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Global Constraints on Central Banking : The Case of Turkey

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Global Constraints on Central Banking : The case of Turkey

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Abstract:

This study aims to evaluate the developments in Turkish monetary policy after 2002 and understand constraints on the effectiveness of The Turkish Central Bank (CBRT). The CBRT has significantly altered its monetary policy in response to the crisis. It became much more experimental and aware of challenges it faced. However, the Bank's ability to exert influence on key variables seems to have been restrained by factors outside of its control. Financial flows exert great influence on key macroeconomic variables the Bank monitors closely. Furthermore, energy prices are among the key determinants of inflation in Turkey. As a result, the Bank's influence on growth and inflation through intermediate variables became a daunting task. The magnitude and direction of flows seem to be mainly related to global risk perception determining the worldwide liquidity conditions rather than domestic factors. Under these conditions central banks may not set their official interest rates independent of interest rates in advanced countries. Indeed, our VAR analysis exercise supports this argument for the Turkish case. Existing policy framework would not produce desired outcomes unless the sources of the problems such as financial flows as the main global constraints on monetary policy are addressed in a much more serious manner

Key words: central banking, economic and financial crisis, capital inflows, the Turkish economy

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Introduction

Central banking has evolved significantly in relation to evolution of financial markets in advanced countries since the 1980s. Central bank independence and inflation targeting (IT) have gained importance in many countries. Low inflation was supposed to bring about financial stability. It was argued that asset prices should not be among the concerns of central banks (Bernanke and Gertler 2001). Monetary targeting lost its appeal and short-term interest rates have gradually become the sole instrument of monetary policy. There was a rise of the importance of expectations channel for central banking. Central banks were supposed to affect aggregate demand and inflation through their impacts on financial markets with short-term interest rates and their influence on expectations of the financial market players. Interest rate smoothing was accepted to be optimal in order to decrease uncertainty about monetary policy (Woodford 2003). In many ways, central banks in developing countries have closely followed footsteps of those in developed countries. Financial markets were hastily liberalized in these countries. After experiments with exchange rate peg regimes together with monetary targets, IT with flexible exchange rates became the dominant framework in these countries. There was an emerging new-consensus about central banking till the recent global crisis (Goodfriend 2007) in both developed and developing countries. However, the recent global crisis has forced central bankers to change their policies and charter unknown territories.

The ECB which has been conducting monetary policy on the behalf of member countries was of the main leading figures practicing the new consensus. However, as in the case of the Fed, it has had to resort to unorthodox policy measures in response to the crisis. The recent crisis did not only cause a change in the conduct of monetary policy in the Eurozone, the candidate countries have changed their policy framework at varying degrees. Currently there are five candidate countries for EU accession. These countries are Iceland, the Former Yugoslav Republic of Macedonia, Montenegro, Serbia and Turkey. They have liberalized their trade and financial accounts partially in the integration process. As a result, they were significantly affected by the global crisis through sharp trade and financial shocks. Their initial conditions including their exchange rate policies and in relation to this their responses to the crises have been very heterogeneous. For example, Iceland completely nationalized its banking system and put capital controls on financial transactions[1].

Among candidate countries, the eldest candidate and the biggest country in terms of its population and GDP is Turkey. Turkish economy is about 20 times larger than the next biggest economy in the group. The economic and political shifts in this country may have much more implications for the Union. Furthermore, the country has been very experimental in its monetary policy to cope with the implications of the recent crisis. In this respect, investigating the evolution of the Turkish central banking may give some insights on the appropriateness or optimality of monetary policy to cope with the current crisis. Therefore, in this study, we will focus on the evolution of Turkish central banking.

Here, we will specifically attempt to understand developments after 2002. Our main findings indicate that the Turkish Central Bank (CBRT) has significantly altered its monetary policy in response to the crisis. It became much more experimental and aware of challenges it faced. However, the Bank's ability to exert influence on key variables seems to have been restrained by factors outside of its control. Financial flows exert great influence on key macroeconomic variables the Bank monitors closely. Furthermore, energy prices are among the key determinants of inflation in Turkey. As a result, the Bank's influence on growth and inflation through intermediate variables became a daunting task. The magnitude and direction of flows seem to be mainly related to global risk perception determining the worldwide liquidity conditions rather than domestic

[1] Accession negotiations began with Turkey in October 2005, with Iceland in July 2010 and with Montenegro in June 2012. Although the Commission recommended the opening of the negotiations with Macedonia, it has not been approved by the Council yet. Bulgaria and Crotia completed their accesion process on January 2007 and July 2013 respectively. Currently, there are no acceding countries. Furthermore, many countries have just became part of Eurozone recently.In this vein, Slovenia joined the Eurozone in 2007, Cyprus in 2008, Malta in 2008, Slovakia in 2009, Estonia in 2011, Latvia in 2014, and Lithuania in 2015.

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factors. Under these conditions central banks may not set their official interest rates independent of interest rates in advanced countries. Indeed, our VAR analysis exercise supports this argument for the Turkish case. Existing policy framework would not produce desired outcomes unless the sources of the problems such as financial flows as the main global constraints on monetary policy are addressed in a much more serious manner.

The outline of the paper is as follows. The first part will shortly discuss the evolution of central banking in Turkey before 2002. The second part will focus on the period after 2002 in which an IT regime was implemented. This part will also cover the policy shift in monetary policy in response to the crisis. Focusing on main macroeconomic variables, the third part will assess the performance of monetary policy since 2002. The fourth part will discuss main challenges constraining the Turkish central bank. The last section will conclude.

A Brief Account of the CBRT Policies before 2002[2]

The CBRT was found as early as in 1930 and became active in 1931. In the early periods, given strong regulations over financial markets with closed capital accounts, the Bank played important roles in channeling credits to the government and especially public enterprises. Indeed, the CBRT served as a development bank for a long time. After 1945, existing international monetary system formed by the Bretton Woods agreement was friendly to this domestic structure as well.

