their characteristics from others. These two crises hit the banking sector and many banks have stopped their activities. Lack of financial control, high balance sheet risk in the banking and corporate sector are the common characteristics of these two crises. To avoid collapse of the economy, the government undertook the load of recapitalizing companies and banks. After the 2001 crisis in Turkish economy, monetary and fiscal policy was tightened, tax rates have been increased and new taxation put into practice. The barriers for privatization and trade eliminated and measures were taken for trade liberalization. By these measures it was intended to reduce public spending and budget deficit and increase the national savings and hence the primary surplus (Ban and others, 2010).

2008 mortgage crisis affected developing countries as well as developed countries on a global scale. The main causes of this crisis can be listed as follows: deterioration in structure of mortgage loans, incompatible interest rate structure, increases in house prices, difficulties in funding securities, the growth of credit derivatives market and problems in credit rating process. The main effect of the crisis on SMEs arises out of shrinking demand. However, another important issue is access to finance for SMEs is being reduced as a result of the global financial crisis. But global financial crisis, while limiting access to credit for SMEs also may lead to difficulties in repayment of loans (Emir and Eyüboğlu, 2010).

The global crisis has made it difficult to get external loans for Turkish banks which borrow from abroad by corrupting the structure of banks' balance sheets. In this case the loans that were used by large companies from Turkish banks have decreased and supply chain was affected. Thus, within the supply chain, volume of business of SMEs has contracted. On the other hand, the contraction in commercial loans have narrowed the credit volume of SMEs which do not have the opportunity to get credit financing from institutions other than banks (TEPAV,2008).

There are many studies that focus on finance of SMEs in the literature. Most of the papers have used survey data fulfilled both by SMEs and by financial institutions. Abor and Biepke (2007) examined the determinants of bank financing and debt among SMEs in Ghana for 1998-2003 periods with survey data conducted to 105 SMEs with less than 100 employees by panel regression methodology. They used the ratio of bank debt of SMEs to total debt that measures the role of bank financing in the SMEs sector as dependent variable. The results showed that age of the firm, size of the firm, asset tangibility have positive and significant effect to bank-debt ratio. Profitability of firm has significantly negative relationship with bank-debt ratio and growth of firm has positive effect on the dependent variable but it is insignificant. Bechri, Najah and Nugent (2001) studied the failure of the lending program called FOPRODI created in 1974 for SMEs in Tunisia. The aim of the lending program was to finance new entrepreneurs with insufficient capital to start business and create new jobs. Because of extremely low repayment it became unsustainable and collapsed in 1997. Its loan

default rate was around 50 percent when it failed. The authors concluded that banks changing higher interest rates to reflect a higher risk premium worsened the problem.

Kang, Heshmati and Choi (2008) analyzed the relationship between credit guarantee, survival of guaranteed firms and firms' productive performance in Republic of Korea by using data from 200.702 applicants which requested credit guarantee during 2001-2004 periods with panel regression methodology. The results show that credit guarantee enabled guaranteed firms to achieve good performances. Also, the effect of credit guarantee on the survival of SMEs is positive with a lag. Schmeider, Marsch and Foster-van Aerssen (2010) investigated the effect of process of banking consolidation on SMEs access to credit in Germany for 1996-2002 periods. Bank debt-asset ratio and credit size as dependent variables were used to examine the relationship between bank financing for SMEs and banking size. As a result, they found out that banking consolidation in Germany has no sustainable negative impact on financing SMEs.

Bottazzi, Rin, Van Ours and Berglöf (2002) analyzed the 1990-2000 period for the role of venture capital in Europe. As a result of the analysis, it was seen that venture capital has actually grown for this decade. And also number of venture capital firms listed in stock market became significant. Finally, venture capital has the capability to lessen the credit constraints.

Zucchini and Ventura (2009) examined the effect of public credit guarantees to SMEs in Italy for 1999-2004 periods by using various variables such as number of firms, financial cost/bank debt, bank debt/total assets, sales and fixed assets. They used instrumental variable method in order to separate the causal effects. The results shows that public credit guarantee is an effective instrument in reducing borrowing cost for credit-rationed firms.

The main of this paper is to examine the access to finance as one of the major problems faced by SMEs in Turkey. After discussing the current status of SMEs in Turkey, their difficulties in the context of the financial crisis, their current importance in Turkish economy and as an example of policy implication Credit Guarantee Fund will be discussed.

