Fiscal Theory of Price Level: The Case of Turkey, 1988-2010

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In this paper, we will investigate the relationship between public debt and primary government surplus in Turkey from 1988 to 2010. As an analytical tool, we will discuss this relationship under the Fiscal Theory of Price Level. This theory, which was mainly developed by Leeper (1991), Sims (1994) and Woodford (1995), implies that given the existence of a dominant fiscal authority and passive monetary authority, inflation is caused by the fiscal authority and cannot be controlled by the monetary authority. By analyzing the financial actions of the government, we are able to conclude which authority dominates in the economy and what can be done in times of high inflation. In our case, we will conduct data analysis for Turkey from 1988 to 2010. Previous literature (Sackan, 2006) used data from 1988 to 2005 and the main finding of that work is that after the 2001 crisis, when inflation was very high, the Turkish economy changed from a fiscal dominant to a monetary dominant regime. In our research, we use five more years of data to see the changes over a longer time span and to better analyze the economic regime. The main focus will be on the recent changes in government spending, especially after 2003, when a new conservative party came to power.

Woodford (1995) claims that classical monetarist theory is not enough to explain changes in price level. He suggests that there is a strong relation between budget deficit and inflation. If there is not any restriction on the government spending and borrowing behavior, such as the Maastricht Criteria, the government borrows and spends more and more. High government expenditure influences the private sector and households, since they feel richer as a result of the wealth effect. To put it simply, if the government spends more by borrowing and not by levying taxes, the private sector and households spend more, too, which causes higher demand that results in inflation.

In the U.S. for example, there is not a strong relationship between the money supply and the inflation rate, as classical monetarist theory would suggest. Moreover, although the U.S. has an endogenous monetary policy, which means the Federal Reserve follows the market demand, the price level is stable over a long period.

In Turkey, on the other hand, beginning from the 1980s, when the open economy was first embraced, the main fundraising resource for the government was foreign debt. From the 1990s, hyperinflation continued for years and years. Since government expenditure was funded by the increasing debt, for years it was not possible to fight inflation. The government was trying to pay its debts only by printing money, which caused more inflation. In addition, issuing huge amounts of government bonds played a crucial role. Annual inflation rates were in the double digits for a long time, some years even climbing up to 50%. As a result, a huge crisis occurred in 2001, when the government was not able to pay its debts anymore even though the interest rates on government bonds were extremely high.

The 2001 crisis forced the government to implement serious policies that would stabilize and trigger the economy. The “Transition to a Strong Economy Program” was passed in 2001 and strictly obeyed. The Program consisted of several items:

1. Lowering inflation to single digits by the end of the three years

2. Pulling interest rates down as much as possible

3. Increasing economic potential

4. Using limited resources more effectively

5. Giving the Central Bank independence in policymaking

After three years, at the end of 2004, the consumer price index was recorded just below 10%, a single-digit number after a very long period. This was a result of the Program, which did not allow the government to borrow more than they could afford to pay back and forced the government to use the funds effectively.

In 2003, the new conservative party (AKP) came to power in Turkey, with a high level of support. While their policies were consistent with the “Transition to a Strong Economy Program” up until 2006, after that, they began executing huge projects that required enormous funding. Moreover, their sustained high level of support, despotic attitude towards their opponents and verbal attacks on the Central Bank’s independent policies make us suspect that government spending and borrowing has reverted to pre-crisis levels.

In the previous literature (Sackan, 2006), it is verified that in the period from 1988 through 2001 there was a fiscal dominant economic regime in which it was impossible to fight inflation and in the period from 2001 to 2005 there was a monetary dominant economic regime in which the Central Bank was fully independent and policies for fighting inflation were effective. In this paper, given the background of the AKP government, we will try to test our assumption that since the year 2006 the government’s financial behavior has changed and it is fiscal dominant, which signals future economic downturns.

