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Finance, Instability, Debt and Growth: The Turkish Case, 1980-2010

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Abstract

Empirical results on the link between financial development and economic growth is mixed in Turkey. However, existing studies did not take into account the fact that Turkey has experienced endemic political and economic instabilities over extended periods. As a consequence of such instabilities, Turkish economy has shown frequent growth accelerations and collapses. Moreover, Turkish banking sector preferred to finance public borrowing rather than lending to the private sector due to the prevalence of high real interest rates on government bonds particularly during the 1990s. This study, therefore, aims to analyze the role of overall macroeconomic instability and public borrowing on finance-growth nexus in Turkey by using time series econometric techniques over the 1980-2010 period. After taking into account the effects of overall instability and public borrowing, we found a significant finance-growth link.

Keywords: Financial Development, Public Debt, Macroeconomic Instability, Growth, Turkey

JEL classification: E10, E44, E20, O40

1. INTRODUCTION

Following the emergence of endogenous growth models, the link between financial development and economic growth has been heavily investigated in both developed and developing countries (see for example King and Levine, 1993; Demetriades and Hussein, 1996; Levine and Zervos, 1998; Beck, Levine and Loayza, 2000; Levine, Loayza and Beck, 2000; Beck and Levine, 2004; Ang and McKibbin, 2007). Cross-country studies generally find that financially-developed countries have higher growth rates.[1] Moreover, microeconomic studies state that well-functioning financial systems contribute to growth by helping firms to have easy access to external finance opportunities through financial institutions (Rajan and Zingales, 1998; Demirgüç-Kunt and Maksimovic, 1998). On the other hand, cross-country studies do not seem to agree on whether financial development lead to growth (supply leading view), or growth leads to financial development (demand following view). However, single-country studies usually find that the link is from financial development to growth.

Studies on Turkey mainly focus on the direction of such causality. Kar and Pentecost (2000), for example, by utilizing Granger causality test –one which uses vector error correction– found that economic growth appeared to affect financial development for the 1963-1995 period. In contrast, Ünalmış (2002) found evidence for the 1970-2001 period that supports supply leading view for the short-run and bi-directional influences in the long-run. In another study, Aslan and Küçükaksoy (2006) present evidence for the supply leading view using data for the 1970-2004 period. Additionally, by using cointegration analyses for the period 1968-2005, Halıcıoğlu (2007) states that financial development leads to economic growth both in short and long-run. Finally, Soytaş and Küçükkaya (2011) have used Toda-Yamamato's procedure to test the Granger causality as well as impulse response analysis, and found no causality in either direction with quarterly data for the period 1991-2005.

Thus, the evidence on the link between the financial development and economic growth for the Turkish economy is ambiguous. Since Turkey is a peculiar country in many ways –as will be explained below– we add some control variables which represents the unique characteristics of Turkey and this, in turn, allows us to better understand the growth-finance nexus, rather than solely analyzing the (Granger) causality between two variables. First of all, Turkey has gone through severe political and economic instabilities over extended periods. Fischer (1993) states that uncertainty resulting from macroeconomic instability decreases both the rate of private investments and the level of productivity, thus affecting economic growth. Secondly, the Turkish banking system prefers to finance public borrowing as opposed to lending to the private sector –particularly during the 1990s– due to the prevalence of high real interest rates on government bonds. Hauner (2009) finds that higher public debt holding by

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[1] For an excellent survey of the literature see Levine (2003).

banks leads to higher profits, but decreases efficiency and, thereby, slows down financial development. He called this "lazy banks" view. By developing a theoretical model, Ismihan and Ozkan (2012) have shown that, in countries where the government is the major recipient of bank lending, excessive public borrowing worsens the financial development via creating "laziness" in the banking sector and this, in turn, has detrimental effects on macroeconomic performance. To sum up, the presence of macroeconomic instability and the lazy bank phenomenon in Turkey[2] could possibly lead to a fall in the level of financial development, thus causing the finance-growth relationship to become empirically fragile.

The aim of this paper is to investigate the finance-growth nexus by controlling for the impact of macroeconomic instabilities and public borrowing in Turkey. In other words, we attempt to extend the existing literature by taking into account the role of macroeconomic instability as well as public borrowing. To accomplish this, we estimate long-run (cointegration) relationship between per capita income, overall macroeconomic instability, credit to private sector-to-GDP ratio[3] and domestic debt-to-GDP ratio by using Johansen technique over the 1980-2010 period. Additionally, an analysis of dynamic effects is carried out using impulse response analysis.

