CENTRAL BANK OF THE REPUBLIC OF TURKEY

WORKING PAPER NO: 10/16

The Trade Credit Channel of Monetary Policy Transmission: Evidence from Non-financial Firms in Turkey

September 2010

Pınar ÖZLÜ
Cihan YALÇIN

© Central Bank of the Republic of Turkey 2010

Address:
Central Bank of the Republic of Turkey
Head Office
Research and Monetary Policy Department
İstiklal Caddesi No: 10
Ulus, 06100 Ankara, Turkey

Phone:
+90 312 507 54 02

Facsimile:
+90 312 507 57 33

The views expressed in this working paper are those of the author(s) and do not necessarily represent the official views of the Central Bank of the Republic of Turkey. The Working Paper Series are externally refereed. The refereeing process is managed by the Research and Monetary Policy Department.

The Trade Credit Channel of Monetary Policy Transmission: Evidence from Non-financial Firms in Turkey*

Pınar Özlü[γ] **Cihan Yalçın**[ι,γ]

[γ] *Central Bank of the Republic of Turkey*
[ι] *World Bank*

September 2010

Abstract

This study investigates the trade credit channel of monetary policy transmission in Turkey by using a large data set of corporate firms, which includes detailed information on balance sheets and income statements of firms regularly reported to the Central Bank of the Republic of Turkey (CBRT) in the period of 1996-2008. It suggests that the composition of external finance differs considerably across firm types based on size and export performance under tight and loose financial conditions. For both manufacturing and non-manufacturing firms, small and medium-sized firms (SMEs) and firms with low export share are financially constrained especially in tight periods. Findings suggest that those firms, which are financially constrained, tend to substitute trade credits for bank loans in tight periods. On the other hand, the evidence for large and export-oriented firms differs significantly across manufacturing and non-manufacturing sectors such that manufacturing firms are more likely to have access to bank finance in tight periods compared to non-manufacturing firms. Large trade credits volume in firms' balance sheets and its response to monetary stance imply that trade credit channel may mute the traditional credit channel of monetary transmission.

JEL classification: E44; E52
Keywords: Credit Channel; Trade Credits; Monetary Policy Transmission

* We thank Statistics Department of Central Bank of the Republic of Turkey for providing data and especially Metin Öner for assistance and patience in answering our questions. The views expressed in this paper do not necessarily represent those of the Central Bank of the Republic Turkey.

[γ] Corresponding author: Pınar Özlü; Research and Monetary Policy Department, CBT; Head Office Istiklal Caddesi: No.10 Ulus; Ankara; TURKEY 06100; e-mail: pinar.ozbay@tcmb.gov.tr; phone: (312) 507 5457; fax (312) 507 5732.

[ι] Cihan Yalçın; World Bank Turkey Country Office; e-mail: cyalcin@worldbank.org.

I. Introduction

The credit channel of monetary transmission literature has extensively focused on two sub-channels namely, the broad credit (balance sheet) and the bank-lending channels. The balance-sheet channel pays attention to the interaction of monetary policy with borrowers' balance sheets and argues that business cycles may be propagated to the extent that the state of firms' balance sheets affects their ability to borrow and to spend, and can give rise to the possibility of 'endogenous credit cycles' and accelerator effects (see Kiyotaki and Moore, 1997; Bernanke, Gertler and Gilchrist, 1996 and 1998; Gertler and Gilchrist, 1994). On the other hand, the bank-lending channel focuses more narrowly on the possible effects of monetary policy on the supply of bank loans and considers bank loans as the primary source of loanable funds. The effects of a monetary contraction would be magnified by the reduction in loans supplied by banks as well as through the traditional money channel on output and loan demand (see Bernanke and Blinder, 1988; Kashyap, Stein and Wilcox, 1993; Kashyap, Stein and Lamont, 1994).

Bank-lending channel is often regarded as *special* because firms, and particularly small firms, are constrained in their ability to draw credit externally thus the absence of available substitutes gives rise to dependence on bank loans. This would potentially amplify the impact of shocks on expenditure decisions of the private sector. The extent to which the traditional bank-lending channel is important depends on the substitutability between internal and external sources of funds and between bank lending and other forms of external finance. The empirical literature provides mix evidence for a distinct bank-lending channel. A closer examination of the borrowing behavior of firms shows that firms fund a significant portion of their assets through trade credits[1] and the scale of usage increases during periods of monetary contractions or increasing the degree of financial pressure. This may, at least partially, explain why empirical evidence does not support the bank-lending channel strongly (see Elliehausen and Wolken, 1993; Rajan and Zingales, 1995; Berger and Udell, 1998; Kohler et al., 2000; Atanasova and Wilson, 2001).

A monetary policy tightening may worsen conditions for bank dependent firms in accessing external finance. However, firms with access to capital markets and trade

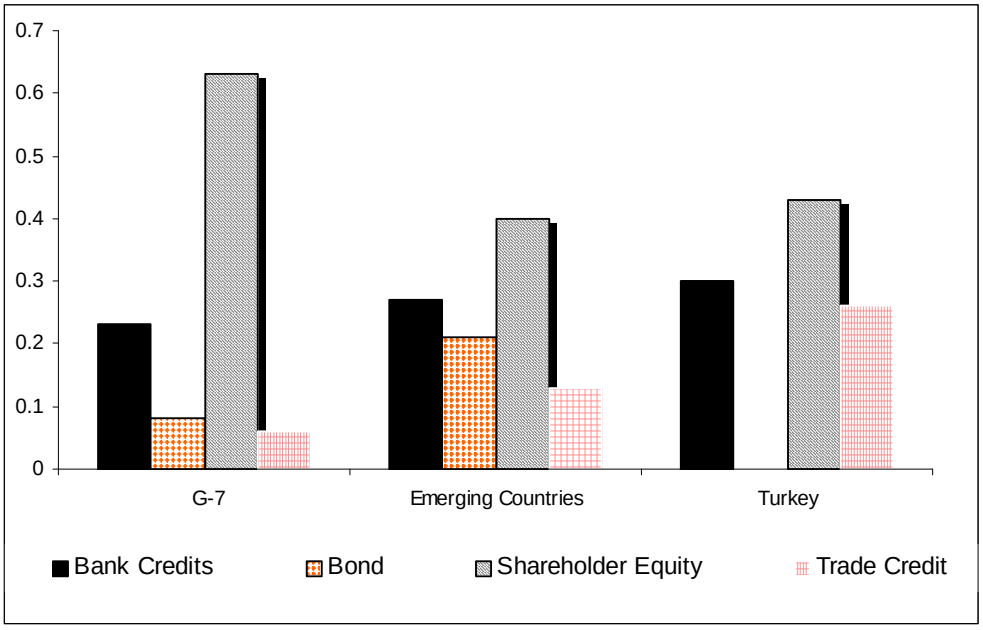
[1] In addition to borrowing from the banking sector, firms are also financed by their suppliers.

credits may step in to fill the financing gap, mitigating the impact of the policy tightening on their real activity. The hypothesis that, a trade credit channel might mitigate the impact of traditional bank-lending channel, was first suggested by Meltzer (1960). Meltzer observed, "When money was tightened, firms with relatively large cash balances increased the average length of time for which credit was extended and this extension of trade credit appeared to have favored those firms against whom credit rationing is said to discriminate". Meltzer (1960) suggests using micro level data rather than aggregated one to better assess the credit channel of monetary transmission. Recently an increasing number of studies have investigated the role of trade credit in the context of credit channel.[2] A number of them suggest that firms may potentially substitute trade credit for bank loans when monetary policy tightens (see Kohler et al., 2000; Nilsen, 2002; Choi and Kim, 2005; De Blasio, 2003; Valderrama, 2003; Mateut et al., 2006; Guariglia and Mateut, 2006).

Research on trade credit channel that employs emerging markets data is very limited. Among them, Love et al. (2007) studies the behavior of trade credits around the time of financial crisis and provide evidence that the usage of trade credits increase at the peak of financial crisis in Indonesia, South Korea, Malaysia, the Philippines, Thailand and Mexico. Trade credit is also important in China where firms have limited access to the banking resources (see Ge and Qiu, 2007). Yalçın et al. (2005) and Aydın et al. (2006), which provide a detailed descriptive analysis on the financial structure of Turkish corporate sector, suggest that the share of trade credits in total external finance is significantly high in Turkey compared to other economies (Figure 1) and thus the corporate sector, at least partially, mitigates the negative impact of financial constraints on their activity through trade credits and other forms of informal resources.

[2] Mateut (2005) provide a detailed survey of the literature analyzing whether trade credit plays an offsetting effect on the traditional credit channel of monetary policy transmission.

Figure 1: Sources of Finance in Corporate Sector: The World and Turkey*



Source: Cihan et al. (2005).

* CBRT Sectoral Balance Sheet Data Set comprising 3900 firms in manufacturing sector for Turkey, IMF Global Financial Stability Report (2005) for the others.

The financial structure of the firms both in the manufacturing and non-manufacturing sectors in Turkey implies that small and medium-sized firms (SMEs) have limited access to bank loans. Trade credits constitute a large portion of their external finance given that there is virtually no formal market finance available for the corporate sector in Turkey. The evidence for the large share of trade credits in firms' balance sheets calls for a closer analysis of the financial structure of firms and its implication for monetary policy transmission. Given this fact, measuring the response of firms' external finance choice to the monetary policy changes is the main concern of this study. More specifically, this study enables us to understand whether the effects of monetary policy tightening operate through a traditional credit channel, amplifying the effects of the direct money channel, and whether trade credits channel mute these effects to some extent in Turkey.

By using similar methodology adopted by Mizen and Yalçın (2006), this study suggests that the composition of external finance differs considerably across different firm types or groups based on size and export performance. For both manufacturing and non-manufacturing firms, we observed that small and medium-sized firms and

firms with low export share are financially constrained in tight periods. The findings suggest that these firms tend to substitute trade credits for bank loans in difficult times consistent with "pecking order" theory. The evidence for large and export-oriented firms differs across manufacturing and non-manufacturing such that while those firms in the manufacturing sector have access to bank finance in tight periods, the ones in non-manufacturing sector are financially constrained in terms of accessing to bank finance.

The plan of the remainder of this paper is as follows. A discussion on data is provided in section 2. In section 3, we briefly present the specification of the model and the estimation methodology. Empirical results are reported in section 4. Finally section 5 concludes.