As in the case of many other countries, deregulation of Turkish economy began at the beginning of the 1980s[3]. In this vein, the 1980s witnessed the first steps for deregulation of financial markets and exchange rate regime. Interbank money markets were established in 1986. The same year, Istanbul Stock exchange which was found in 1985 became

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[2] For the details of history of the CBRT history and monetary policy before 2002 interested reader can see Kesriyeli (1997), Binay and Kunter (1999) and Kandiller (1997)

[3] For the detailed account of this developments after the 1980s interested readers can see Bedirhanoğlu et al (2013)

operational. As a crucial step, capital account and exchange markets were fully liberalized in 1989. In other words, all the barriers to the financial flows were lifted.

In the 1980s, there were some attempts to let interest rates be determined within the banking system. In this vein, deposit rates were allowed to be determined by banking sector in the beginning of the 1980s though this was reversed in 1983 due to abnormal increases in interest rates. Interest rates were allowed to be determined by financial markets once more in 1987. However, wild fluctuations in market interest rates forced the Bank to implement an interest rate ceiling policy in 1989 which gradually phased out.

With these developments, central banking significantly changed in the 1980s as well. In these years, the Bank attempted to control money supply by determining the conditions for credit expansion. Although there were attempts to liberalize the interest rate regime, the CBRT utilized interest rate controls for this purpose. The government deficits used to be financed through direct central bank funding before the introduction of the mechanism based on selling government bonds to domestic financial players. The Bank halted providing long-term and medium term credits to enterprises in 1989. In tandem with establishment of interbank money markets, the CBRT began to conduct open market operations at end of the period.

The Turkish Central Bank announced its first monetary program in 1990. However, due to the uncertainty and fluctuations stemmed from the first gulf war, this program could not be pursued properly. Furthermore, the financial crisis of 1994 and the financing needs of the treasury changed the priorities of the bank. In this vein, the Bank could not follow a consistent monetary framework in the 1990s. During these years, the bank attempted to target exchange rates and monetary aggregates without much success due to fiscal dominance and high volatility in exchange rates stemmed from financial flows.

After enjoying high growth and some positive developments on the inflation side related to significant financial inflows to the economy accompanied by the relative appreciation of the currency in 1995 and 1996, the economy was shaken by the Asian Financial Crisis of 1997 and the Russian debt default of 1998 which caused reversals of capital flows. In

August 1999, a massive earthquake in the western industrial zone which claimed the lives of thousands of people further weakened the economy. As a result, inflation and high government public debt problems with severe uncertainty became unbearable.

In 1999, under the guidance of the IMF, a disinflationary program based on an exchange rate peg strategy, which was put into practice in the beginning of 2000, was prepared. As in the case of many IMF programs, the growth of the Bank's balance sheet was also linked to growth of foreign exchange reserves which was supposed to restraint the growth of money supply. Daily values of a basket of foreign currencies were planned to be announced with a gradual exit strategy of

allowing exchange rates to fluctuate in a larger band at the later stages of the program. However, although inflation slowed down with the help of the exchange rate anchor, inflation turned out to be much more persistent than expected. As a result, domestic currency appreciated considerably in real terms. Appreciated currency, high current account deficits, weaknesses in the banking system and political problems made the peg system vulnerable to speculative attacks. As a result of massive financial reversals, the Bank lost huge amount of reserves in November 2000. Although it attempted to continue with the program with extra borrowing from the IMF, it had to abandon exchange rate peg policy in February 2001[4].

The crisis of 2001 affected Turkish economy and central banking to a great extent. As part of the economic reform program implemented in response to the crisis, the Bank was granted its instrument independence in April 2001.

Inflation Targeting Regime And Beyond

After the collapse of the exchange rate peg policy, the Bank under the auspices of the IMF, began implementing an implicit IT 2002 onward. It was implicit due to the concerns about satisfying the requirements of IT and the lack of credibility of the Bank due to failures of

[4] For the details of the crisis of 2001, see Akyüz and Boratav (2003)

the previous programs. Monetary aggregates were supposed to be closely watched within this framework as well. Although the Bank was not eager to target monetary aggregates, it was part of the agreement with the IMF. In this framework, inflation targets are decided together with governments and are announced at the beginning of each year. However, the Bank is independent in choosing its policy tools to reach the targets. As in the case of other IT regimes, short-term interest rates are almost the sole instrument. Theoretically, exchange rates are supposed to be determined within financial markets. Since shaping expectations play a very crucial role in IT, the bank commenced to conduct surveys on expectations about key variables after 2002.

Meanwhile, very significant banking sector reforms were put into practice. Several new regulatory bodies including the supervisory authority for the banking sector were established. Furthermore, consistent large primary fiscal surpluses decreased the fiscal dominance over monetary policy. As will be elaborated in next parts, benign global conditions pawing way for high financial flows contributed to high growth and disinflationary trends in the economy till the crisis.

Although the monetary regime after 2006 is called an explicit IT regime, there were not very significant changes between the first and the second period. After 2006, Monetary Board began to take decisions for interest rates in its monthly meetings. Besides publishing quarterly inflation reports, the bank also announced inflation targets for three years.

The recent crisis did not only shake the foundation of central baking practices in advanced countries, but also central banks in developing countries including the Turkish one has been considerably affected by the shock[5]. The CBRT took considerable monetary actions as in the case of majority of crisis-affected countries. The monetary responses to the crisis preceded the fiscal actions and started to take place in the first half of 2008. The primary objectives of monetary policy during the crisis were to stabilize inflation, meet the FX demand (to ease the pressure on the exchange rates) and TL liquidity needs of private

[5] This paragraph and a couple of following paragraphs are heavily drawn on Comert and Çolak (2014)

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sector. For these purposes several policies were put into practice by the central bank (Table 1).