The main findings of the study are as follows: Over the long-run, macroeconomic instability harms financial development, banks act as lazy banks and economic growth has a positive effect on financial development. Moreover, generalized impulse response analyses state that the growth-financial development relationship is bi-directional and permanent in the short as well as medium-run.

The rest of the study is organized as follows. Section 2 gives a brief and selective account of economic and financial developments in the Turkish economy for the period under study. Section 3 introduces the data and model, and subsequently discusses the results. Finally, the last section concludes the paper.

2. THE TURKISH ECONOMY, 1980-2010: A CONDENSED OVERVIEW

In 1980, outward-oriented liberal policies were adopted in Turkey. In light of these policies, important reforms were made in the financial markets. Although the macroeconomic performance was quite satisfactory during the early and mid-1980s, the implementation of the

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[2] Bastı and Köksal (2011), by using banking data, found that public debt has unfavorable effects on the financial development in Turkey. It should be noted that, in their study, financial development is proxied by efficiency and profitability of banks.

[3] Some other variables, such as M2 to GDP ratio and deposit to GDP ratio, have been used in the literature to represent financial development. Here, we use credit to private sector to GDP ratio as an indicator of financial development since it shows the extent of financial intermediation. According to the McKinnon/Shaw model and endogenous growth literature, financial intermediation, e.g. measured by credit to private sector, is the key determinant of economic growth.

reforms with inadequate regulation and supervision of the financial system brought about problems in the banking sector as well as in the industrial sector in the early 1980s (Aşıkoğlu, 1995).[4] During the late 1980s, the political instability, populist and myopic policies of the governments, and associated problems of public sector imbalances led to a high and persistent macroeconomic instability (Ismihan et al., 2005). Over this period, the outlook of the banking sector was better in terms of regulatory and supervisory aspects.

During the 1990s, macroeconomic instability was an endemic characteristic of the Turkish economy (Ismihan, 2013). From the late 1980s to the end of 1993, with the help of capital inflows, the Turkish governments continued to follow the populist and myopic policies through reliance on domestic borrowing. The need for high borrowing by the successive Turkish governments lead to a significant increase in interest rates on domestic debt which further deteriorated the fiscal balances. Consequently, "Turkey experienced a severe financial crisis in early 1994, mainly due to unsustainable fiscal balances, the collapse of the domestic debt market, monetization, and expectations of further monetization." (Ismihan, 2009: p.100)

During the 1990s, the banking sector was the primary buyer of domestic debt instruments in a shallow market.[5] The average share of this sector in total domestic debt was %83.47 over 1990-1999 period.[6] As a result of the government's increased demand for domestic borrowing, the real interest rate almost doubled from 1990 to 1999.

As a consequence of rapidly rising real interest rates on domestic debt, the banking sector shifted the lending of funds from the private sector to the government.[7] The share of the government domestic debt instruments in total assets of the deposit banks rose to %23 in 1999 compared to %10 in 1990, and the share of the credits to the private sector in total assets fell to %24 in 1999 compared to %36 in 1990 (Central Bank of The Republic of Turkey, [CBRT], n.d.).

At the end of 1999, Turkey adopted a disinflation program based on the foreign exchange anchor with the primary aim of reducing inflation and normalizing the public sector balances. One of the most important structural reforms of this program was the establishment of the Banking Regulatory and Supervisory Authority (BRSA), which is an independent authority that regulates, supervises, and monitors the banking sector –the sector that was weakly regulated and supervised during the 1990s.

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[4] For instance, six banks went bankrupt in 1983-1984 period (see Önder and Özyıldırım, 2008).

[5] The arbitrage opportunity generated by high real interest rates led the banks to lend to governments via creating open foreign exchange positions.

[6] Calculated from the data provided on the web-page of the Prime Ministry Undersecretariat of Treasury, Turkey.

[7] It should be noted that the attractiveness of the government debt instruments are related to factors such as high liquidity, zero risk, no-provision requirements, low tax rates, and a profitable gap between interest rates and change in exchange rates (Aydın, 2002).

Although the program seemed to work well at the beginning of 2000, the widening current account deficit, structural deficiencies of the program, and loss of confidence in the implementation resulted in twin crises in November 2000 and February 2001. The banking sector which had high sensitivity to liquidity, interest and exchange rate risks was severely affected by the crises.