II. Data

This study uses a large data set of corporate firms, which report their balance sheets and income statements regularly to the Central Bank of Turkey (CBT) in the period of 1996-2008. Total number of firms available in the data set is nearly 10 thousand while only about 7 thousand reported regularly in recent years, and nearly half of them are operating in manufacturing sectors and the rest in non-manufacturing sectors including mining, energy, construction, trade, transportation, education, health and others. Non-manufacturing activity are largely made up off services firms. The mean values of variables related with the liability structure of firms according to different firm groups are given in appendix Tables A-C. Total firm assets are used as weight to calculate the aggregated mean values for firms that continuously report their balance sheets over the period of 1996-2008. There is minimum number of missing observations, which, we believe, has limited impact on the general trends and findings.[3]

Firms both in the manufacturing and non-manufacturing sectors are split into small, medium and large based on employment figures, i.e. firms that have less than average 50 employees are classified as small, those have 250 and more employees are large and those employing between 50-250 employees are classified as medium. The mean values of ratios reported in Table A-C provide some details on the financial structure (the compositions of liabilities) of firm groups both in the manufacturing and

[3] In fact, the extent of missing variables does not affect trend in the data.

non-manufacturing sectors. It is observed that shareholder's equity and short-term finance constitute a very large portion of firms' liabilities.

During the period investigated, firms extensively use short-term finance, which mainly consist of short-term bank loans and trade credits. A striking feature of the Turkish corporate sector is the high share of trade credits in total liabilities even though it has declined in recent years due to rise in the share of shareholders' equity given favorable growth pace. Institutional framework does not support market-oriented relations formally in the financial system, as corporate bond market does not exist at all in Turkey. In fact, this creates second best solution in the form of large proportion of trade credits and other non-bank short-term debt.[4] In addition, macro-economic instability in the past and high public sector borrowing requirement have also motivated the extensive usage of trade credits and other short-term non-bank debt (affiliates, partners and others) (Figure 2-5).

The proportion of trade credits in the balance sheets of corporate firms is very high in general while it has deep economic implications for SMEs, which are highly constrained especially in times of financial stress. The extensive usage of trade credits by these firms is very much associated with structure of financial system and the magnitude of available funds in the system.[5] Banks prefer to provide credits to financially strong firms and to finance large public sector borrowing requirement in times of the tight financial conditions rather than extending funds to small and financially weak firms, which are financially constrained, are also less prone to use external finance for the purpose of enhancing their capacity.

Figures for different firm groups reported in Table A show that during the crisis period, large manufacturing firms are able to continue their activities by increasing the share of bank loans in their finance while SMEs tend to use more trade credits and other short term non-bank debts. This may imply that large firms act as financial intermediary trough extending trade credits to their financially weak clients during difficult times (Figure 2-5).

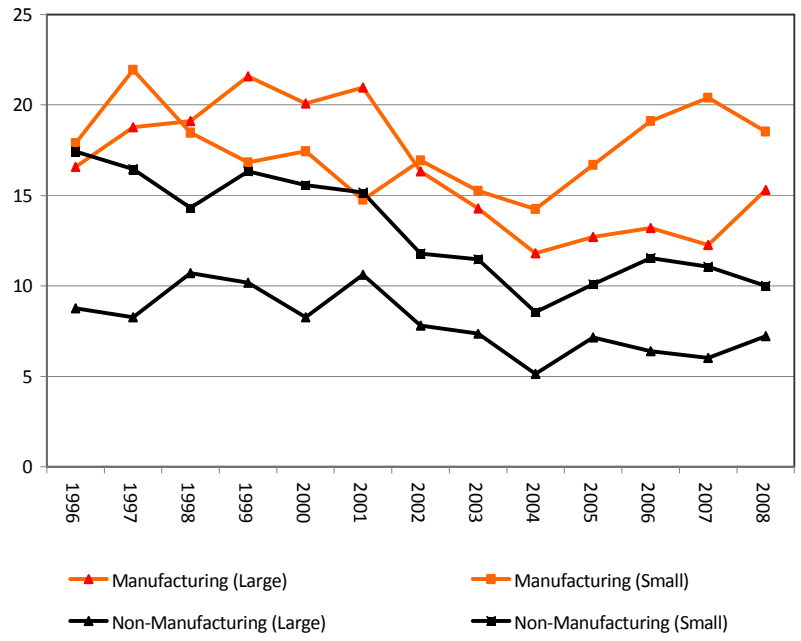
Table B shows respective figures for non-manufacturing firms. We observe some slight differences compared to manufacturing firms. Non-manufacturing firms have larger current liabilities and lower shareholder's equity shares. Trade credits and other

[4] Other non-bank short-term debt constitutes the sum of short-term other debt and other items among the composition of liabilities in Tables A-C. Short-term other debt includes debt to affiliates, partners and others.

[5] See Türkan (2004).

non-bank debts have larger proportion for non-manufacturing firms. The choices of external finance across different firm groups are also different for non-manufacturing firms. The extensive usage of other non-bank short-term debt is more apparent for large firms while they surprisingly tend to use less bank loans proportionally compared to SMEs.[6] One may think that large non-manufacturing firms are potentially more constrained and dependent on bank finance as the proportion of bank loans is low in their balance sheet. However, these finding needs to be taken cautiously as the sub-sectors of non-manufacturing firms have heterogeneous structure contrary to the manufacturing sectors. For example among the liabilities item "remunerations spread over years" included in the "other" item is very high for the construction sector. Also energy, trade, construction and transportation sectors have different characteristics. Analysis of the sub-sectors in non-manufacturing sector may provide a better explanation. The question why an average non-manufacturing firm tends to use more non-bank debt finance needs to be answered but it is not subject matter of this study.

Figure 2: Short-Term Bank Loans as Percent of Total Liabilities



[6] These figures are also calculated based on asset size, and similar to the ones calculated based on employment, which are reported here. Results calculated based on assets size can be provided from the authors in request.

Figure 3: Shareholder's Equity as Percent of Total Liabilities (%)

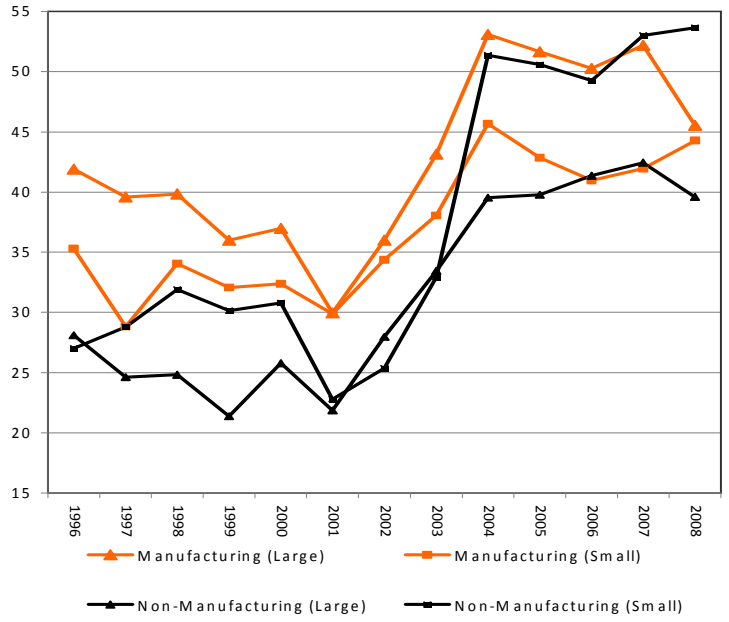


Figure 4: Short-Term Trade Credits as Percent of Total Liabilities (%)

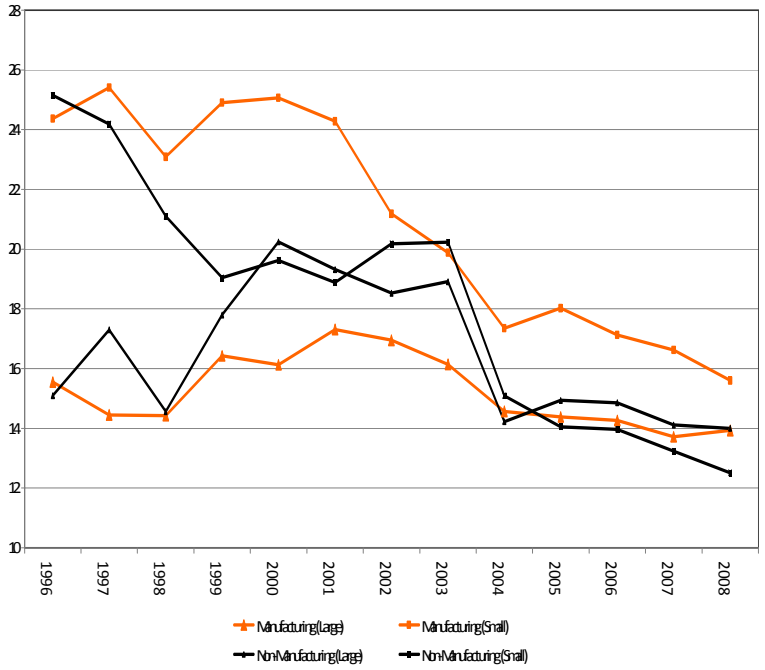
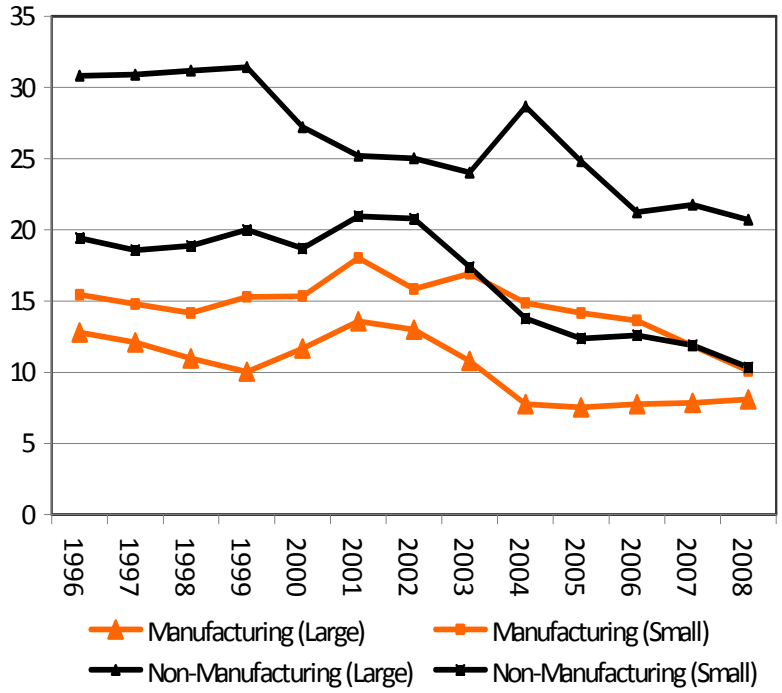


Figure 5: Other Short Term Non-Bank Debt Including Debt from Partners



We also report the liability composition of firm groups based on export performance.[7] The figures reported in Table C show that in the manufacturing sector, the share of short-term bank loans is higher than the share of trade credit for firms with high export share in total sales compared to the ones producing for the domestic market. These results imply that export-oriented firms are able to access to bank finance easily. The evidence in the non-manufacturing sector is different. The share of trade credit is higher than the share of bank loans for both groups.