In the initial phase of the crisis, the CBRT did not adopt an expansionary stance till November 2008. In this period, the measures taken by the Bank were mostly concerned about inflation and financial stability without much emphasis on growth and unemployment issues which were among main considerations of some central banks in advanced countries. When Lehman collapsed in the third quarter of 2007, it was apparent that a plunge in aggregate demand and recession was upcoming for advanced countries. Hence these countries significantly cut their policy rates. However, the CBRT took tightening stance in this period and did not cut its rates and even increased the policy rates further in the second quarter of 2008 (Figure 1). In this sense, the policy stance of the CBRT was the reminiscent of ECB's stance at the initial stage of the crisis rather than being close to the Fed's aggressive response to the crisis. According to the authorities, the rationale behind this stance was higher level of exchange-rate pass through, low output gap and hence rising inflation expectations.

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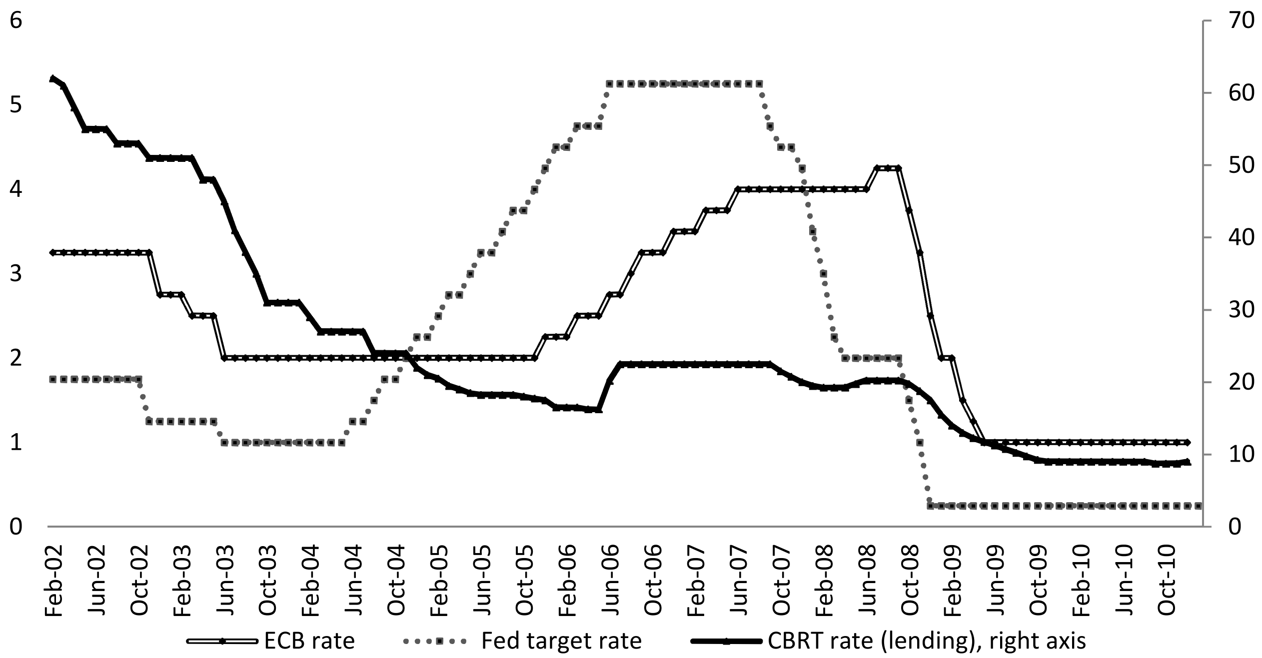
Table 1: Monetary Policy Responses to the Crisis

Types of Monetary Measures	Characteristics	Targets
Interest rate adjustments	✓ Policy rates were increased since first half of 2007 till July 2008 to stabilize rising inflation ✓ The rates sharply declined by 11 times after November 2008 from 16.75 percent to 7.25 percent till September 2009	To meet the inflation target, spur domestic demand and meet the liquidity needs of private sector.
FX interventions	✓ FX purchase auctions nearly stopped in the second half of 2008 ✓ FX selling auctions took place 20 times from late 2008 till mid-2009 ✓ The maturity of FX lending to banks was extended from one week to three months ✓ The interest rate on FX lending was significantly reduced ✓ The FX required reserve ratio was declined from 11percent to 9 percent.	To meet the FX demand of private sector and lessen the volatility in the exchange rate
Other liquidity policies	✓ Liquidity started to be provided via 1-week repo auctions. ✓ Interest payments on TL required reserves were increased ✓ Export rediscount credits were issued to more exporting firms ✓ The upper limit of export rediscount credits was increased from $500 million to $2.5 billion. ✓ TL required reserve ratio dropped	To ease the conditions of banks and firms in reaching the liquidity.

Source: Cömert and Çolak (2014)

After the eruption of the crisis in the US, there was a rising tendency in the CPI inflation caused by exchange rate movements. Nevertheless, when the inflation pressure calmed down in the last quarter of 2008, the CBRT started to take expansionary stance. As the inflation became no longer a concern due to slowing aggregate demand, monetary policy loosened significantly by cutting policy rates by 10.5 basis points within 11 months from November 2008 onward (Figure 1).

Figure 1: FED, ECB and CBRT rates



Source: CBRT, ECB and Fed Data Bases

The expansionary stance of the Central Bank was not only observed in its interest rate setting decisions but its several liquidity and FX market intervention policies, which were detailed in Table 1. The CBRT stopped FX buying auctions in late 2008 and started to drain its FX reserves by selling auctions and direct FX interventions till the second half of 2009. Nearly 15 billion USD worth of reserves were sold in this period. In addition to FX interventions, monetary authorities enacted several FX policies including decreasing FX reserve requirement ratio and extending maturity of FX lending, in order to mitigate the FX illiquidity risk in the financial markets. In this vein, FX reserve requirement ratio was decreased from 11 percent to 9 percent in July 2008. Furthermore, some policies aiming at helping institutions reach TRY liquidity were put into practice. The amount of export rediscount credits was widened, TRY reserve requirement ratio was lowered and interests paid for required reserves increased.