After these crises, in May 2001, a new stabilization program called "Transition to a Strong Economy" was adopted. Institutional and related reforms that were made during the implementation of the program improved both the regulatory capacity (e.g. in banking sector) and the fiscal stability of the state in Turkey. The successful reduction of the inflation rate, along with the attainment of fiscal discipline, lead to a relatively more stable macroeconomic environment from 2002 and onwards.

Since then, the banking sector has managed to increase its financial soundness with the help of the implementation of this program, and hence, protected itself from the destructive effects of the Global Financial Crisis that reached its climax in 2008. More specifically, the effect of the global crisis on the financial soundness –in terms of relevant indicators– was very limited and, as a result of this, the banking sector immediately overcame the negative effects of this crisis (BRSA, 2010).

Another positive improvement in the banking sector which is in line with the above mentioned developments has been the increasing financial intermediary function between the years 2002 and 2010. The share of total credits in total assets of the banking sector which was %28 in 2002 rose to %50 in 2008, and the share of domestic debt instruments in total assets fell from %40 to %26 in the same period (CBRT 2006, 2009). Although there is a slight decrease in the ratio of credits to total assets in 2009, with a quick recovery, this ratio increased to %30 in 2010 (CBRT, 2011).

3. THE MODEL AND EMPIRICAL RESULTS

3.1 The Model

In order to shed more light on the finance-growth link in Turkey, this study investigates the role of instability and domestic borrowing on bank credit to private sector. That is, we analyze the empirical relationship(s) between credit to private sector-to-GDP ratio (PRIVY), domestic debt-to-GDP ratio (DDRAT),[8] overall macroeconomic instability (INSW), and per capita Income (YP) in Turkey over the 1980-2010 period.[9] In line with these aims, we form a cointegration system with the four variables [PRIVY, DDRAT, INSW, YP].

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[8] As noted before the banking sector is the primary buyer of domestic debt instruments in Turkey.
[9] See the data appendix for the definitions and the sources of the variables.

We are particularly interested in the effects of an increase in DDRAT, INSW, and YP on PRIVY. In other words, the following long-run relationship is expected:

$$\text{PRIVR} = f(\text{DDRAT, INSW, YP}) \qquad\qquad\qquad (1)$$
$$\qquad\qquad\quad - \qquad - \qquad +$$

Since a higher economic growth creates demand for a developed financial system (*a la* Robinson), a positive sign for YP is expected. Also, uncertainty resulting from macroeconomic instability can force firms to postpone their investments. In such an environment, consumers would also postpone their consumption decisions and hence a rise in the level of macroeconomic instability could lead to a decrease in the private credits. Moreover, even if the firms and consumers are willing to obtain credit, banks may not grant them such credits due to the high risk involved in excessive macroeconomic uncertainty. In this respect, we expect a negative relationship between macroeconomic instability and financial development.

As explained in the previous section, especially during the 1990s, Turkish banks preferred to finance public debt rather than give credits to the private sector. In other words, they acted as lazy banks. Due to the existence of such a crowding-out effect, a negative relationship is expected between public debt and private credits.

3.2 Empirical Results

Prior to estimating the cointegration relation, it is essential to check for the existence of a unit root in each series. Table 1 presents the ADF test results, showing that the null hypothesis of a unit root is not rejected for the levels of all the variables. Additionally, the null hypothesis for the first differences of all variables is rejected.[10] Thus, all three variables contain a unit root.

Table 1. Unit Root Tests

	ADF Tests		
	Level		First Difference
Variables	Without Trend	With Trend	Without Trend
YP	0.2108 (0)[a]	-2.8820 (0)	-5.7844 (0)
	[0.9689][b]	[0.1816]	[0.0000]
INSW	-2.5563 (0)	----------[c]	-6.5584 (0)
	[0.1127]		[0.0000]
DDRAT	-1.4924 (0)	----------[c]	-6.5260 (0)
	[0.5236]		[0.0000]
PRIVY	1.7087 (2)	----------[c]	-2.8387 (0)
	[0.9994]		[0.0645]

[a] Numbers in parentheses are the optimal lag length chosen by the Schwarz Bayesian Criterion (SBC). Max lag=2.