III. The Literature and the Model

The credit view of monetary transmission is extensively studied based on by the twin-pillars of the balance-sheet channel and the bank-lending channel in the literature. The balance sheet channel implies that market imperfections can generate

[7] We consider the firms in the lower 25 percentile of export share as low export firms and those in the upper 25 percentile of export shares are classified as export-oriented firms.

cycles in economic and financial activities. Fluctuations in the activity of financial and non-financial firms become more significant with a rise in the degree of informational problems. Therefore, for example, a contractionary monetary shock is expected to weaken the financial position of financial and non-financial firms and it may undermine the ability of the borrowers to finance their investment through external funds as well as that of lenders to extend loanable funds. Poorly capitalized firms, with weak balance sheets in terms of net worth, will have to pay a high cost for external funds relative to large well-capitalized firms. In other words, an initial decline in the economic activity as a result of a tight monetary policy will have a large impact on the borrowing and spending decisions of the agents facing credit market frictions, such as small firms.[8]

Monetary policy may have some influence on the lending ability of banks not only through the broad credit channel but also through a bank-lending channel. The bank-lending channel focuses exclusively on bank loans as a distinct component of external finance since for some firms they are the primary source of loanable funds. The effects of a monetary contraction are magnified by the reduction in loans supplied by banks, which amplifies the demand-side effects on expenditure decisions of the private sector. The extent to which the bank-lending channel is important depends on the substitutability between internal and external sources of funds and between bank lending and other forms of external finance. Under certain circumstances firms may resort to borrowing from banks (even at a higher rate of interest) if they cannot obtain funds elsewhere. SMEs in particular may be unable to access other markets for funds and therefore will be dependent on banks for external sources of funds.[9] The absence of available substitutes gives rise to dependence on sources of funds from banks and imparts a particular leverage from bank lending to real activity.

An increasing number of studies in the literature argue that trade credit is an important source of external finance and play an important role in the context of credit channel. Firms may be financed not only by financial institutions but also by their suppliers. A firm (supplier) provides trade credit, in other words short-term loan, to its customers upon purchase of its product. The presence of trade credit is explained by information/monitoring advantage of suppliers over banks in financing constrained

[8] See Bernanke and Gertler (1995).
[9] Kashyap and Stein (1993).

firms. Furthermore, suppliers having access to privileged information about their customers' creditworthiness and ability to exert corporate control more readily than banks are entitled to seize the firm's inputs and other assets in case of a default. This can make inputs to be considered also as collateral worthing more to the supplier who is in the same business than to the bank. In this context, trade credit can be a substitute for bank credit even for firms with sufficient debt capacity.

The survey presented by Mateut (2005) provides a detailed description of the emerging literature on the role of trade credit in corporate finance. Most theoretical works have shown that monetary tightening induces financially constraint firms to switch from bank finance to trade credit. An increasing number of surveys and empirical studies for various countries support the existing theoretical works and identify an extensive use of trade credit during periods of monetary contraction. Few studies focus on what the consequences might be for monetary policy and corporate finance if firms substitute trade credit in cases when access to other source of finance is unavailable. Findings suggest that financially constraint firms are able to continue their activities by using of trade credit as a substitute for bank loans during periods of monetary contraction. Thus the trade credit channel dampens the effects of tight monetary policy and makes the recessions following tight periods less severe.

This study is based on the theoretical background suggested by Mateut et al. (2006). The basic predictions of the model are summarized as follows; financially constraint firms are able to run their projects during monetary contraction when funding through trade credit is available. The model also suggests that if financially constraint firms are predominantly small then small firms are supposed to be affected dramatically by a monetary tightening. The ratio of trade credit to total liabilities and the ratio of trade credit to bank loans increase while the ratio of bank loans to total liabilities decrease in periods of tight monetary policy relative to looser periods. These effects are mostly observed for small firms relative to large firms and large firms are supposed to have access to bank-finance even during tight monetary policy periods. We adopt this theoretical framework and investigate the external finance choice of different firms groups and discuss its implications on the transmission of monetary policy.

We estimate the impact of change in monetary policy rate on financial choices of firms with a special emphasis on trade credit and bank loans controlling firm

specific characteristics. It is expected that the composition of firms` finance choices will alter with the monetary stance and the sensitivity to the stance changes may differentiate across business cycles. The indicator of monetary stance is measured by the overnight interest rate set by the CBRT. This framework allows us to examine to what extent firms react as monetary stance changes under tight and loose financial conditions. In this context, differentiation in the reaction of the firms' liabilities composition to the monetary stance across different firm groups can be evaluated as evidence for a broad credit channel. In addition, one can derive some information about the bank-lending channel even though there are difficulties over observing the supply side. In fact, the overall decline, for example, in the short-term bank finance to total current liabilities ratio in tight periods across firm groups with different characteristics may be taken as evidence for the bank-lending channel.

We employ panel data method to test our hypothesis where firms with different characteristics react heterogeneously to monetary policy shocks and where firm specific factors may be important for these heterogeneous reactions. Panel data methods allow us to capture firm heterogeneity over time, which is important for analysing the credit channel of monetary policy. A standard model of panel data is specified in the following form;

$$y_{it}=X_{it}\beta+\lambda_t+\alpha_i+\varepsilon_{it}, \qquad (1)$$

where i = 1,2… N refers to a cross section unit (firms in this study) and t = 1,2…T refers to time period. y_{it} and X_{it} denote dependent variable and the vector of non-stochastic explanatory variables for the firm i and year t, respectively. λ_t represents firm-invariant time-specific effects, α_i is time invariant unobservable firm specific effects and ε_{it} are the disturbance terms that vary with time and across firms. Restrictive assumptions on the nature of firm specific-effects lead to various panel data models. The nature of the data and the specification of the model are important for the selection of an estimation method. There are basically two main panel data models, namely fixed effects and random effects. We rejected the hypothesis of no systematic difference between coefficients obtained from the random effects and fixed effects models by using the Hausman test. This means that the random effects estimates are efficient but not consistent; therefore we use the method that gives

consistent results which is the fixed effects model. Only results obtained from fixed effects estimations are reported in the next section.

IV. Empirical Results

Our approach is to measure the response of firms' external finance choice to the monetary policy changes. It is expected that the composition of the credit obtained by firms will change with the monetary policy stance. Within the framework of the theoretical model adopted, we use three different measures for dependent variable; the ratio of trade credits to total liabilities (RTCTL), the ratio of trade credits to the sum of bank credits and trade credits (RMIX) and the ratio of bank credits to total liabilities (RBLTL). All estimates are complementary and serve the purpose of understanding whether trade credits and bank loans are substitutes or not over the business cycles. The empirical models for explaining above-mentioned variables are shown in equations 2,3 and 4 respectively.[10]

$$RTCTL_{it} = f\,(LEVER_{it},\ LEVER_{it}*D_j,\ LRTASSET_{it},\ LRTASSET_{it}*D_j,\ COL_{it},\ COL_{it}*D_j,\ PROFIT_{it},\ PROFIT_{it}*D_j,\ MMR_t,\ MMR_t*D_j) \quad (2)$$

$$RMIX_{it} = f\,(LRTASSET_{it},\ LRTASSET_{it}*D_j,\ COL_{it},\ COL_{it}*D_j,\ PROFITA_{it},\ PROFIT_{it}*D_j,\ MMR_t,\ MMR_t*D_j,) \quad (3)$$

$$RBLTL_{it} = f\,(LRTAASSET_{it},\ LRTASSET_{it}*D_j,\ COL_{it},\ COL_{it}*D_j,\ PROFITA_{it},\ PROFITA_{it}*D_j,\ MMR_t,\ MMR_t*D_j,) \quad (4)$$

Time period dummy D is assigned to reflect the loose monetary and financial conditions of the period of 1996-97, 2000, 2003-05. This dummy is constructed based on real interest rates that rose following the external shocks and financial crisis experienced in 1998, 2001 and 2006 and following tight conditions due to global imbalances, which ended up with the contraction or slowdown in overall economic activity. Monetary and financial conditions were comparatively tight in these years. We interact all variables in the model with the dummy variable D that take the value of 1 when the data refers to the loose period and zero for the tight period. This allows us to examine whether the choice of firms' external finance differs as monetary and financial conditions changes from a tight to a loose period.

$$D = 1 \text{ if } t = 1996\text{-}97, 2000, 2003\text{-}05$$
$$= 0 \quad \text{otherwise}$$

[10] All the variables taken in ratios are calculated as percentage.

The explanatory variables are made up of variables reflecting monetary policy rate and firm specific characteristics. The overnight interest rate is chosen as the indicator of monetary stance (MMR). The logarithm of total real assets (LRTASSET) is used to reflect the size of the firm.[11] Firm size is a proxy for the credit worthiness of a firm. The ratio of short-term bank loans to total assets (LEVER) in equation 2 is used to account for the substitution and leverage effects. The type of institutional credit most relevant to financing purchases from suppliers is short-term bank credit. The sign of the coefficient depends on whether trade credit and bank loans are substitutes or complements. The sign should be negative if they are substitutes and positive if they are complements. The amount of credit from financial institutions may also indicate financial risk. Under the credit-rationing hypothesis, firms that use relatively large amounts of bank loans are risky and may face very high interest rates for additional bank funds, which may be an incentive for the usage of trade credits. Note that the coefficient of LEVER is expected to be positive under the credit-rationing hypothesis and would be negative if trade credits are a substitute for institutional credit. The ratio of the total profit before taxes to total assets (PROFIT) reflect the structure of the balance sheet and affect the access to external finance. The firm's ability to generate cash internally decreases its demand for external finance. Thus firms with increasing profitability are expected to demand less trade credit and bank loans. The ratio of tangible assets to total assets (COL) is used to denote collateral and firms with strong collateral are expected to have easier access to bank finance.

The empirical evidence is provided for firms both in the manufacturing and non-manufacturing firms in a static panel data approach. We differentiate firms and run regressions by considering size based on employment.[12] This allows us to compare the choice of small and large firms under different regimes. The summary statistics of the variables used in regressions are reported in Tables 1 and 2. We report the number of observations, mean, standard deviation, minimum and maximum values for each variable based on firm groups according to size and export share. The mean values of RTCTL and RMIX are larger for small firms while the mean value of RBLTL is larger

[11] We convert total asset into real value using producer price index. (2003=100)

[12] The empirical results are also repeated across different firms based on asset size in both sectors and the results are similar to the ones based on employment.

for large firms in manufacturing sector. Contrary to manufacturing firms, the mean values are slightly different across different firm groups in non-manufacturing sector.