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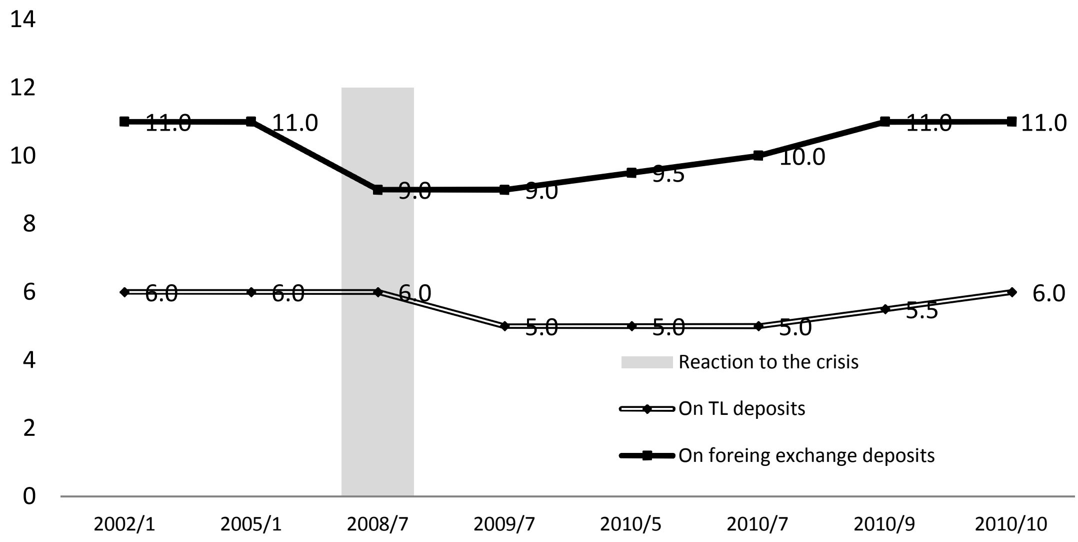
Figure 2: Required Reserve Ratios before 2011



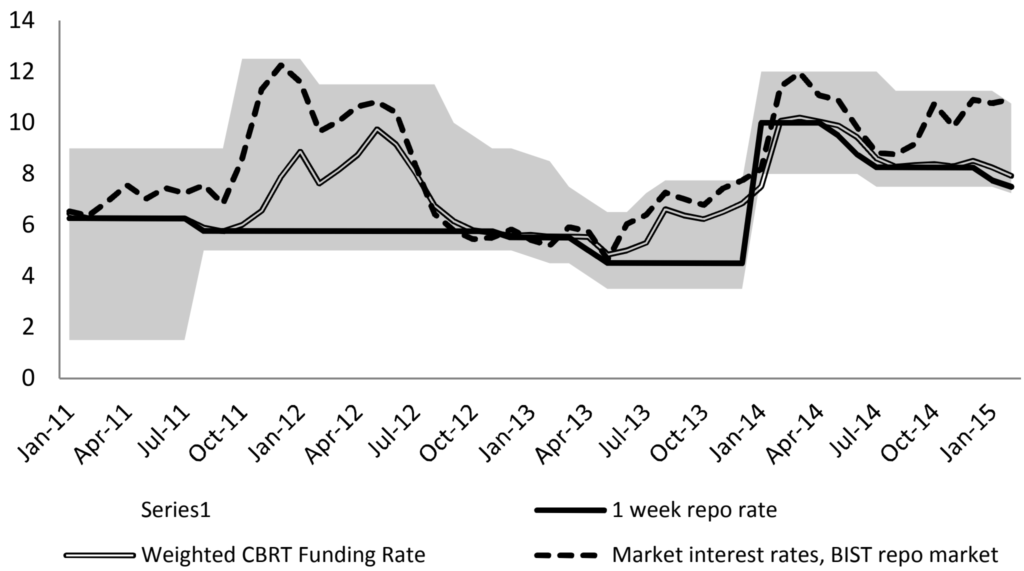
Source: CBRT Statistics

After the initial shock of the crisis, advanced countries began implementing extreme monetary easing with efforts to recapitalize their destructed financial markets. This led developing economies to welcome cross-border short-term liquidity bonanzas. The illiquidity problem in the early phase of the crisis was replaced by short-term volatile capital flows. Considering the threats of short-term volatile cross-border flows, Turkish monetary authorities became much more experimental with non-conventional monetary policies after the crisis (Başçı and Kara 2011, Kara 2013). Although, the bank was planning to gradually go back to the original IT framework (CBRT 2010). Due to the sea change in the theory of central banking and existing threats to emerging countries mostly related to volatile financial flows, non-conventional policies became permanent with new modifications after the third quarter of 2010. Within this new framework, the CBRT put more stress on financial stability and developing new instruments for this purpose.

In this sense, one week repo rate, interest rate corridor, liquidity management, required reserves and reserve option mechanism have been actively utilized. The bank used to announce overnight interest rates monthly base in response to the developments especially in inflation trends. After the end of 2010, one week repo rates became the policy rate instead of overnight interest rates. However, the bank continued benefiting from an interest rate corridor consisting of borrowing and lending overnight rates together with active liquidity management. With the introduction of the corridor system, allowing market interest rates vary daily within the corridor, the Bank aimed at reacting developments in financial market much more frequently rather than waiting monthly Monetary Board decisions about interest rates (Kara 2013). The interest rate corridor (Figure 3) was adjusted for the purpose of decreasing or increasing the volatility of market interest rates to target volatility caused by financial flows. This has been an attempt to benefit from uncertainty over funding rates and funding conditions in order to exert influence on credit expansion by the banking system and volatility in exchange rates caused by financial flows. When capital inflows are strong, the lower bound of the corridor was decreased and short term rate was allowed to deviate from the policy rate creating an uncertainty about short term yields thereby discouraging short term inflows. When inflows began to reverse as of August 2011, however, Turkish central bank narrowed interest rate corridor by raising the upper bound of the corridor in order to attract foreign capital.