We employ quarterly data that covers the period from 1988 to 2010. We have constructed variables PS (primary surplus, a variable that shows the government’s revenues) and PL (public liability). These variables are in real terms, so they are adjusted for inflation. This is crucial for our tests, since we can capture the inflation effect only by the help of data in real terms. We separated data into three intervals, from 1988 to 2001, from 2001 to 2005, and from 2006 to 2010. This is compatible with the previous literature, however, in this paper, data from the period 2006 to 2010 is tested separately.

We differentiate economic regimes by analyzing some features of PS and PL with the help of VAR (vector auto-regressive) models. We give shocks to PS (strictly speaking to its error terms) and analyze the response of PL to the shocks (impulse-response function). If primary surplus is positively auto-correlated, which implies that the government expects sustainable cash inflows in the future, and in that case if the relationship between PL and PS is positive, we conclude that the economic regime is fiscal dominant. Simply explained, if the government is sure that the revenues will go up and still does not try to repay its debt, that means that the government is independently deciding fiscal policy regardless of the economic fundamentals. The result of this policy would be high inflation that cannot be stopped, because the Central Bank would passively adjust their policy according to government spending (printing more money, depreciating the currency, etc.). This is what we would expect from the period from 1988 to 2001, in the first place. For the period 2001-2005, we expect results that support a monetary dominant economic regime, as it would be compatible with the previous literature. However, for the period 2006-2010 we do not expect that the monetary dominant economic regime pattern will continue. Moreover, for the period 2001-2010, we also expect the monetary dominance pattern to change, and for the period 1988-2010 we expect that the economic regime is fiscal dominant, since the fundamentals of the Turkish economy are not solid yet, after a long period of crises.

Next, we proceed to the empirical results. First, we test the data for the period 1988-2005 to verify the results that were obtained in the previous literature. It is verified that, as in the previous literature, the period 1988-2001 is fiscal dominant, and the period 2001-2005 is monetary dominant. Moreover, the general period 1988-2005 is fiscal dominant. The period 2001-2005 shows compatibility with a post-crisis program that restricted government expenditure and borrowing incentives. Up until 2001, the primary surplus (PS) shows strong positive auto-correlation which implies that if the government surplus was increasing for a given time period (a quarter in our study), it increased in the next period, too. It also implies that if government revenues decreased for a given period, they decreased in the next period, too. Nevertheless, public debt (Pl) data reacted to PS positively, which indicates a fiscal dominant economic regime feature. To be clear, this pattern implies that the government either had persistently increasing revenues or persistently decreasing revenues, yet it did not repay its debts, on the contrary, it increased its debts. For the period 2001-2005, the pattern is the opposite. PS has negative auto-correlation, which implies different revenue patterns for different periods. It can be thought of as a feature of a monetary dominant economic regime. Since the government's financial decisions are dependent on the economic fundamentals, it is not consistent in its spending pattern. The more important feature is that public debt in this period reacts to the primary surplus negatively, which means that the government actually was repaying its debts.

Next, we add up the data for the period 2006-2010, and try to test the economic regime empirically. First, we analyze the new data separately. The new period shows an ambiguous pattern. Primary surplus does not have positive or negative auto-correlation and public debt does not react to primary surplus change, positively or negatively. We have to analyze the period 2001-2010 to conclude something stronger. In the period 2001-2010, auto-correlation of primary surplus turns out to be positive. This is a different pattern that is caused by the period 2006-2010, since the period 2001-2005 alone showed the opposite pattern. Although public debt in this period (2001-2010) is declining with the reaction to positive primary surplus, clearly the government's financial decision pattern changed compared to the 2001-2005 period. We are not able to strictly conclude that the economic regime was fiscal or monetary dominant, though.

We tested and concluded that the period 1998-2005 was fiscal dominant. Now we test the period 1988-2010 to capture whether or not a different pattern is caused by the new data from the 2006-2010 period. The primary surplus is strongly positively auto-correlated in this period and public debt responds to a positive change in primary surplus positively. This is a clear feature of a fiscal dominant economic regime. From this, we understand that the general economic regime in Turkey did not change much. The main point is, the added data for the 2006-2010 did not show any different pattern from the general fiscal dominant features.