1. Small and Medium-Sized Enterprises in Turkish Economy

In Turkey, until 2005, different SMEs definitions, used by many organizations, were lead to difficulties on issues such as support and cooperation with EU. Therefore SMEs definition was revised by the Regulation Decision No: 2005/9617 published on 18 November 2005 in the Official Gazette. According to this definition SME is an economic unit which has annually less than 250 employees and annual net sales revenue or fiscal balance less than 25.000.000 YTL and classified as micro enterprise, small business and medium-sized enterprise in this regulation (Güler, 2009: 92). With this regulation SMEs definition has been harmonized with the EU definition.

Small and Medium-sized business, with their flexible and dynamic structure, their share in manufacturing industry in terms of production and employment, occupies an important place in the economy. According to the statistics published by Turkey Statistical Institute in 2012 and shown in Table 1, with 99 percent share within total enterprise, SMEs has an important share in the economy. Also they employed 77 percent of the working population in the economy. Despite their share in enterprises and employment, the wage share has been fallen from 53 percent in 2009 to 51 percent in 2011. Besides they produce only 55 percent of the total value added in the economy.

Table 1:
The Share of SMEs in Turkish Economy

	2009 (%)	2011 (%)
Venture share	99.9	99.9
Employment share	76	77.8
Wage and salaries	53	51.5
Value added at factor cost	53.3	55.5
Gross investment	53.7	41.1
Revenue share	63	64.8

Source: TÜİK, 2013

The foreign trade statistics for SMEs between 2009 and 2012 are shown in Table 2. Considering their share in the total venture and in the economy, their trade performance is relatively low. The import share of SMEs was 40.1 percent of the total imports in 2009, increased by 2.1 points in 2010 and in meanwhile have decreased to 39.5 percent in 2012. The export share of SMEs was around 60 percent in 2009 and 2010, decreased to 59.6 percent in 2012 and increased to 62.6 percent in 2012.

Table 2:
The Share of SMEs in Turkish Foreign Trade

	2009	2010	2011	2012
Imports (%)	40.1	42.1	39.9	39.5
Exports (%)	60.0	60.1	59.6	62.6

Source: TÜİK, 2013

Table 3 shows the R&D shares of SMEs in total R&D investments for the available years. In 2010 the R&D share of small and medium sized enterprises was 14.9 percent and increased to 16.6 percent in 2012. It can be stated that the R&D share of SMEs with respect to their total share in the economy is still very low

Table 3:
The R&D Shares of SMEs

	2010	2012
R&D share (%)	14.9	16.6

Source: TÜİK, 2012

Financial problems of SMEs can be listed as, lack of equity capital, inadequate business capital, difficulty in obtaining credit and difficulty of obtaining funds from capital markets. Another reason for financial difficulties in Turkey is that banks are under management of large firms (Yörük, 2001:189). Deficiencies in the management and organizational structure of SMEs, lack of financial management, the absence of financial statements in accordance with accounting rules and inadequate equity capital caused banks to prefer large scale enterprises that have lower risk when granting credits. In addition, during a crisis, banks suspend crediting and can recall the current credits (Erdoğan, 2010: 306-307).

SMEs cannot provide enough credits from financial institutions due to high interest rates, heavy guarantee requirements, short loan maturity and insufficient amount of credit. Since they are reluctant to take risks, banks sometimes demand guarantee much higher than credit. While large firms can provide guarantee by their enterprises' assets, small enterprises usually

reveal their personal assets as guarantee. In this case, an economic instability may cause business owner to lose his personal assets. As a result, small businesses are reluctant to financing with credits (Yörük, 2001:190).

One of the main problems of SMEs is access to finance along with stabilization and structural conditions. In this context, Turkey established the Credit Guarantee Fund as an example of policy implementation.

2. The Role of Credit Guarantee Fund in Financing SMEs

Credit Guarantee Fund (Kredi Garanti Fonu – KGF), established in 1991 to eliminate the difficulties of guarantee faced by SMEs and small businesses when they borrow from financial institutions, operates for the benefit of SMEs, tradesmen and artisans, agricultural enterprises and farmers, women and young entrepreneurs. KGF, when assessing SME application, pay attention to the project to be according to lending principles, but in difficulty of accessing credit due to lack of guarantee. Besides it is important for the project to be profitable, feasible and sustainable, skills and experience of the management team. Also the project should provide employment growth and protect this employment. KGF, working with 26 banks and 14 financial leasing companies, gives guarantee up to 80 percent of the loan. Types of loans guarantee given by KGF listed as follows (KGF, 2013):

- Starting-up new business,
- New investment of existing SMEs,
- Supply of raw materials,
- Modernization and implementation of high technology,
- Moving to new workplace,
- Resolving cash shortage,
- Financing of the exports,
- Financing of the imports,
- A letter of guarantee for loans,
- Financial leasing,
- Other cash and non-cash loans.