The estimation results based on fixed effects are reported in Tables 3 through 6. The first coefficient in each table report the marginal response of the dependent variable to policy rate under the tight period, while the second coefficient indicates the change in the response (relative to the tight period) during the loose period- therefore the net response in the loose period is evaluated by summing the two coefficients. The following rows in each table report the marginal responses to control variables such as asset size, profitability, collateral and leverage.[13]

The results for the manufacturing sector are reported in panel A of Tables 3-5. The empirical evidence reported in Table 3 shows that the ratio of trade credits to total liabilities increase with the policy rate in general, implying that RTCTL increases as monetary conditions tighten most probably due to few resources available for them in the banking sector, i.e. evidence of bank lending channel. The impact of monetary tightening is stronger when monetary and financial conditions are tighter –the summed coefficients of MMR and MMR*D is smaller in absolute terms than the coefficient of MMR. Consistent with financial accelerator theory, the impact of monetary policy tightening is stronger for SMEs compared to large firms. In other words, they tend to use more trade credits relative to other finance sources as monetary policy tightens. RTCTL decreases slightly for medium sized firms in loose period while it keeps rising for small firms. For large firms the coefficient of policy rate is also positive and significant but the magnitude of the coefficient is smaller and the sign is reversed in the loose period. In other words, although large firms tend to increase the demand for trade credits in tight periods, the overall impact of monetary policy tightening reduce the demand for trade credits after controlling for loose periods (the summed coefficients of MMR and MMR*D is negative). In Table 4, we observe a similar pattern for trade credit scaled by the sum of trade credit and bank loans (RMIX). The main difference here is that for large firms RMIX decrease with an increase in the policy rate even during tight period. This result implies that large firms use more bank loans relative to trade credits in tight periods and thus less likely to be financially constrained.

[13] To control time effects, estimations were run using year dummies even though the results are not reported.

The empirical results for the third regression are reported in Table 5. For the sample of all firms, the ratio of bank loans to total liabilities (RBLTL) decline with an increase in the policy rate during tight period. This evidence is apparent for small and medium-sized firms. On the contrary, RBLTL increases with the policy rate when financial and monetary conditions are tight for large firms. This implies that large firms, which are financially stronger enough, are able to satisfy the required thresholds of banks and to access to bank finance during tight periods. The distinctive response of small and large firms is consistent with the predictions of financial accelerator theory and thus confirms the credit channel of monetary policy.

The response of the dependent variables to firm specific control variables varies across firm groups. Regressions show that the firms tend to use less trade credits relative to other liabilities with profitability and assets tangibility. Firms tend to have access to bank loans, which is *special* as a tool of finance, with assets tangibility, a measure of firm collateral while they tend to use less bank finance with profitability in general. This may imply that firms tend to give up bank loans and use retained earnings in their activity as profitability increases while this relation is stronger for large and high export firms.

For all firm groups, coefficient of LEVER is negative and significant, which indicates a degree of substitution between bank loans and trade credits. We find that as the log of real assets, a proxy for firms' creditworthiness increases, and access to bank finance becomes easier. In short, firms with high profitability take up less bank loans while firms with creditworthiness and strong collateral take up more bank loans.

The models given in equation 2, 3 and 4 are estimated also for the non-manufacturing firms and the results are reported in panel B of Tables 3-5. The empirical results with respect to the response of trade credit reported in Table 3 are similar to the results for manufacturing sector. In Table 4 a similar pattern is observed for trade credit scaled by the sum of trade credit and bank loans for firms in non-manufacturing sector compared to the manufacturing sector. One striking difference is identified for large firms such that while RMIX decreases with an increase in policy rate for manufacturing firms, the opposite is valid for non-manufacturing firms. The results for bank loans provided in Table 5 are also similar to those for manufacturing firms except for large firms. RBLTL declines with an increase in the policy rate during tight periods for large non-manufacturing firms while the opposite evidence is found

for large manufacturing firms. This implies that while large firms in manufacturing are able to access bank finance in tight periods, large firms in non-manufacturing may face potential constraints in accessing bank finance. Thus not only small and medium-sized firms but also large non-manufacturing firms seem to be financially constrained in tight periods.[14]

We repeat the analysis for firm groups based on export share and report the results in Table 6. Empirical findings imply that domestic oriented firms (firms with low export share) are generally more financially constrained, as it was the case for substitute trade credits in tight periods. The evidence for export-oriented firms is different across manufacturing and non-manufacturing sectors. Estimation results show that export-oriented firms in the manufacturing have relatively easy access to bank finance during tight periods but this is not the case for non-manufacturing firms.

V. Conclusion

The balance sheets of the firms contain valuable information that enables us to assess credit channel and to know more about the monetary transmission mechanism. This paper has examined the impact of tightening of monetary and financial conditions on corporate finance in Turkey by comparing the uptake of bank loans and trade credits. The study differentiates between firms according to their size and export orientations to analyze the balance sheets channel, i.e. whether monetary policy tightening influences differently the finance choice of various firm types, and found strong evidence supporting the credit channel. The share of bank loans in small firms' balance sheets is lower than that of large firms and declines further when financial and monetary conditions tighten.

Contrary to many other countries, trade credits constitute a large portion of corporate sector's external finance in Turkey, which should have implications for monetary policymaking. In general, small firms are more likely to rely on trade credits especially during the recessions while large firms tend to use more bank loans. In

[14] However, the findings for the large firms need to be taken cautiously as the sub-sectors of non-manufacturing firms have heterogeneous structure contrary to the manufacturing sectors. For example among the liabilities item "remunerations spread over years" included in the "other" item is very high for the construction sector. Also energy, trade, construction and transportation sectors have different characteristics. Analysis of the sub-sectors in non-manufacturing sector may provide a better explanation for the large firms. The question why an average non-manufacturing firm especially large firm tends to use more non-bank debt finance needs to be answered but it is not subject matter of this study.

other words, large firms are financially less constrained and have access to bank finance during tight periods and behave as financially intermediary by extending trade credits to their financially constrained customers mainly small firms. Therefore, consistent with redistribution view in the literature, trade credits channel is expected to mute the contraction of the activity of small firms in bad times. Empirical findings for non-manufacturing firms indicate slight differences with the evidence for manufacturing firms such that large non-manufacturing firms also face with constraints in accessing bank finance in tight periods.[15] Similar evidence is observed when firms are classified based on export performance. Firms producing for the domestic market in both sectors are financially constraint during tight periods. Export oriented firms in the manufacturing sector seem to have access to bank finance even in tight periods as it is the case for large firms while opposite evidence was estimated for non-manufacturing firms.

REFERENCES

Atanasova, C.V. and N. Wilson (2001), "Borrowing Constraints and The Demand for Trade Credit: Evidence From UK Panel Data", *Credit Management Research Center*, *Leeds University Business School*, Mimeograph.

Aydın, H., C.Kaplan, M. Kesriyeli, E. Özmen and Yalçın, C., S. Yiğit (2006), " Corporate Sector Financial Structure in Turkey: A Descriptive Analysis", *Working Paper*, No:06/07, The Central Bank of the Republic of Turkey.

Berger,A. and G. Udell (1998), " The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle ", *Journal of Banking and Finance*, Vol:22 , 613-673

Bernanke, B. S. and A. S. Blinder (1988), "Credit, Money and Aggregate Demand" *American Economic Review*, Vol: 78(2), 435-39.

Bernanke, B. S., M. Gertler and S. Gilchrist (1996), "Financial Accelerator and the Flight to Quality", *The Review of Economics and Statistics*, Vol: 78(1), 1-15.

_____(1998), "The Financial Accelerator in a Quantitative Business Cycle Framework" in Taylor and Woodford, eds, *Handbook of Macroeconomics*, Vol: 1C, 1341-93 (Elsevier).

Choi, W. and Y. Kim (2005), " Trade Credit and the Effect of Macro-Financial Shocks: Evidence from US Panel Data", *Journal of Financial and Quantitative Analysis*, Vol: 40 (4), 897-925.

De Blasio, G. (2003), "Does Trade Credit Substitute Bank Credit? Evidence from Firm-Level Data", *IMF Working Paper*, No:03/166.

[15] See footnote 14.

Elliehansen, G.E. and J.D. Wolken (1993), " The Demand for Trade Credit: An Investigation of Motives for Trade Credit Use by Small Business", *Board of Governors of the Federal Reserve System*, September.

Ge, Y. and J.Qiu (2007), " Financial Development, Bank Discrimination and Trade Credit", *Journal of Banking and Finance*, Vol: 31,513-530.

Gertler, M. and S. Gilchrist (1994), "Monetary Policy, Business Cycles and the Behavior of Small Manufacturing Firms", *The Quarterly Journal of Economics* Vol: 109(2), 309-340.

Guariglia, A. and S. Mateut (2006), "Credit Channel, Trade Credit Channel and Inventory Investment: Evidence from a Panel of UK Firms", *Journal of Banking and Finance*, Vol: 30, 2835-2856.

Kashyap, A. K., J. C. Stein, and D. W. Wilcox (1993), "Monetary Policy and Credit Conditions: Evidence from the Composition of External Finance", *American Economic Review*, 83(1), 78-98.

Kashyap, A.K., O.A. Lamont and J.C.Stein (1994), "Credit Condition and the Cyclical Behavior of Inventories", *Quarterly Journal of Economics*, Vol: 109, 567-592.

Kiyotaki, N. and J. Moore (1997), "Credit Cycles", *Journal of Political Economy*, Vol: 105(2), 211-248.

Kohler, M., E. Britton and T.Yates (2000)," Trade Credit and the Monetary Transmission Mechanism", *Bank of England Working Paper Series*, No: 115.

Love, I., L. Preve, and V. Sarria-Allende (2007), "Trade Credit and Bank Credit: Evidence from Recent Financial Crises", *Journal of Financial Economics*, Vol: 83, 453-469.

Mateut, S., Bougheas, S. and P. Mizen (2006), " Trade Credit, Bank Lending and Monetary Policy Transmission", *European Economic Review*, Vol: 50, 603-629.

Mateut, S. (2005), " Trade Credit and Monetary Policy Transmission", *Journal of Economic Surveys*, Vol:19 (4),655-669.

Meltzer, A. (1960), " Mercantile Credit, Monetary Policy and the Size of Firms", *Review of Economics and Statistics*, Vol:42 (4), 429-437.

Mizen, P. and C. Yalçın (2006), " Monetary Policy, Corporate Financial Position and Real Activity", *Working Paper*, No: 06/01, The Central Bank of the Republic of Turkey.