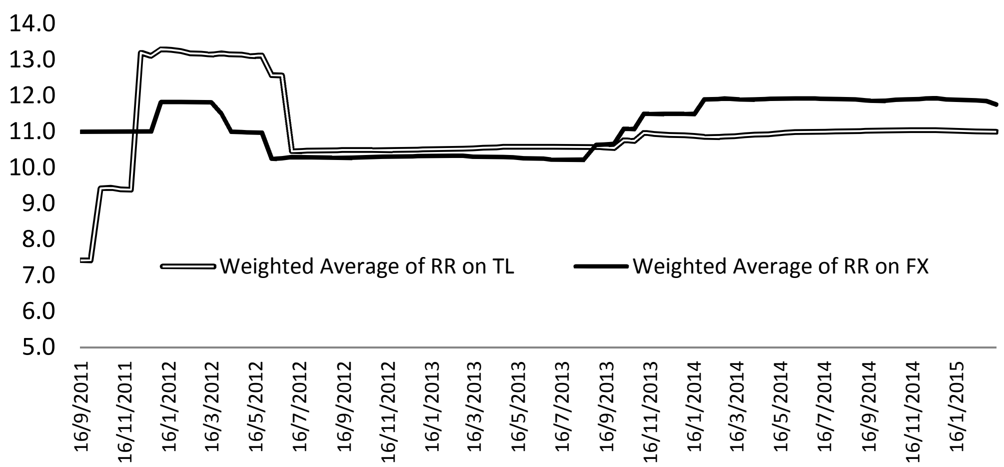
Theoretically, when interest rate corridor is expanded, banks with liquidity constraints are supposed to be much more cautious in their credit expansion because the level of market overnight interest rates becomes relatively unpredictable. Given the fact that the Bank does not meet the demand for reserves of the banking sector at the level of policy rate (1 week repo), as Figure 3 shows, market interest rates have fluctuated within the band significantly. However, lower interest rates which may be useful for addressing developments in exchange rates would encourage credit expansion. In other words, one policy tool would not be enough to influence two conflicting variables. With this consideration, the required reserves became an important instrument to address credit expansion. Required reserve ratios have been altered frequently to be able to influence credit creation capacity of the banking system since the end of 2011 (Figure 4).

Figure 3: Policy Rate, Interest Rate Corridor and Overnight Market Rates



Source: CBRT Statistics

Figure 4: Required Reserves After 2010



Source: CBRT Statistics

Another unconventional instrument the CBRT introduced after 2010 was Reserve Option Mechanism (ROM). This instrument has utilized to address exchange rate volatility. ROM allows banks to keep a certain fraction of their TL reserve requirement in the form of foreign currency or/and gold. Reserve Option Coefficient (ROC) determines how much foreign currency or gold can be held per unit of TL. For example, if ROC is 3, banks must keep 3 liras worth of foreign currency or gold per 1 lira reserve requirement. In a situation in which 1 dollar is equal to 3 lira, banks should keep 1 dollar for the fullfilment of their 1 lira worth of reserve requirment. During the time of high financial flows banks are supposed to keep higher ratio of their TL requirements in the form of foreign currency due to low cost of foreign exchange borrowing. This process may encourage banks to park a significant amount of foreign reserves at the CBRT voluntarily. This trend is expected to ease the appreciation pressure on TL. Furthermore, as long as ROC is greater than 1, the amount of TL liquidity will be less than that caused by the direct foreign exchange intervention of the CBRT. Although there are some findings indicating that ROM mechanism worked as planned till 2014, it is not very clear if effectiveness of the mechanism continued after 2014[6]. In the next section, instead of discussing the effectiveness of different instruments of the Bank separately, the overall performance of the Bank after 2002 will be investigated.

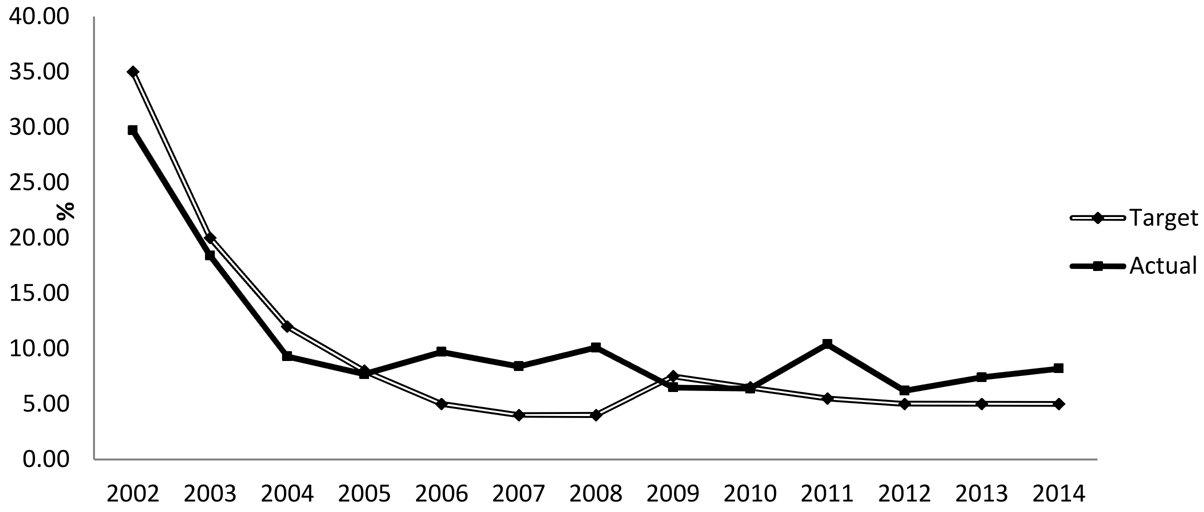
Overall Performance of the Bank after 2002

How can we rate the overall performance of the Bank since 2002? At best, the overall performance of the Bank in terms of main macroeconomic indicators can be considered mixed. The Turkish economy experienced a rapid disinflationary period from 2002 onward. Turkey and many other developing countries seemed to have benefited from the appreciation of their currencies in the process of curbing inflation from high levels. Appreciations of domestic currencies were mostly outcome of rapid financial flows to developing countries. Given the fact that supply side factors are the main reasons behind inflation in developing countries (Roger and Stone 2005, Anwar and Islam 2011), IT regimes, implicitly or explicitly, tolerated the appreciation of their currencies (Benlialper

[6] For more details about ROM, interested reader is referred to Aysan et. Al (2014), Değerli and Fendoğlu (2013), Alper et. al (2013)

and Cömert 2013)[7]. However, the bank has missed its target considerably in many years. This situation has become chronic since 2006. In general, adverse developments in energy prices and exchange rates were blamed for missing the targets.