Table 4:
The Approvement of Demands Guarantee of Yearly Basis

Years	Number of Credit (Incoming Demand)	Number of Credit (Approved Demand)	Credit Amount (Approved Demand TL)
1994-2004	3104	1914	101.489.188
2005	487	298	37.279.764
2006	574	317	46.859.899
2007	595	305	52.995.372
2008	1897	1138	284.593.868
2009	4110	2605	565.355.714
2010	3726	2382	663.023.784
2011	3279	1834	601.350.156
2012	3413	1694	499.186.783
Total	21186	12485	2.819.222.373

Source: www.kgf.com.tr 15.01.2014

Table 4 and Table 5 represent the number and amount of credit demand from Credit Guarantee Fund from 1994 until 2012. In Table 4, it can be seen from figures that after 2006 when the Credit Guarantee Fund enlarged its finances, there were increase both in incoming and approved demand of guarantee. In 2008 the incraese was almost four times compared with the previous year. The year 2009 stands out with largest figures both in incoming and approved demand of credit guarantee as the year 2008 global financial crisis struck the Turkish economy in real sector.

As seen from Table 5 between the years 1994-2012, out of 12485 approved credit guarantees 4807 were provided to micro enterprises, 5806 to small companies and 1872 to mediım-sized enterpries.the largest amount of credit guarantee wad provided to small scale companies.

Table 5:
Distribution of Guarantees According to the Size of Firms (1994-2012)

Scale	Number of Guarantee	Guarantee Amount (TL)
Micro Companies (1-9)	4807	762.774.016
Small Companies (10-49)	5806	1.419.958.487
Medium-Sized Companies (50-149)	1872	639.489.871
Total	12485	2.819.222.374

Source: www.kgf.com.tr 15.01.2014

Figure 1 plots the commercial credits to private sector that have supplied by deposit banks in Turkey between 1990 and 2012. In Turkish economy, commercial credits grew relatively slow during 1994-2005 period. A sharp increase began approximately during 2006. In this context, it is clear that commercial credits rise rapidly with the establishment of Credit Guarantee Fund and it contributes to SMEs' access to finance.