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[10] For PRIVY, the null hypothesis of a unit root is rejected at only 6.5% significance level. However, KPSS and ERS tests support the stationarity of ΔPRIVY.

[b] Numbers in square brackets are p-values.
[c] INSW, PRIVY and DDRAT do not have an apparent trend; therefore, the authors did not include the deterministic trend term in ADF tests.

This study utilizes the Johansen cointegration technique to estimate long-run relation in the model as set out in Section 3.1. The Max and Trace statistics suggest one cointegration relation, which is in line with the priori expectations.

By using the Johansen method, Equation (2) is estimated as follows:[11]

$$PRIVR = -33.3823 - 1.7427\ DDRAT - 112.1603\ INSW + 0.1213\ YP \qquad (2)$$
$$\qquad\qquad\quad (0.3707) \qquad\quad (20.9320) \qquad\quad (0.0201)$$

(Note: standard errors are in parentheses.)

The above equation suggests that credit to private sector (PRIVR) tends to increase with per capita income (YP), but it is negatively affected by the level of macroeconomic instability (INSW) and domestic debt (DDRAT) over the long-run. These results are statistically significant and in line with the theoretical expectations of this study as set out in Section 3.1. The former result lends support to the demand-following view while the latter empirically confirms the lazy bank view.

In order to analyze the short and medium-term dynamics, this study utilizes generalized impulse responses. Figure 1 shows the generalized impulse responses of PRIVY to a positive innovation (or shock) in INSW, YP, and DDRAT.

As it is clear from the upper and the middle panels of Figure 1, PRIVY is negatively and permanently affected by an increase in macroeconomic instability and domestic debt over the medium-turn. These results are in line with the descriptive analyses and theoretical expectations (see Sections 2 and 3.1). As seen from the lower panel of Figure 1, PRIVY is positively affected by the level of per capita income, which is again in line with the theoretical expectations.

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[11] Considering the non-presence of a deterministic trend in all variables, there is no trend term in cointegration relation. However there exist a restricted constant term. Schwarz Bayesian Criterion selected the lag length of the VAR as 1. The residuals are homoscedastic, normal, and not serially correlated.