Figure 5: Actual and Targeted Inflation Rates



Source: CBRT Statistics

When we turn our attention to output and employment, it seems that although the growth performance of Turkey has been relatively good, this has not generated enough employment opportunities for the economy. The Turkish economy has been suffering from a chronic high unemployment for a long time. Although average unemployment rate was 7.9 percent in the period 1987-2001, it increased to 10.6 percent in the period 2002-2014 (World Bank Development Indicators). However, as opposed to the central banks such as the Fed, the Bank has not been concerned about this. In this vein, the CBRT's hardcore stance about inflation targeting can be likened to the ECB's stance before the crisis. In fact, econometric findings shed some light on the hardcore stance of the Turkish Bank. Using a GMM method Comert et al. (2011) investigate the Bank's response to main

[7] Some other factors such as the integration of China and many other countries to the world economy creating enormous amount of surplus labour and in relation to this high competition pressure might have contributed to the global disinflation period in the beggining of 2000s.

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macroeconomic indicators for the IT regime. According to Comert et al. (2011), the Bank was not responsive to developments in GDP in its decision making process. This is an expected outcome for IT central banks. However, after the crisis, as mentioned above, the Bank commenced to highlight financial stability together with inflation targets. For this purpose some interrelated variables such as credit growth, exchange rate volatility, the composition of financial flows and current account have been closely observed (Başçı and Kara 2011). We will investigate the trends in these variables below.

As can be seen from Figure 6, current account deficits gradually reached unprecedented levels after 2002. Although the crisis brought about a decline in the current account, as opposed to the previous crises, it did not produce any surplus in the account. The deficit problem worsened further after 2010. In this vein, the Turkish performance in terms of current account has been one of the worsts among comparable countries (Benlialper, Comert and Düzçay, 2015). Chronic current account deficits can imply many problems. First, it would be an indication of structural problems such as lack of competitiveness and dependence on raw materials and intermediate goods in industrialization attempts. Second, it may also be a symptom of an overly appreciated domestic currency. Third, it implies the accumulation of huge liabilities by domestic actors which should be sooner or later paid back. Given the fact that developing countries cannot pay their liabilities back with their own currencies (original sin/hierarchy among currencies), chronic current account deficits would increase the vulnerabilities to financial reversals in these countries. Due to these reasons, developments in the current account may be alarming. As explained before, the CBRT has begun paying much more attention to the current account within its new policy framework[8] (Kara and Sarıkaya, 2014).

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[8] Kara and Sarıkaya (2014) argue that some parts of the current account deficits is cyclical which can be addressed by monetary policies. According to them, "to this end, the CBT has adopted a two-pillar approach. The first pillar was to slowdown credit growth and domestic demand, and the second one was to align the exchange rate closer with fundamentals. Although they argue that these policies were instrumental in engineering a rebalancing in the economy, which has been evidenced by the significant improvement in the current account balance", current account deficit is still a key problem in Turkish economy.

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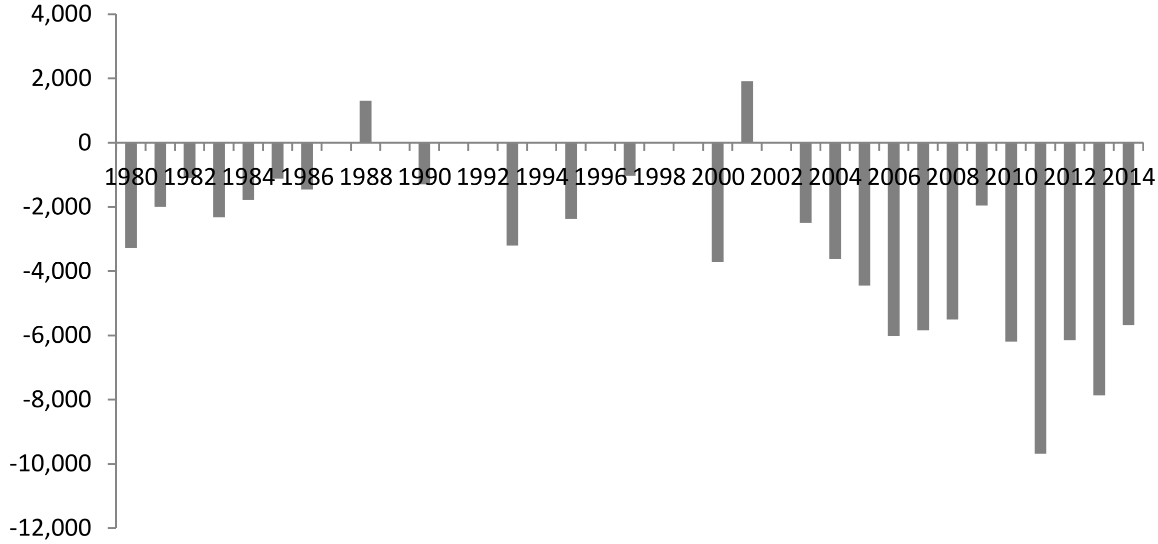
Figure 6: Current Account, % of GDP