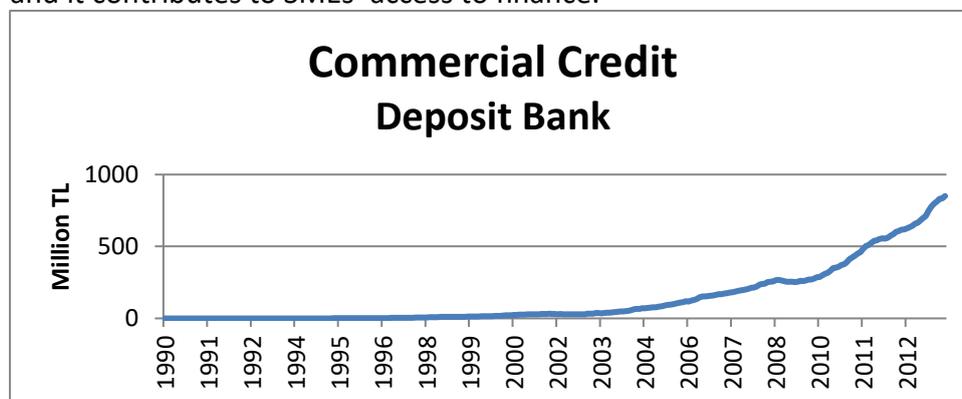**Commercial Credit**
Deposit Bank

Fig. 1: Commercial Credits by Deposit Banks, 1990-2012; Source: TCMB

Investment and Development banks finance projects that need huge funds. In this context, given the Credit Guarantee Fund provides deposit guarantee for small and medium sized businesses, a rapid increase in commercial credits of Investment and Development banks is not expected after 2006. On the other hand, due to financing projects that need major funds, financing SMEs is becoming relatively trivial matter for Investment and Development banks. An important point to be drawn from Figure 2 is that, Investment & Development banks and Participation banks have very small role in supplying commercial credits.
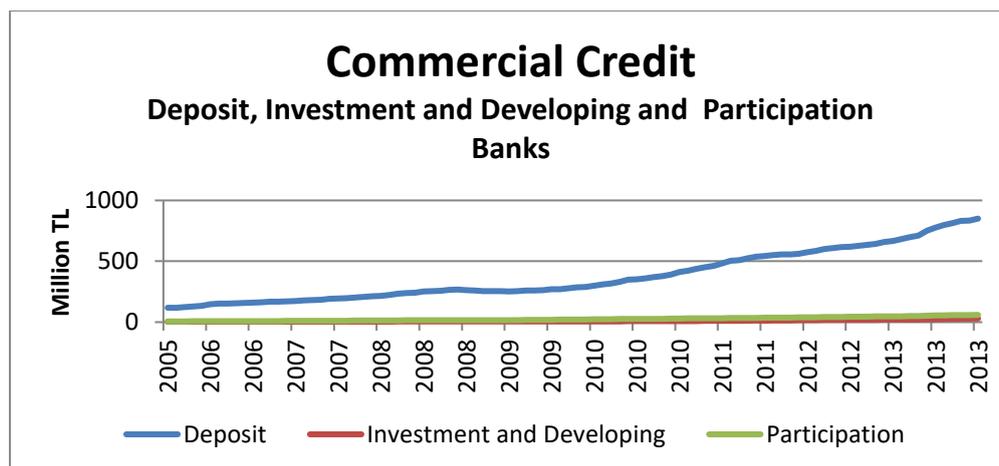
Fig. 2: Commercial Credits by Banking Sector, 2005-2013; Source: TCMB

3. Methodology

We have attempted to show that there is a significant effect of Credit Guarantee Fund on commercial credits with graphical analysis. In addition to the graphical representation, to obtain more accurate results Perron 1989 unit root test with structural change was used in this paper. The presence of structural change in commercial credits series was investigated with the help of this test. Perron 1989 structural test is used to search for structural break that may arise at the level, slope or both level and slope externally (Perron, 1989).

Commercial credits to the private sector series was examined for 1991M02 – 2014M01 period by using monthly data with Perron 1989 test method in Turkey. Externally, since the volume of credit of KGF was increased in 2006, the presence of a structural change is examined with a dummy variable. As a result, it has been seen that, there is a significant structural change in the slope of the volume of commercial credits series after January 2006. The trade test statistics of Credit Guarantee Fund can be seen in Appendix 2.

It is concluded that KGF has a significant effect on commercial credits by using econometric modelling. Another important point to be emphasized here is the effect of the increase in commercial credits on the efficiency of new investments in the economy. The following figure shows the fixed capital formation and volume of commercial credits series in Turkey for 1998M1 – 2013M3 periods. The Figure 1 indicates that the series move along, in other word, there is causality relationship between the series. First, we take the logarithm of series and properly compensate constant trend effects from series in order to achieve stationarity. Granger causality test was applied to investigate causality relationship between series.
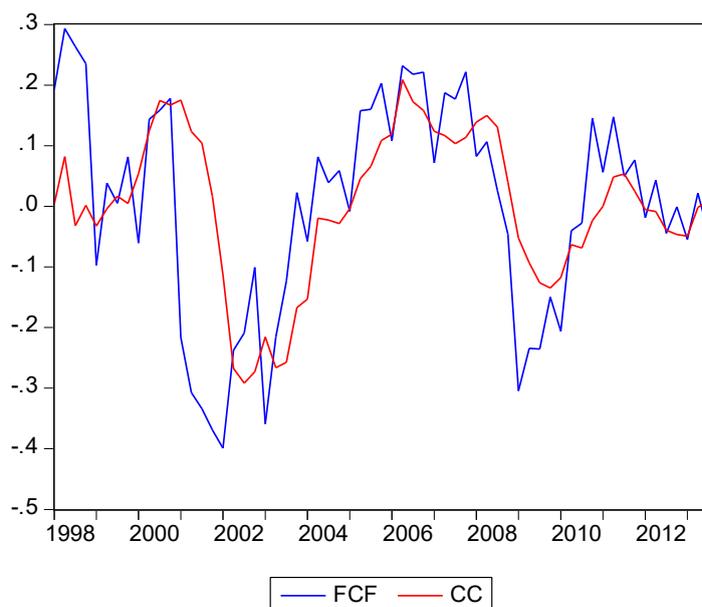
Fig. 3: Logarithms of Fixed Capital Formation and Commercial Credit.
According to the Granger causality test results, volume of commercial credits has a significant impact on new investment during the relevant period in Turkish economy. The results of Granger Causality test are listed in Appendix 3. These results are important to show that, an increase in SMEs' access to finance whether increases new investments along with increasing current capacity. As a result, it can be said that an increase in SMEs' access to finance leads to an increase in new investments.