We need to logically analyze the empirical results from the different periods. First of all, we conclude that the period 2001-2005 is monetary dominant. This was the period when the 2001 crisis occurred, and anti-crisis policies were implemented. Moreover, the “Transition to a Strong Economy Program” officially restricted public borrowing and government expenditure was closely mentored. The Central Bank’s authority was strengthened and independence from the government was assured by law. The analyses of the data verify that the program was indeed efficient. Inflation rates through these years were stable and tolerable. Primary surplus was positive these years, which concludes to the fact that government spending behavior was decent.

In the period 2006-2010, the data shows a different pattern in terms of primary surplus, public debt and their relationship, compared to earlier periods. First, it is clear that these years are not under a monetary dominant economic regime anymore. This is the time period that AKP, the ruling party, settled into government and started to become aggressive in terms of economic and political policies. They were spending huge amounts of taxpayer’s money on dubious projects, such as roads, bridges, and extravagant buildings. Since they had (still have) great support from the population (40-50% winning rates in all kinds of elections), they did not have much incentive to compromise with civil society members. Without making any further comments on the political situation, if we focus on the relationship between the Central Bank and the government, the pattern that the data shows will become clear. The AKP government in this period insistently used a threatening tone when they addressed the Central Bank. They always blamed the Central Bank for cooling down the economy, since they wanted the economy to boom without considering whether it would have unpleasant consequences or not. The Central Bank on the other hand, tried to protect their independence but this hostile relationship was already a sign of dominant fiscal authority. Although, from our data, we cannot empirically prove a perfect pattern for a fiscal dominant regime in the period 2006-2010, if we compare patterns for 2001-2010, 2001-2005 and 1988-2010, claims that the period 2006-2010 was not monetary dominant are not very tenable.

Our tests on empirical data prove that Turkey is still in danger of high inflation. The behavior of the AKP government jeopardizes the whole economy. For Turkey to be stable and not to face high inflation rates, the Central Bank’s independence from the government should be emphasized. We know that if the government finances its expenditure by borrowing directly or by issuing government bonds continuously, it causes ‘unpleasant monetarist arithmetic’. It means that when the government tries to repay its debts by simply printing money or forcing the central bank to print money, upward pressure for inflation occurs. This is what happened in Turkey in the 1990s. Those were times when the fiscal theory of price level was not popular. Economists were discussing the sources of inflation and the problem was that classical monetarist theory could not explain the weak empirical relationship between money supply and inflation. Governments thought that issuing government bonds would not cause inflation and they financed their expenses by continuous bond issuance. As the fiscal theory of price level became popular and empirically supported, governments also changed their financial behaviors. They realized that issuing bonds is almost identical to printing money. Because printing a banknote is like making a debt agreement and issuing a bond is like printing money. In both cases, the government promises that ‘this paper’ has some kind of asset value. Turkey realized this later than other countries and reforms were too late. That is why in Turkey throughout the 1990s there were big crises and inflation rates were high. There were times such that the central bank itself was targeting an inflation rate of 50%. This means that even 50% was an acceptable level of inflation. As the Turkish economy still has fragile fundamentals, caution is needed when deciding financial policies. However, under the AKP government, this does not seem very realistic. Nepotism is widespread and corruption for doing new business has become the norm. Hundreds of journalists have been arrested and whoever criticizes the government is under threat. This shows that the Turkish economy faces an upcoming potential crisis. The political and financial behavior of the AKP government has made the Turkish economy fragile again, as it was before 2001. Our data and methodology reflect these changes clearly. To conclude, the government needs to change their approach as soon as possible before it is too late.