Nilsen, J. (2002), " Trade Credit and the Bank-Lending Channel ", *Journal of Money, Credit and Banking*, Vol: 34 , 226-253.

Rajan, R. G. and L. Zingales (1995), "What Do We Know about Capital Structure? Some Evidence from International Data", *The Journal of Finance*, 50 (5), 1421-1460.

Ercan, T. (2004), "Türk Ekonomisinde Makro Kredi Kanalı: Ölçek ve Kalite Açısından Bir Değerlendirme", Mimeo, CBRT.

Valderrama, M. (2003), " The Role of Trade Credit and Bank-Lending Relationships in the Transmission Mechanism in Austria" in Angelino, I., Kashyap, A. and B. Mojon, eds. , *Monetary Policy Transmission in the Euro Area*, Cambridge University Press.

Yalçın, C., O.Y. Çulha, and P.Ö. Özlü, (2005), “Economic Growth and Financial Structure: A Firm Level Analysis”, *TÜSİAD-CBT Publication*.

Table 1: Summary Statistics of Variables Used in Regressions (Manufacturing Sector)

	RTCTL	RMIX	RBLTL	LEVER	LRTASSET	PROFIT	COL
	All Firms						
Mean	32.15	47.44	41.20	15.30	18.35	4.79	31.43
Standard Deviation	22.09	30.38	26.97	16.22	1.42	12.84	18.50
Minimum	0.00	0.00	0.00	0.00	6.96	-377.45	0.00
Maximum	100	100	100	348.63	20.91	184.18	100
Observation	51217	50930	51217	51226	51226	51226	51204
	Small Firms						
Mean	33.91	51.26	37.16	17.57	15.94	4.25	29.11
Standard Deviation	25.32	32.61	28.97	19.33	1.38	11.71	23.59
Minimum	0.00	0.00	0.00	0.00	6.96	-322.13	0.00
Maximum	100	100	100	180.70	19.49	110.56	100
Observation	18729	18474	18729	18736	18736	18736	18719
	Medium Sized Firms						
Mean	33.57	48.36	41.25	17.40	17.18	4.10	29.64
Standard Deviation	23.18	31.14	28.06	17.80	1.09	11.94	19.61
Minimum	0.00	0.00	0.00	0.00	10.09	-377.45	0.00
Maximum	100	100	100	202.21	20.10	100.13	100
Observation	22710	22684	22710	22711	22711	22711	22707
	Large Firms						
Mean	31.47	46.81	41.48	14.33	18.97	5.09	32.28
Standard Deviation	21.37	29.88	26.37	15.21	1.02	13.23	17.55
Minimum	0.00	0.00	0.00	0.00	7.16	-327.36	0.00
Maximum	100	100	100	348.63	20.91	184.18	100
Observation	9778	9772	9778	9779	9779	9779	9778
	Firms with Low Export Share in Total Sales						
Mean	35.01	55.82	34.62	10.89	17.81	3.57	31.03
Standard Deviation	25.63	34.00	29.93	14.63	1.63	15.04	19.85
Minimum	0.00	0.00	0.00	0.00	7.16	-253.73	0.00
Maximum	100	100	100	173.29	20.75	184.18	100
Observation	12812	12646	12812	12813	12813	12813	12803
	Firms with High Export Share in Total Sales						
Mean	32.29	44.69	44.12	18.74	18.45	4.44	32.21
Standard Deviation	21.57	28.54	25.47	17.58	1.40	12.32	18.01
Minimum	0.00	0.00	0.00	0.00	6.96	-327.36	0.00
Maximum	100	100	100	293.54	20.91	90.00	100
Observation	12815	12775	12815	12817	12817	12817	12813

COL: The ratio of tangible asset to total assets, LEVER: the ratio of short-term bank loans to total assets, LRTASSET: Log of firm assets in real terms, PROFIT: The ratio of profit to total assets, RTCTL: The ratio of trade credit to total liabilities, RMIX: The ratio of trade credit to the sum of trade credit and bank loans, RBLTL: The ratio of bank loans to total liabilities.

Table 2: Summary Statistics of Variables Used in Regressions (Non-Manufacturing Sector)

	RTCTL	RMIX	RBLTL	LEVER	LRTASSET	PROFIT	COL
	All Firms						
Mean	26.30	49.30	32.53	9.11	18.74	3.63	20.03
Standard Deviation	28.68	36.35	31.27	13.93	1.57	12.06	25.32
Minimum	0.00	0.00	0.00	0.00	5.67	-1212.48	0.00
Maximum	100	100	100	482.85	21.48	821.39	100
Observation	53676	51904	53676	53718	53718	53718	53502
	Small Firms						
Mean	25.07	47.55	36.85	11.07	17.92	2.88	15.36
Standard Deviation	29.12	39.86	33.79	17.40	1.95	11.90	25.35
Minimum	0.00	0.00	0.00	0.00	5.67	-708.85	0.00
Maximum	100	100	100	482.85	21.08	821.39	100
Observation	35323	33746	35323	35361	35361	35361	35169
	Medium Sized Firms						
Mean	27.30	49.89	35.08	10.60	18.36	2.56	22.42
Standard Deviation	29.00	36.36	32.65	14.79	1.40	11.48	27.50
Minimum	0.00	0.00	0.00	0.00	8.37	-1212.48	0.00
Maximum	100	100	100	330.06	20.92	162.72	100
Observation	14206	14028	14206	14208	14208	14208	14190
	Large Firms						
Mean	26.18	49.78	28.26	6.91	19.48	4.86	20.65
Standard Deviation	28.17	34.32	28.10	10.43	1.07	12.47	23.13
Minimum	0.00	0.00	0.00	0.00	9.88	-224.52	0.00
Maximum	100	100	98.09	182.99	21.48	120.35	99.10
Observation	4147	4130	4147	4149	4149	4149	4143
	Firms with Low Export Share in Total Sales						
Mean	25.16	49.52	31.71	7.98	18.81	3.53	20.52
Standard Deviation	28.40	36.97	31.39	12.44	1.63	11.81	25.30
Minimum	0.00	0.00	0.00	0.00	5.67	-1212.48	0.00
Maximum	100	100	100	482.85	21.48	821.39	100
Observation	40129	38567	40129	40164	40164	40164	40049
	Firms with High Export Share in Total Sales						
Mean	29.05	48.77	34.53	11.85	18.59	3.88	18.85
Standard Deviation	29.16	34.79	30.88	16.71	1.42	12.66	25.35
Minimum	0.00	0.00	0.00	0.00	7.81	-522.63	0.00
Maximum	100	100	100	345.63	21.31	213.76	100
Observation	13547	13337	13547	13554	13554	13554	13453

COL: The ratio of tangible asset to total assets, LEVER: the ratio of short-term bank loans to total assets, LRTASSET: Log of firm assets in real terms, PROFIT: The ratio of profit to total assets, RTCTL: The ratio of trade credit to total liabilities, RMIX: The ratio of trade credit to the sum of trade credit and bank loans, RBLTL: The ratio of bank loans to total liabilities.

Table 3: Dependent variable: Trade Credit/Total Liabilities

	Panel A: Manufacturing Sector				Panel B: Non-Manufacturing Sector			
	All	**Small**	**Medium**	**Large**	**All**	**Small**	**Medium**	**Large**
MMR	0.059***	0.067***	0.065***	0.020***	0.048***	0.052***	0.032***	0.008
	(14.76)	(8.47)	(11.40)	(2.83)	(10.57)	(8.58)	(4.23)	(0.69)
MMR*D	-0.023***	-0.019	-0.024***	-0.030**	-0.017**	-0.012	-0.034***	-0.033*
	(3.73)	(1.60)	(2.71)	(2.55)	(2.41)	(1.27)	(2.93)	(1.68)
COL	-0.097***	-0.119***	-0.085***	-0.067***	-0.043***	-0.058***	-0.016	-0.035
	(11.94)	(8.14)	(7.32)	(3.99)	(5.48)	(5.49)	(1.28)	(1.55)
COL*D	0.004	0.009	0.003	0.003	0.004	0.001	0.021**	0.026
	(0.50)	(0.62)	(0.28)	(0.16)	(0.62)	(0.07)	(2.00)	(1.38)
LEVER	-0.485***	-0.513***	-0.520***	-0.386***	-0.376***	-0.387***	-0.343***	-0.370***
	(65.63)	(36.64)	(47.59)	(28.76)	(50.05)	(41.19)	(24.56)	(12.73)
LEVER*D	-0.014	-0.003	0.004	-0.053***	-0.008	-0.019	0.004	0.072*
	(1.64)	(0.20)	(0.33)	(3.03)	(0.86)	(1.59)	(0.23)	(1.96)
LRTASSET	-0.008	2.511***	-1.215***	-3.410***	-1.252***	-0.399**	-3.398***	-4.753***
	(0.04)	(7.76)	(4.55)	(8.84)	(8.66)	(2.08)	(12.69)	(10.58)
LRTASSET*D	0.128	0.308	0.519**	-0.140	0.207**	0.372**	0.624***	0.888***
	(1.32)	(1.14)	(2.45)	(0.52)	(2.16)	(2.43)	(2.94)	(2.69)
PROFIT	-0.035***	-0.023*	-0.031***	-0.048***	0.004	-0.002	0.011	0.033*
	(4.87)	(1.79)	(2.89)	(3.52)	(0.74)	(0.26)	(1.07)	(1.73)
PROFIT*D	-0.023**	-0.030	-0.027*	-0.015	-0.007	-0.008	0.000	-0.051*
	(2.13)	(1.53)	(1.72)	(0.71)	(0.89)	(0.79)	(0.00)	(1.90)
D	-0.105	-2.888	-6.455*	4.682	-1.431	-3.384	-8.945**	-15.824**
	(0.07)	(0.72)	(1.89)	(0.97)	(0.92)	(1.43)	(2.47)	(2.57)
Constant	45.113***	8.778*	65.807***	102.430***	57.537***	46.679***	89.577***	118.913***
	(15.86)	(1.83)	(15.18)	(14.72)	(25.08)	(16.15)	(19.77)	(14.31)
Observations	51197	18713	22707	9777	53470	35140	14189	4141
Number of firms	5655	2297	2439	919	6427	4457	1552	418
R-squared	0.13	0.12	0.16	0.15	0.09	0.09	0.09	0.09

Absolute value of t statistics is given in parentheses. * Significant at 10%; ** significant at 5%; *** significant at 1%

Table 4: Dependent variable: Trade Credit/(Bank Loans + Trade Credit)