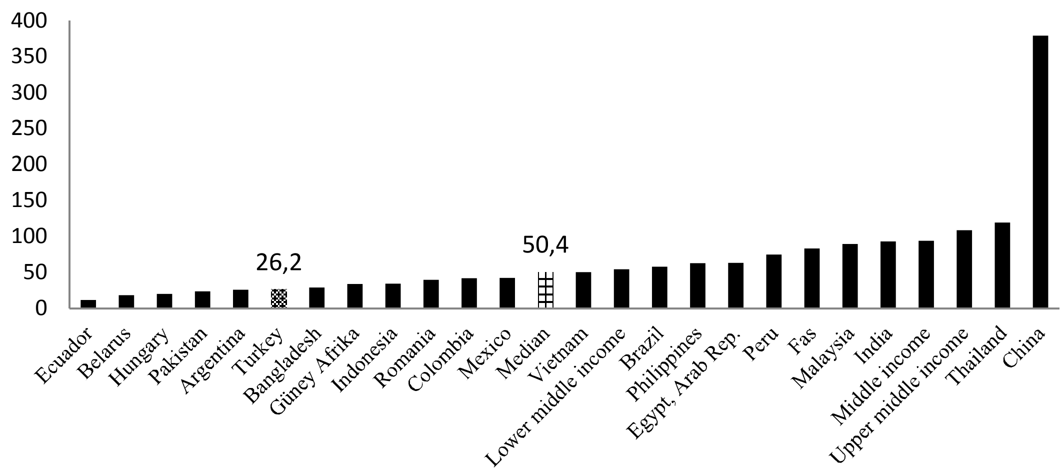


Source: World Bank Development Indicators

As a counterpart of current account deficit, Turkish economy has been attracting massive amount of financial flows. On average, net financial flows reached about 5 percent of GDP from 2002 to 2008. After a brief sharp decline in 2009, financial flows gained momentum again and reached about 8 percent of GDP in the period 2010-2014. In this sense, the amounts of financial flows entering into the economy have surpassed those in many other developing countries with a comparable size of GDP (Benlialper, Comert and Duzçay 2015). The size of financial flows was so huge that some parts of flows were even accumulated in the form of reserves[9]. As a result, the CBRT increased its foreign exchange reserves in both absolute terms and relative to GDP from 2002 to 2014. However, compared to its external debt, its reserves still would not be considered high among similar countries. Figure 7 demonstrates that the official reserves reached only 26 % of external debt while the median of official reserves among comparable countries was about 50 percent in 2013.

[9] Theoretically, central banks do not need to accumulate foreign exchange reserves under flexible exchange rate regimes. However, due to "fear of floating", the CBRT and many other central banks accumulated huge amount of reserves as insurance against financial reversals.

Figure 7: Official Reserves (% of External Debt 2002-2013)



Source: Benlialper, Comert and Duzçay, 2015

The composition of financial flows would be an important indicator which should be observed closely. As can be seen from Figure 8, relatively short-term and more volatile financial flows have gained importance in total flows especially after 2010. Although net foreign direct investment made about 30 (37) percent of total flows in the period 2002 - 2008 (2003-2007), its share decreased to about 15 percent in the period 2010-2014 (CBRT Data).

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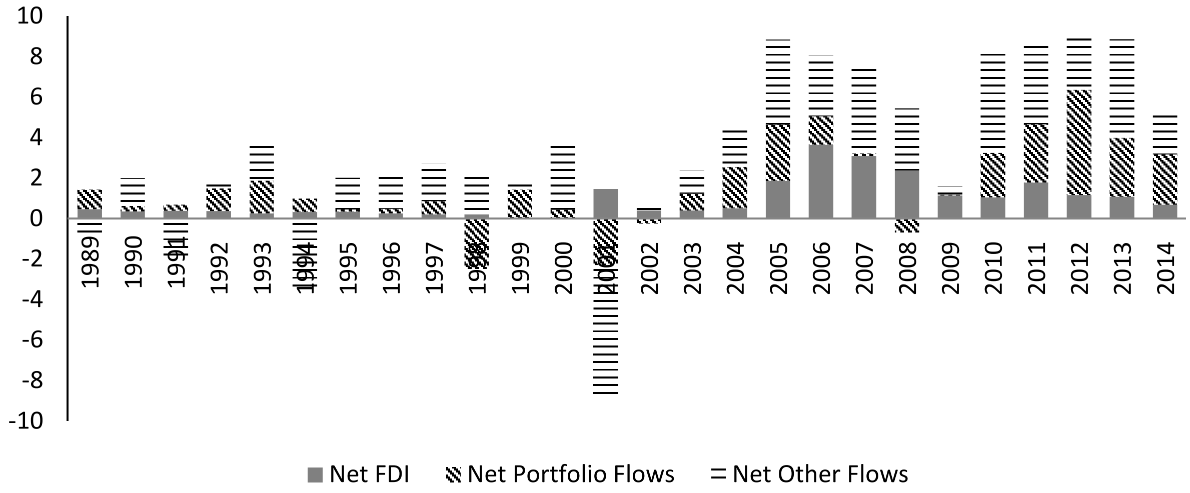
Figure 8: Net Financial Flows, % of GDP



Source: CBRT Data and World Bank World Development Indicators

Beside chronic current account deficits and deterioration of the composition of financial flows, the fluctuation in TL has been relatively high as well. The Turkish Lira is one of the most volatile currencies among developing countries (Benlialper, Comert and Düzçay, 2015). This would increase uncertainty and, as will be discussed below, deteriorate inflation performance of the Bank.

Overall, when we look at the general picture, at best, the overall performance of the Bank is mixed. Although inflation has been relatively under control, other main macroeconomic variables especially some fragility indicators such as the composition of financial flows do not give good signals about the effectiveness of the Bank.