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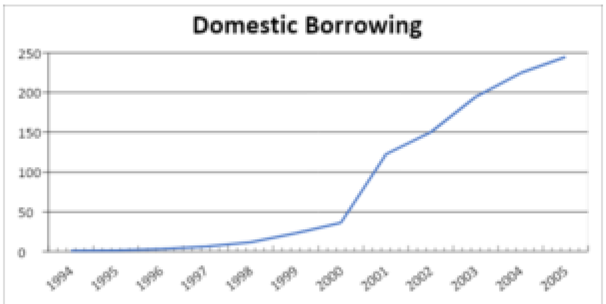
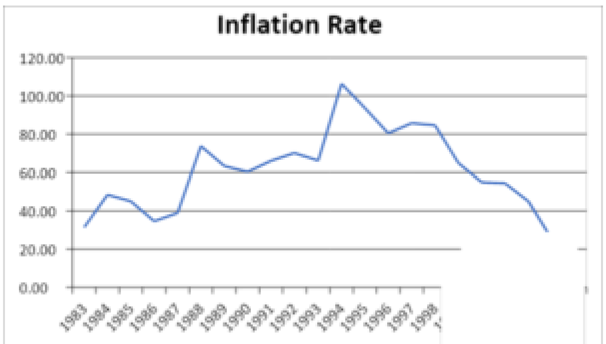
APPENDIX

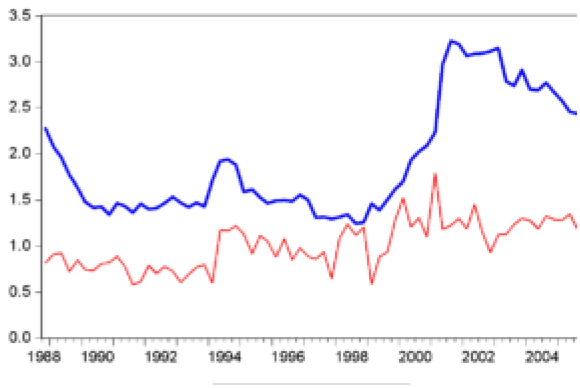
Graph 1.