Figure 1. Generalized Impulse Responses of PRIVY to INSW, YP and DDRAT

Response to Generalized One S.D. Innovations

Response of PRIVR to DDRAT

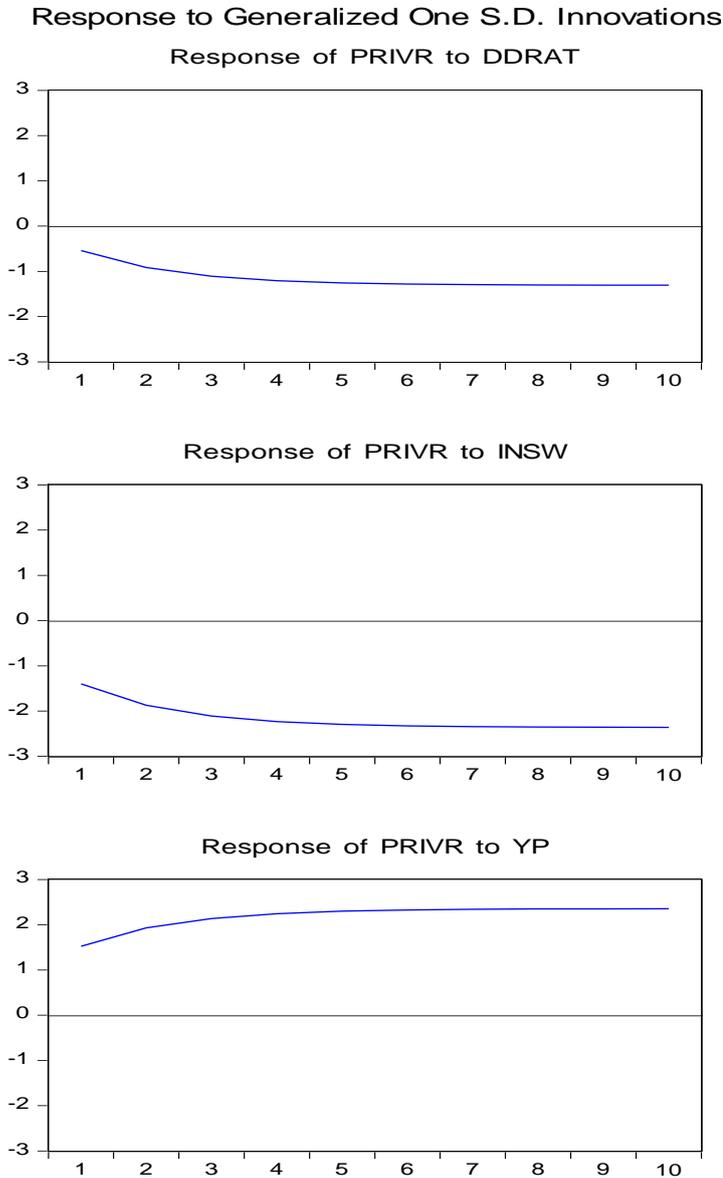Response of PRIVR to INSW

Response of PRIVR to YP

Figure 2 presents the generalized impulse responses of YP to a positive innovation (shock) in PRIVY. According to this figure, per capita income is positively and permanently affected by the credit supplied to the private sector. This result lends support to the supply leading view.

Figure 2. Generalized Impulse Responses of YP to PRIVY

Response of YP to Generalized One
S.D. PRIVR Innovation
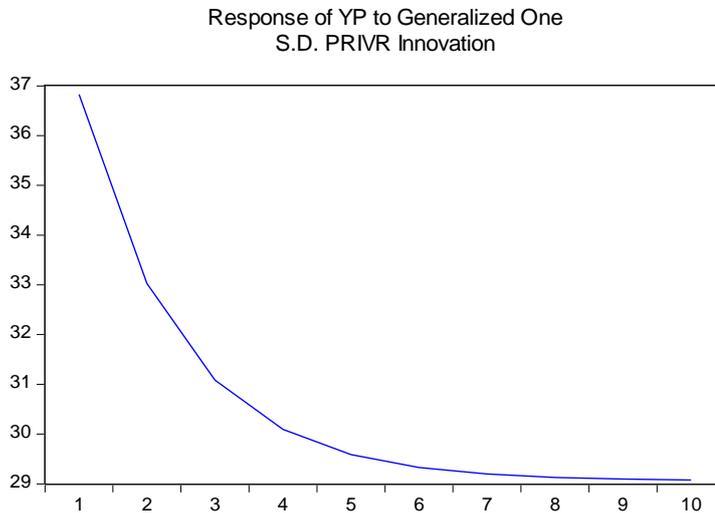
4. CONCLUSION

In this paper we aimed to investigate the finance-growth nexus in Turkey by using time series econometric techniques over the 1980-2010 period. By doing so, we extended the existing literature by taking into account the role of macroeconomic instability as well as public borrowing.

The main findings of the cointegration analysis are as follows: Macroeconomic instability harms financial development, banks act as lazy banks, and economic growth has a positive effect on financial development. In other words, we found an empirical support for the the demand following view. Moreover, generalized impulse response analysis has revealed that growth-financial development relationship is bi-directional and permanent both in the short and medium-run.

The results of this paper suggest the following policy implications: First, macroeconomic stability is a precondition not only for economic growth but also for financial development. Second, governments must avoid excessive domestic debt financing since such behaviour creates laziness in the banking sector and this, in turn, harms economic growth via decreasing private credits.

To shed more light on the results of this study, our empirical approach can be further applied to other emerging market economies or developing countries which suffer from economic and political instabilities like Turkey. This is left for future research.

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Appendix: Data Definitions and Sources

INSW is a revised version of macroeconomic instability index (MII) developed by Ismihan et al. (2005), and used as a proxy for macroeconomic instability. That is INSW represents the level of overall macroeconomic instability. The index is calculated using the human development index (HDI) methodology and it is bounded between 0 and 1 due to its construction. INSW is based on four macroeconomic instability indicators; namely, public deficit to GDP ratio, inflation rate, change in the current account balance to GDP ratio, and change in exchange rate. Source: Ismihan (2009, 2013)

Y (output) is measured by GDP (at 1998 prices, in 1000 TL). A new GDP series is available for the 1998-2010 period from TurkStat. Ministry of Development (MD) has provided a new GDP series extending back as far as 1950.

POP (Population) is mid-year population. Source: TurkStat.

PRIVY is bank credits to private sector-to-GDP ratio (%). Source: MD

DDRAT is domestic debt-to-GDP ratio (%). Source: MD

YP (= Y/POP) represents per capita real income.