Conclusions

In our study, graphical and econometric methods were applied to show the effectiveness of Credit Guarantee Fund in accessing funding opportunities for SMEs, after presenting the importance of SMEs in Turkish economy and explaining Credit Guarantee Fund. We have attempted to show the effectiveness of CGF in providing finance opportunities to SMEs in 1990-2013/2014 periods. A structural change was found in commercial credits series since 2006 when the effectiveness of CGF has increased. Thus, it has been shown that there is a significant impact of Credit Guarantee Fund on commercial credits.

Another important point for our study is that whether commercial credits were used to increase the current productive capacity or for new investment. For this analysis, the existence of a causality relationship between commercial credits and new investment for 1998M1 – 2013M3 periods was investigated. According to the obtained results, in the corresponding period, commercial credits growth has an impact on new investment in Turkey. As a result, it has been concluded that by increasing the volume of commercial credits CGF contributes to the country's current capital stock.

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Appendix 1
Perron Test: null and alternative hypothesis that are used in Perron test when investigating the structural change in the series are as follows;

Model A;

Null Hypothesis: $Y_t = \mu + \delta_1 DUTB_t + Y_{t-1} + \varepsilon_t$ 　　　　Alternative Hypothesis: $Y_t = \mu + \beta t + \delta_2 DU_t + \varepsilon_t$

Here 　　　$DUTB_t = \begin{cases} 1, t = T_b + 1 \\ 0, t \neq T_b + 1 \end{cases}$ 　　　　$DU_t = \begin{cases} 1, t > T_b \\ 0, t \leq T_b \end{cases}$

Model B;

Null Hypothesis: $Y_t = \mu + \delta_2 DU_t + Y_{t-1} + \varepsilon_t$ 　　　　Alternative Hypothesis: $Y_t = \mu + \beta t + \delta_3 DVT_t + \varepsilon_t$

Here $\quad DU_t = \begin{cases} 1, t > T_b \\ 0, t \le T_b \end{cases}$ $\qquad DVT_t = \begin{cases} t - T_b, t > T_b \\ 0, \quad t \le T_b \end{cases}$

Model C;

Null Hypothesis: $Y_t = \mu + \delta_1 DUTB_t + \delta_2 DU_t + Y_{t-1} + \varepsilon_t$ $\quad$ Alt. Hyp. : $Y_t = \mu + \beta t + \delta_2 DU_t + \delta_3 DVT_t + \varepsilon_t$

Here $\quad DUTB_t = \begin{cases} 1, t = T_b + 1 \\ 0, t \ne T_b + 1 \end{cases}$ $\qquad DU_t = \begin{cases} 1, t > T_b \\ 0, t \le T_b \end{cases}$

$\qquad DU_t = \begin{cases} 1, t > T_b \\ 0, t \le T_b \end{cases}$ $\qquad DVT_t = \begin{cases} t - T_b, t > T_b \\ 0, \quad t \le T_b \end{cases}$

Granger Causality Test: Granger Causality test can be used to determine the direction of the relationship between the series. Two-way and one-way relationship between the series can be investigated by this test. We estimated both series with their lagged values to investigate the lagged relationship between series. As a result of this regression, if variance is found to be minimum value, it can be concluded that there is a causality relationship from the other series to the relevant series.

Appendix 2

Dependent Variable: LTKH				
	Coefficient	**Std. Error**	**t-Statistic**	**Prob.**
C	-97367393	15288388	-6.368715	0.000
@TREND	1327646.	145834.7	9.103774	0.000
DUMMY	1.76E+08	24237066	7.269526	0.000
R-squared	0.738	Adjusted R-squared		0.736

Appendix 3

Grange Causality Test			
Null Hypothesis:	Obs.	F-Statistic	Probability
CC does not Granger Cause FCF	59	2.10408	0.09415
FCF does not Granger Cause CC		3.09281	0.02370