	Panel A: Manufacturing Sector				Panel B: Non-Manufacturing Sector			
	All	**Small**	**Medium**	**Large**	**All**	**Small**	**Medium**	**Large**
MMR	0.057***	0.117***	0.057***	-0.037***	0.111***	0.135***	0.073***	0.053***
	(10.78)	(11.66)	(7.59)	(3.64)	(18.85)	(17.76)	(6.74)	(2.88)
MMR*D	-0.090***	-0.102***	-0.086***	-0.078***	-0.069***	-0.072***	-0.082***	-0.024
	(11.20)	(6.83)	(7.43)	(4.70)	(7.64)	(6.20)	(4.86)	(0.82)
COL	-0.117***	-0.142***	-0.084***	-0.116***	-0.190***	-0.209***	-0.155***	-0.172***
	(11.02)	(7.62)	(5.48)	(4.87)	(18.20)	(15.31)	(8.49)	(5.02)
COL*D	0.043***	0.067***	0.024	0.038	0.003	0.003	0.013	0.005
	(4.02)	(3.63)	(1.54)	(1.60)	(0.39)	(0.29)	(0.85)	(0.17)
LRTASSET	-10.152***	-8.034***	-11.506***	-11.735***	-6.408***	-6.191***	-7.193***	-8.011***
	(43.50)	(19.26)	(32.97)	(21.03)	(32.60)	(24.61)	(18.27)	(11.41)
LRTASSET*D	0.656***	1.122***	1.282***	0.298	0.770***	0.820***	1.127***	1.606***
	(5.15)	(3.24)	(4.61)	(0.77)	(6.00)	(4.14)	(3.60)	(3.11)
PROFIT	0.186***	0.123***	0.198***	0.266***	0.098***	0.075***	0.145***	0.213***
	(20.35)	(7.58)	(14.48)	(14.82)	(13.83)	(8.79)	(10.09)	(7.45)
PROFIT*D	0.015	-0.004	0.047**	0.010	-0.023**	-0.014	-0.046**	-0.046
	(1.06)	(0.18)	(2.32)	(0.34)	(2.23)	(1.14)	(2.34)	(1.14)
D	-8.094***	-13.820***	-17.823***	-3.811	-7.893***	-8.016***	-14.040***	-26.243***
	(3.92)	(2.67)	(3.94)	(0.55)	(3.78)	(2.62)	(2.63)	(2.73)
Constant	216.038***	174.243***	238.383***	261.393***	160.037***	152.327***	178.721***	203.536***
	(57.09)	(27.82)	(41.66)	(25.90)	(50.98)	(39.75)	(26.78)	(15.65)
Observations	50919	18467	22681	9771	51742	33603	14015	4124
Number of firms	5655	2297	2439	919	6389	4422	1549	418
R-squared	0.07	0.06	0.09	0.08	0.05	0.05	0.06	0.08

Absolute value of t statistics is given in parentheses. * Significant at 10%; ** significant at 5%; *** significant at 1%

Table 5: Dependent variable: Bank Loans/Total Liabilities

	Panel A: Manufacturing Sector				Panel B: Non-Manufacturing Sector			
	All	**Small**	**Medium**	**Large**	**All**	**Small**	**Medium**	**Large**
MMR	-0.051***	-0.101***	-0.048***	0.022**	-0.088***	-0.115***	-0.051***	-0.026*
	(11.47)	(12.27)	(7.50)	(2.50)	(19.52)	(19.62)	(6.19)	(1.91)
MMR*D	0.082***	0.091***	0.085***	0.060***	0.061***	0.058***	0.069***	0.072***
	(12.08)	(7.41)	(8.65)	(4.14)	(8.84)	(6.53)	(5.37)	(3.24)
COL	0.102***	0.105***	0.081***	0.129***	0.141***	0.142***	0.125***	0.185***
	(11.44)	(6.90)	(6.19)	(6.18)	(17.90)	(13.90)	(9.02)	(7.23)
COL*D	-0.035***	-0.051***	-0.023*	-0.036*	0.001	0.002	-0.009	0.006
	(3.93)	(3.39)	(1.75)	(1.74)	(0.20)	(0.27)	(0.81)	(0.26)
LRTASSET	9.709***	8.009***	10.930***	10.849***	5.252***	5.427***	5.408***	5.439***
	(50.32)	(24.03)	(37.10)	(22.58)	(36.39)	(29.58)	(18.44)	(10.57)
LRTASSET*D	-0.515***	-1.033***	-0.713***	-0.826**	-0.500***	-0.569***	-0.936***	-0.674*
	(4.82)	(3.68)	(3.01)	(2.47)	(5.22)	(3.87)	(4.02)	(1.78)
PROFIT	-0.165***	-0.096***	-0.191***	-0.235***	-0.067***	-0.049***	-0.112***	-0.154***
	(21.50)	(7.28)	(16.31)	(15.04)	(12.90)	(7.91)	(10.44)	(7.25)
PROFIT*D	-0.018	-0.010	-0.034*	-0.024	0.015**	0.007	0.041***	0.024
	(1.54)	(0.50)	(1.95)	(0.95)	(1.99)	(0.75)	(2.80)	(0.81)
D	5.605***	12.202***	8.353**	13.617**	3.816**	4.530**	11.054***	8.246
	(3.24)	(2.91)	(2.17)	(2.26)	(2.44)	(1.99)	(2.78)	(1.17)
Constant	-119.081***	-84.463***	-138.959***	-156.279***	-54.525***	-52.237***	-63.114***	-74.872***
	(38.09)	(16.91)	(28.77)	(17.99)	(23.74)	(18.76)	(12.70)	(7.85)
Observations	51197	18713	22707	9777	53470	35140	14189	4141
Number of firms	5655	2297	2439	919	6427	4457	1552	418
R-squared	0.09	0.07	0.11	0.10	0.06	0.06	0.06	0.07

Absolute value of t statistics is given in parentheses. * Significant at 10%; ** significant at 5%; *** significant at 1%

Table 6: External Finance Choice of Firms across Different Groups Based on Export Share

Dependent variable	Panel A:Trade Credit/Total Liabilities				Panel B: Trade Credit/(Bank Loans + Trade Credit)				Panel C: Bank Loans/Total Liabilities			
	Manufacturing		Non-Manufacturing		Manufacturing		Non-Manufacturing		Manufacturing		Non-Manufacturing	
	Low Export	High Export	Low Export	High Export	Low Export	High Export	Low Export	High Export	Low Export	High Export	Low Export	High Export
MMR	0.072***	0.034***	0.046***	0.049***	0.133***	-0.031***	0.148***	0.018	-0.110***	0.023***	-0.120***	-0.006
	(7.50)	(4.85)	(8.70)	(5.63)	(11.17)	(3.28)	(21.54)	(1.59)	(11.66)	(2.72)	(23.60)	(0.60)
MMR*D	-0.013	-0.032***	-0.007	-0.040***	-0.116***	-0.094***	-0.070***	-0.072***	0.097***	0.092***	0.061***	0.066***
	(0.95)	(2.89)	(0.90)	(2.89)	(6.71)	(6.30)	(6.65)	(4.02)	(7.00)	(6.80)	(7.90)	(4.44)
COL	-0.076***	-0.124***	-0.035***	-0.061***	-0.187***	-0.055***	-0.217***	-0.104***	0.154***	0.046**	0.157***	0.082***
	(4.32)	(8.28)	(3.74)	(4.16)	(8.51)	(2.69)	(17.52)	(5.34)	(8.86)	(2.50)	(17.34)	(5.17)
COL*D	-0.024	0.004	0.001	0.008	0.029	0.065***	-0.003	0.024	-0.022	-0.054***	0.011	-0.031**
	(1.38)	(0.26)	(0.17)	(0.61)	(1.34)	(3.16)	(0.29)	(1.41)	(1.26)	(2.94)	(1.53)	(2.17)
LEVER	-0.566***	-0.471***	-0.394***	-0.351***								
	(28.06)	(40.11)	(41.17)	(28.17)								
LEVER*D	0.010	-0.003	0.018	-0.042***								
	(0.40)	(0.20)	(1.48)	(2.73)								
LRTASSET	1.097***	-0.061	-1.263***	-1.127***	-8.155***	-9.353***	-5.557***	-8.645***	8.122***	9.396***	4.506***	7.320***
	(2.79)	(0.19)	(7.49)	(3.95)	(16.56)	(21.07)	(24.33)	(22.18)	(21.20)	(24.00)	(27.79)	(23.51)
LRTASSET*D	0.148	0.385**	0.169	0.405**	0.735**	0.742***	0.741***	0.955***	-0.649***	-0.365	-0.511***	-0.579***
	(0.64)	(2.08)	(1.51)	(2.11)	(2.54)	(2.90)	(4.97)	(3.69)	(2.84)	(1.59)	(4.73)	(2.75)
PROFIT	-0.030*	-0.046***	-0.002	0.019*	0.147***	0.213***	0.075***	0.165***	-0.113***	-0.201***	-0.048***	-0.129***
	(1.87)	(3.42)	(0.31)	(1.76)	(7.54)	(11.98)	(9.23)	(11.60)	(7.35)	(12.74)	(8.42)	(10.96)
PROFIT*D	-0.045**	-0.006	0.003	-0.042**	0.005	-0.017	-0.013	-0.046**	-0.023	0.007	0.006	0.041**
	(1.97)	(0.29)	(0.36)	(2.53)	(0.18)	(0.60)	(1.10)	(2.10)	(1.03)	(0.29)	(0.79)	(2.29)
D	0.043	-5.076*	-1.454	-3.137	-5.899	-12.095***	-6.644***	-12.990***	5.390	5.309	3.078*	7.509**
	(0.01)	(1.70)	(0.80)	(1.00)	(1.31)	(2.91)	(2.74)	(3.07)	(1.51)	(1.42)	(1.75)	(2.18)
Constant	28.653***	49.142***	57.555***	56.172***	184.996***	201.087***	147.564***	193.018***	-94.9***	-110.5***	-43.825***	-84.276***
	(4.73)	(9.46)	(21.56)	(12.26)	(24.18)	(27.59)	(40.55)	(30.74)	(15.98)	(17.21)	(17.03)	(16.83)
Observations	12802	12811	40021	13449	12641	12774	38492	13250	12802	12811	40021	13449
Number of firms	1557	1384	4886	1541	1557	1384	4851	1538	1557	1384	4886	1541
R-squared	0.11	0.18	0.08	0.11	0.07	0.06	0.06	0.06	0.09	0.07	0.06	0.06

Absolute value of t statistics is given in parentheses. * Significant at 10%; ** significant at 5%; *** significant at 1%

Appendix

Table A: The Composition of Firm Liabilities across Different Firm Groups in Manufacturing Sector.[16]