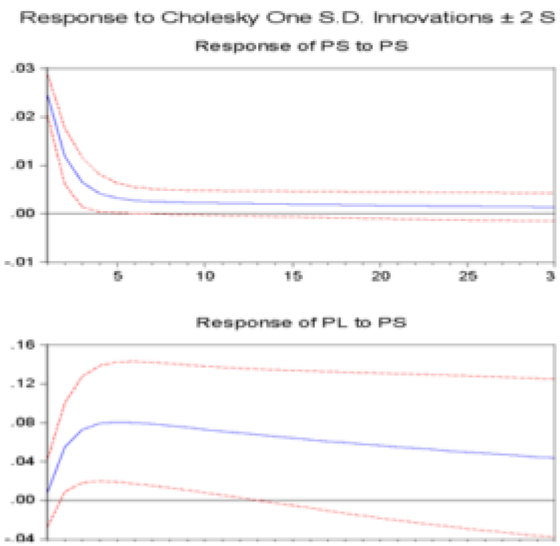
Graph 2



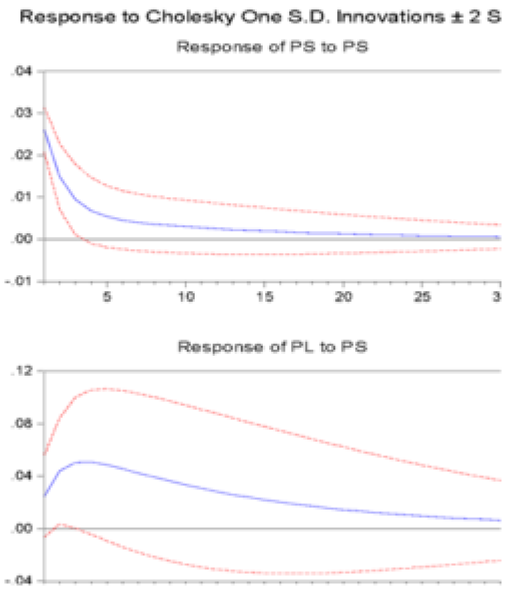
Graph 3



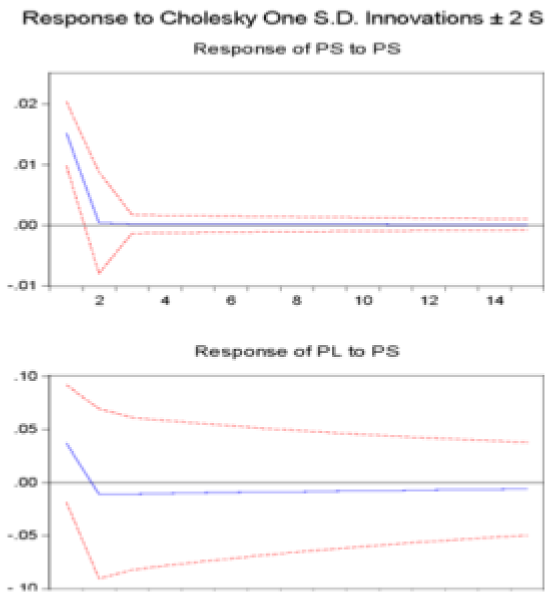
Graph 4. 1988-2005



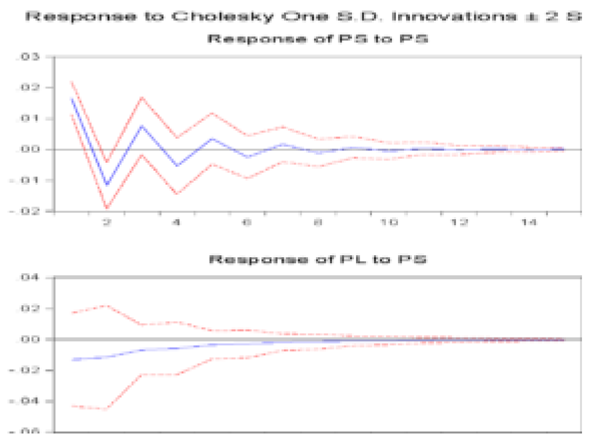
Graph 5. 1988-2001



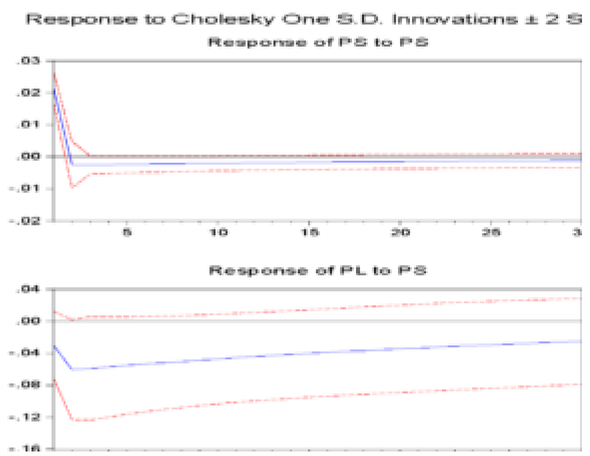
Graph 6. 2001-2005



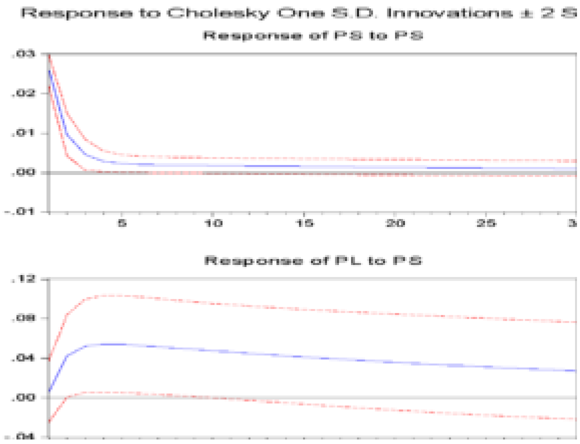
Graph 7 . 2006-2010



Graph 8 . 2001-2010



Graph 9. 1988-2010



Note: Simplified and updated English version of a bachelor’s thesis (2012, Hitotsubashi University, supervisor Eiji Kurozumi), translated from Japanese.