	96-08	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	Total Manufacturing Sector													
Current Liabilities	40.8	48.0	48.4	46.9	49.9	49.9	52.5	47.7	43.6	37.3	38.1	38.8	37.2	40.3
Short Term Loans	15.8	17.7	20.0	19.8	21.4	20.0	20.4	17.0	15.6	13.2	14.4	15.2	14.4	17.4
Short Term Bank Loans	15.3	17.5	19.7	19.5	20.8	19.3	20.0	16.6	15.2	12.7	13.9	14.6	13.9	16.6
Short Term Trade Credits	15.5	17.0	16.2	15.7	17.8	17.5	18.5	17.9	17.0	15.4	15.3	15.2	14.4	14.3
Short Term Other Debt	2.8	3.1	2.8	3.1	3.0	3.8	4.3	4.1	3.4	3.1	2.6	2.2	2.1	2.4
Other	6.7	9.9	9.3	8.4	7.7	8.1	9.3	8.7	7.6	5.6	5.8	6.3	6.3	6.2
Long Term Debt	13.6	12.0	13.9	14.2	14.6	13.8	16.7	15.7	13.8	11.3	12.1	13.0	12.9	15.5
Shareholder Equity	45.6	40.3	37.7	38.9	35.4	36.8	30.8	36.6	42.6	51.4	49.7	48.1	49.9	44.2
Number of Observations	**51226**	**3393**	**3426**	**3527**	**3839**	**4118**	**4125**	**4521**	**4311**	**4575**	**4398**	**3959**	**3779**	**3255**
	Small Firms													
Current Liabilities	49.8	57.9	62.3	55.9	57.2	58.2	57.5	54.2	52.3	46.9	49.2	50.2	49.3	44.5
Short Term Loans	17.9	18.1	22.1	18.6	17.0	17.8	15.2	17.1	15.5	14.6	17.0	19.5	20.8	18.8
Short Term Bank Loans	17.6	17.9	21.9	18.5	16.8	17.4	14.8	16.9	15.3	14.3	16.7	19.1	20.4	18.5
Short Term Trade Credits	18.2	24.4	25.4	23.1	24.9	25.1	24.3	21.2	19.9	17.4	18.0	17.1	16.6	15.6
Short Term Other Debt	6.6	7.5	6.4	6.8	8.0	8.1	9.6	8.0	9.6	8.1	6.4	5.9	5.3	4.2
Other	7.1	8.0	8.4	7.4	7.3	7.3	8.4	7.9	7.3	6.8	7.7	7.8	6.6	5.9
Long Term Debt	9.3	6.8	8.8	10.0	10.7	9.4	12.6	11.5	9.6	7.5	8.0	8.8	8.7	11.2
Shareholder Equity	40.9	35.3	28.8	34.1	32.1	32.4	29.9	34.4	38.1	45.7	42.9	41.0	41.9	44.3
Number of Observations	**18736**	**1235**	**1230**	**1265**	**1473**	**1609**	**1565**	**1791**	**1653**	**1660**	**1601**	**1352**	**1276**	**1026**
	Medium Firms													
Current Liabilities	45.0	53.0	53.8	50.8	51.4	49.9	52.2	48.7	46.8	42.2	43.6	44.5	41.9	45.6
Short Term Loans	18.0	20.1	22.3	20.8	19.4	18.0	18.4	17.3	17.7	15.2	17.0	18.0	17.4	20.8
Short Term Bank Loans	17.4	20.0	22.1	20.6	19.2	17.6	18.1	17.1	17.5	14.7	16.3	17.4	16.8	19.7
Short Term Trade Credits	17.1	19.8	19.7	17.8	20.2	20.0	21.1	19.7	18.8	17.2	17.1	17.2	15.7	15.2
Short Term Other Debt	3.2	4.2	3.8	3.9	4.2	4.6	5.2	4.4	3.9	3.6	3.1	2.6	2.4	2.5
Other	6.8	8.9	8.0	8.4	7.6	7.3	7.6	7.3	6.5	6.2	6.4	6.7	6.4	7.2
Long Term Debt	12.0	10.5	12.5	12.0	14.1	12.9	14.5	12.6	11.3	9.8	10.4	11.4	12.4	13.7
Shareholder Equity	43.0	36.5	33.7	37.2	34.4	37.2	33.3	38.7	41.9	48.0	46.1	44.1	45.7	40.7
Number of Observations	**22711**	**1491**	**1521**	**1574**	**1666**	**1777**	**1810**	**1960**	**1891**	**2060**	**1967**	**1794**	**1714**	**1486**
	Large Firms													
Current Liabilities	38.5	45.2	45.7	45.0	48.9	48.6	52.3	46.9	41.8	34.7	35.2	35.8	34.4	38.0
Short Term Loans	14.9	16.8	19.1	19.5	22.4	20.8	21.4	16.9	14.8	12.3	13.3	13.7	12.8	15.9
Short Term Bank Loans	14.3	16.6	18.8	19.1	21.6	20.1	21.0	16.3	14.3	11.8	12.7	13.2	12.3	15.3
Short Term Trade Credits	14.7	15.6	14.5	14.4	16.4	16.1	17.3	17.0	16.1	14.6	14.4	14.3	13.7	13.9
Short Term Other Debt	2.3	2.4	2.3	2.5	2.3	3.2	3.6	3.7	2.8	2.5	2.1	1.7	1.7	2.2
Other	6.6	10.4	9.8	8.4	7.8	8.4	10.0	9.3	8.0	5.3	5.4	6.0	6.2	5.9
Long Term Debt	14.6	12.9	14.7	15.2	15.1	14.4	17.7	17.1	15.0	12.2	13.2	14.0	13.5	16.5
Shareholder Equity	46.9	41.9	39.6	39.8	36.0	37.0	30.0	36.0	43.2	53.1	51.7	50.3	52.2	45.5
Number of Observations	**9779**	**667**	**675**	**688**	**700**	**732**	**750**	**770**	**767**	**855**	**830**	**813**	**789**	**743**

Source: Central Bank of Turkey, Sectoral Balance Sheets data set.

[16] Percentages share in total balance sheet.

Table B: The Composition of Firm Liabilities Across Different Firm Groups in Non- Manufacturing Sector.[17]

	96-08	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	Total Non-Manufacturing Sector													
Current Liabilities	46.4	60.2	60.4	58.8	60.6	58.6	58.2	54.5	52.2	46.5	45.9	44.2	42.6	41.0
Short Term Loans	9.5	13.6	13.1	13.2	13.8	12.4	13.4	10.8	9.7	7.2	8.4	9.5	9.1	9.4
Short Term Bank Loans	9.1	13.5	12.8	13.0	13.6	12.2	12.9	10.5	9.5	7.0	8.2	9.1	8.4	9.1
Short Term Trade Credits	16.2	21.6	21.7	20.4	21.3	22.2	22.0	21.1	20.7	15.3	15.9	15.5	14.1	13.5
Short Term Other Debt	4.0	5.1	5.3	4.9	6.2	5.5	6.5	5.7	5.0	3.2	3.7	3.5	3.5	3.5
Other	16.8	19.8	20.4	20.3	19.1	18.5	16.2	16.8	16.7	20.9	17.9	15.7	15.9	14.7
Long Term Debt	15.2	13.2	14.7	15.5	16.4	15.5	20.4	19.3	15.8	11.3	12.5	14.6	14.3	17.8
Shareholder Equity	38.4	26.6	24.9	25.6	23.0	25.9	21.4	26.2	32.0	42.2	41.6	41.2	43.1	41.2
Number of Observations	**53718**	**3717**	**3815**	**3949**	**4349**	**4616**	**4528**	**4949**	**4507**	**4525**	**4399**	**3780**	**3571**	**3013**
	Small Firms													
Current Liabilities	40.4	62.4	59.9	54.8	55.7	54.0	55.2	52.9	49.4	37.6	36.7	38.3	36.4	33.2
Short Term Loans	11.3	17.8	17.1	14.8	16.6	15.6	15.3	11.9	11.7	8.7	10.3	11.8	11.3	10.2
Short Term Bank Loans	11.1	17.4	16.5	14.3	16.3	15.6	15.2	11.8	11.5	8.6	10.1	11.5	11.1	10.0
Short Term Trade Credits	15.2	25.2	24.2	21.1	19.0	19.6	18.9	20.2	20.2	15.1	14.1	14.0	13.2	12.6
Short Term Other Debt	6.5	8.0	8.1	8.0	8.5	8.5	11.2	11.5	8.9	5.8	5.7	5.4	5.3	5.1
Other	7.4	11.4	10.5	10.9	11.5	10.2	9.8	9.3	8.5	8.0	6.7	7.2	6.6	5.3
Long Term Debt	13.7	10.6	11.3	13.3	14.2	15.2	22.0	21.8	17.7	11.0	12.7	12.4	10.5	13.2
Shareholder Equity	46.0	27.0	28.8	31.9	30.1	30.8	22.8	25.4	32.9	51.4	50.6	49.3	53.0	53.6
Number of Observations	**35361**	**2539**	**2615**	**2676**	**2977**	**3123**	**3015**	**3313**	**2972**	**2967**	**2874**	**2334**	**2187**	**1769**
	Medium Firms													
Current Liabilities	50.9	64.5	65.0	64.3	65.4	64.6	62.8	58.6	56.2	50.8	51.0	49.7	46.2	44.5
Short Term Loans	11.0	15.7	15.3	14.7	15.9	14.3	14.4	12.8	11.1	8.3	8.6	11.3	10.6	11.6
Short Term Bank Loans	10.6	15.6	15.2	14.6	15.5	14.1	14.0	12.7	10.6	8.1	8.3	11.1	10.0	11.1
Short Term Trade Credits	18.1	26.1	24.7	26.3	27.0	26.2	27.4	24.9	23.2	16.8	18.4	17.4	14.7	13.3
Short Term Other Debt	3.6	5.5	6.5	4.9	4.9	5.1	4.9	4.2	4.3	2.7	3.3	3.2	3.5	3.3
Other	18.4	17.4	18.5	18.4	17.6	19.1	16.2	16.7	17.6	22.9	20.7	17.7	17.5	16.4
Long Term Debt	15.2	11.0	12.8	13.7	15.0	12.9	17.2	16.6	14.1	10.3	11.5	14.6	16.1	20.3
Shareholder Equity	33.9	24.5	22.2	22.0	19.6	22.5	20.0	24.8	29.7	38.9	37.5	35.7	37.7	35.2
Number of Observations	**14208**	**923**	**941**	**1003**	**1086**	**1170**	**1174**	**1273**	**1185**	**1205**	**1173**	**1100**	**1049**	**926**
	Large Firms													
Current Liabilities	46.2	54.8	56.6	56.6	59.5	56.0	55.9	52.0	50.5	48.3	47.1	43.0	42.8	42.2
Short Term Loans	7.3	8.9	8.4	10.8	10.2	8.6	11.4	8.5	7.5	5.4	7.3	6.9	6.9	7.5
Short Term Bank Loans	6.9	8.8	8.3	10.7	10.2	8.3	10.6	7.8	7.4	5.1	7.2	6.4	6.0	7.2
Short Term Trade Credits	15.3	15.1	17.3	14.6	17.8	20.2	19.3	18.5	18.9	14.2	14.9	14.9	14.1	14.0
Short Term Other Debt	2.9	2.7	2.3	2.7	6.0	3.9	4.9	3.5	3.3	2.1	3.0	2.8	2.6	2.9
Other	20.6	28.1	28.6	28.5	25.4	23.4	20.4	21.5	20.8	26.5	21.9	18.5	19.2	17.8
Long Term Debt	16.0	17.1	18.7	18.6	19.2	18.2	22.2	20.0	16.1	12.2	13.1	15.7	14.8	18.2
Shareholder Equity	37.8	28.1	24.6	24.8	21.4	25.8	21.9	28.0	33.5	39.5	39.8	41.4	42.4	39.6
Number of Observations	**4149**	**255**	**259**	**270**	**286**	**323**	**339**	**363**	**350**	**353**	**352**	**346**	**335**	**318**

Source: Central Bank of Turkey, Sectoral Balance Sheets data set

[17] Percentages share in total balance sheet.

Table C: The Composition of Firm Liabilities Across Different Firm Groups based on Export Share.[18]

	96-08	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
	Total Manufacturing Sector													
	Firms with Low Export Share													
Current Liabilities	40.9	46.8	44.9	43.7	49.2	51.0	57.2	56.0	51.0	35.2	37.5	37.6	36.2	37.1
Short Term Loans	11.3	10.5	13.4	13.0	14.6	14.0	13.7	11.3	9.9	7.7	8.5	12.6	11.2	14.1
Short Term Bank Loans	10.9	9.9	13.1	12.7	14.4	13.6	13.4	11.1	9.7	7.4	8.2	12.1	10.7	13.2
Short Term Trade Credits	16.8	21.1	18.9	16.9	21.1	20.1	20.7	19.5	18.5	16.0	17.9	16.2	15.7	14.1
Short Term Other Debt	5.0	4.1	3.2	3.5	3.8	6.4	8.4	8.8	6.5	6.4	5.7	3.3	3.8	3.0
Other	7.8	11.2	9.4	10.3	9.7	10.5	14.4	16.4	16.1	5.0	5.4	5.5	5.6	5.9
Long Term Debt	14.2	13.8	15.9	15.8	16.2	17.1	19.0	13.8	12.5	11.4	12.3	14.9	13.9	16.2
Shareholder Equity	44.9	39.4	39.2	40.5	34.6	32.0	23.8	30.2	36.5	53.5	50.2	47.5	49.8	46.7
Number of Observations	**12813**	**897**	**892**	**910**	**1042**	**1089**	**1042**	**1135**	**1045**	**1125**	**1088**	**942**	**883**	**723**
	Firms with High Export Share													
Current Liabilities	44.4	53.4	54.8	53.0	55.2	54.8	57.3	51.6	46.8	42.1	42.3	40.9	39.8	43.2
Short Term Loans	19.1	25.4	28.3	26.8	28.4	26.4	25.9	21.9	19.7	16.9	18.2	16.9	16.9	18.8
Short Term Bank Loans	18.7	25.3	27.9	26.4	27.8	26.1	25.6	21.6	19.5	16.6	17.6	16.7	16.7	18.2
Short Term Trade Credits	16.8	15.6	15.3	14.5	16.6	18.2	19.8	19.6	18.5	17.6	16.5	16.3	15.2	15.6
Short Term Other Debt	2.3	2.9	2.7	3.3	3.1	3.5	3.2	2.8	2.7	2.5	2.0	1.7	1.7	2.3
Other	6.2	9.5	8.5	8.5	7.1	6.7	8.4	7.3	5.9	5.1	5.6	6.0	6.0	6.5
Long Term Debt	13.5	10.9	12.3	12.9	13.2	12.7	14.8	14.6	14.1	11.7	12.6	13.1	13.3	15.3
Shareholder Equity	42.1	35.7	32.9	34.1	31.6	32.5	27.9	33.8	39.0	46.2	45.2	46.0	46.9	41.5
Number of Observations	**12817**	**847**	**861**	**882**	**931**	**1007**	**1031**	**1144**	**1106**	**1151**	**1098**	**985**	**945**	**829**
	Total Non-Manufacturing Sector													
	Firms with Low Export Share													
Current Liabilities	45.5	57.2	58.6	57.8	58.2	57.2	56.5	52.8	50.8	46.5	45.6	43.4	42.3	40.4
Short Term Loans	8.4	7.9	7.8	8.9	10.3	9.4	11.6	9.1	8.2	6.2	7.3	8.6	8.6	8.8
Short Term Bank Loans	8.0	7.6	7.4	8.7	10.2	9.2	11.0	8.6	7.9	6.0	7.2	8.3	7.9	8.5
Short Term Trade Credits	15.2	19.8	21.6	20.1	20.5	22.1	20.1	19.4	19.3	14.1	15.1	14.4	13.5	12.9
Short Term Other Debt	3.9	6.5	6.5	5.6	5.9	5.4	6.5	6.0	5.3	3.5	4.0	3.5	3.2	3.2
Other	18.1	23.1	22.7	23.3	21.5	20.3	18.2	18.4	17.9	22.7	19.2	16.8	16.9	15.5
Long Term Debt	15.7	12.4	14.5	14.9	16.8	15.1	20.5	20.1	16.4	11.3	12.9	15.4	14.9	18.6
Shareholder Equity	38.8	30.4	26.9	27.2	25.0	27.6	23.0	27.1	32.8	42.2	41.5	41.2	42.8	41.0
Number of Observations	**40164**	**2801**	**2894**	**2974**	**3283**	**3483**	**3384**	**3685**	**3363**	**3378**	**3282**	**2801**	**2629**	**2207**
	Firms with High Export Share													
Current Liabilities	48.6	64.4	63.0	60.5	64.8	61.5	61.3	58.0	55.2	46.6	46.8	46.2	43.4	42.8
Short Term Loans	12.1	21.5	20.8	20.3	20.1	18.6	16.9	14.5	13.1	9.5	11.1	11.6	10.3	11.1
Short Term Bank Loans	11.9	21.5	20.6	20.1	19.7	18.5	16.5	14.4	12.9	9.2	10.9	11.4	10.0	10.8
Short Term Trade Credits	18.7	24.1	21.8	21.0	22.8	22.4	25.6	24.8	23.7	18.2	17.9	18.2	15.8	15.0
Short Term Other Debt	4.1	3.3	3.5	3.7	6.8	5.7	6.3	5.2	4.4	2.6	3.2	3.5	4.1	4.3
Other	13.7	15.4	16.9	15.5	15.1	14.7	12.4	13.5	14.0	16.3	14.6	12.8	13.2	12.4
Long Term Debt	13.9	14.3	15.1	16.4	15.7	16.3	20.3	17.5	14.4	11.3	11.5	12.4	12.7	15.4
Shareholder Equity	37.5	21.4	21.9	23.0	19.4	22.3	18.4	24.5	30.4	42.1	41.8	41.3	44.0	41.7
Number of Observations	**13554**	**916**	**921**	**975**	**1066**	**1133**	**1144**	**1264**	**1144**	**1147**	**1117**	**979**	**942**	**806**

Source: Central Bank of Turkey, Sectoral Balance Sheets data set

[18] Percentages share in total balance sheet.

Central Bank of the Republic of Turkey

Recent Working Papers

The complete list of Working Paper series can be found at Bank's website (http://www.tcmb.gov.tr).

Economic Uncertainty and Money Demand Stability in Turkey
(K. Azim Özdemir, Mesut Saygılı Working Paper No. 10/15, August 2010)

Effects of Monetary Unions on Inequalities
(Timur Hülagü, Devrim Ikizler Working Paper No. 10/14, August 2010)

Understanding Sectoral Growth Cycles and the Impact of Monetary Policy in the Turkish Manufacturing Industry
(Saygın Şahinöz, Evren Erdoğan Coşar Working Paper No. 10/13, July 2010)

Türkiye İçin Yeni Reel Efektif Döviz Kuru Endeksleri
(Hülya Saygılı, Mesut Saygılı, Gökhan Yılmaz Çalışma Tebliğ No. 10/12, Temmuz 2010)

Türkiye'de Piyasa Göstergelerinden Para Politikası Beklentilerinin Ölçülmesi
(Harun Alp, Hakan Kara, Gürsu Keleş, Refet Gürkaynak Musa Orak Çalışma Tebliğ No. 10/11, Haziran 2010)

Organization of Innovation and Capital Markets
(Cüneyt Orman Working Paper No. 10/10, May 2010)

Welfare Gains from Disinflation in an Economy With Currency Substitution
(H. Murat Özbilgin Working Paper No. 10/09, May 2010)

Interest Rates and Real Business Cycles in Emerging Markets
(S. Tolga Tiryaki Working Paper No. 10/08, May 2010)

Employment and Output Dynamics in a Model with Social Interactions in Labor Supply
(Yusuf Soner Başkaya, Mustafa Kılınç Working Paper No. 10/07, May 2010)

Regulation and the Market for Checks
(Semih Tümen Working Paper No. 10/06, March 2010)

On the Sources of Oil Price Fluctuations
(Deren Ünalmış, İbrahim Ünalmış, D. Filiz Ünsal Working Paper No. 10/05, March 2010)

Optimal Monetary Policy under Sectoral Heterogeneity in Inflation Persistence
(Sevim Kösem Alp Working Paper No. 10/04, March 2010)

Recovering Risk-Neutral Densities from Exchange Rate Options: Evidence in Turkey
(Halil İbrahim Aydın, Ahmet Değerli, Pınar Özlü Working Paper No. 10/03, March 2010)

Türkiye İmalat Sanayiin İthalat Yapısı
(Şeref Saygılı, Cengiz Cihan, Cihan Yalçın, Türknur Hamsici Çalışma Tebliğ No. 10/02, Mart 2010)

Dış Ticarette Küresel Eğilimler ve Türkiye Ekonomisi
(Faruk Aydın, Hülya Saygılı, Mesut Saygılı, Gökhan Yılmaz Çalışma Tebliğ No. 10/01, Mart 2010)

Dayanıklı Tüketim Malı Fiyat Dinamikleri
(Fethi Öğünç Çalışma Tebliğ No. 09/08, Aralık 2009)