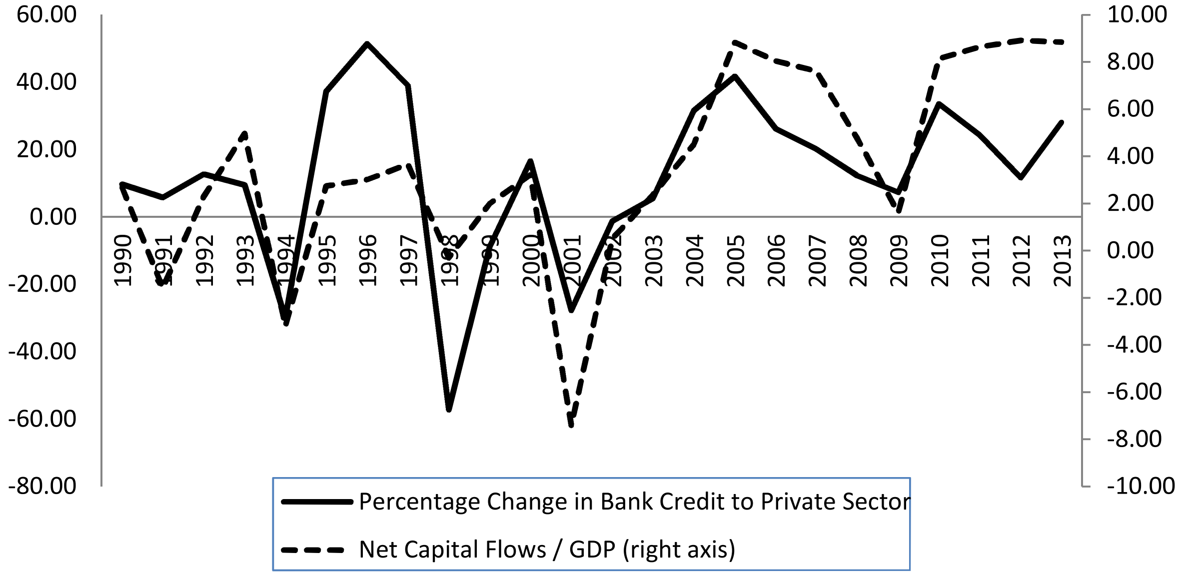
Global Constraints to the Effectiveness of the CBRT

The CBRT has begun paying considerable amount of attention to these vulnerabilities within the new framework it developed in response to the crisis. However, the Bank's ability to exert influence on key variables seems to have been restrained by factors outside of its control. As accepted by many publications of the Bank (Kara 2012 and Alper, Kara and Yörükoğlu 2013), financial flows exert great influence on key macroeconomic variables that the Bank monitors closely. In this sense, the movements in the main intermediate targets such as credit growth and exchange rates have been under the influence of financial flows. Furthermore, energy prices are among the key determinants of inflation in Turkey. As a result, the Bank's influence on growth and inflation through intermediate variables became a daunting task. The next part will focus on forces restraining the ability of the Bank to implement an independent monetary policy.

Figure 9 demonstrates that financial flows have had close affinity with credit expansion. It is obvious that domestic credit growth moves together with financial flows. On the one hand, financial flows would affect credit growth through its impact on credit generating capacity of the banking system considerably. On the other hand, credit growth may have direct influence on financial stability through its impact on current account and the healthiness of the balance sheets of firms and households. Credit growth may also have some impact on inflation through aggregate demand. Considering the importance of credit growth for various reasons, the CBRT attempted to keep credit growth under control. For this purpose, it began aiming at 15 percent credit growth within the new framework by using its required reserve policy and liquidity policy (Alper, Kara and Yörükoğlu 2013). However, under the influence of volatile financial flows, the effectiveness of this policy would not be very easy to establish.

Financial flows may also have a huge impact on exchange rates, one of the most important asset prices in developing countries, by altering supply and demand conditions in foreign exchange markets. Exchange rates may have indirect and direct effects on both inflation and financial stability. Furthermore, changes in exchange rates may have significant impact on current account and balance sheets of especially firms which have assets/liabilities in the form of foreign currency on their balance sheets.

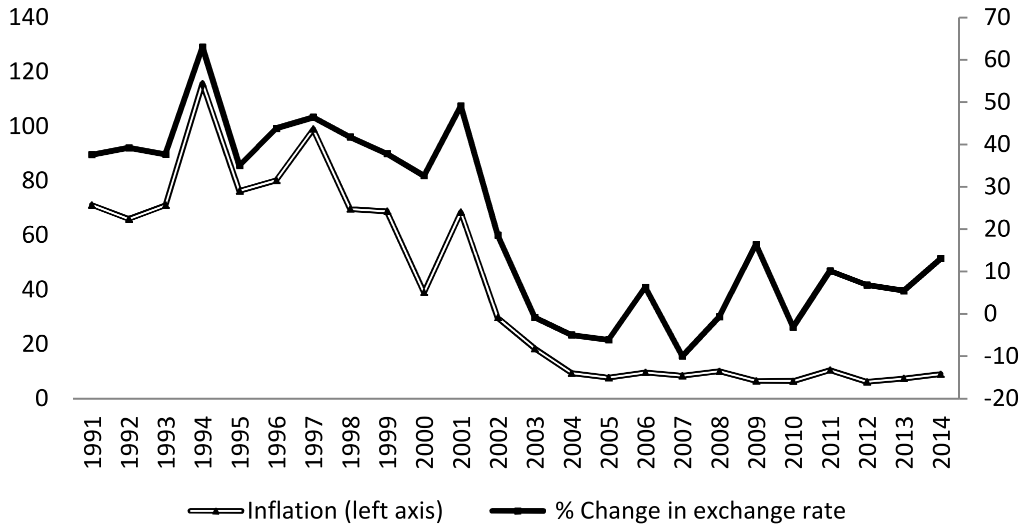
Figure 9: Credit Growth and Financial Flows



Source: World Bank: World Development Indicators, IMF: IFS.

Depreciation in domestic currency may be translated into domestic prices through higher imported goods prices. In this vein, energy and raw material dependent countries may be significantly affected by exchange rate changes. Kara and Ogunc (2005) find that the speed and the size of pass through decreased in the Turkish case under IT. Indeed, as Figure 10 demonstrates, the movement between exchange rates and inflation seems to have decreased after 2002. The simple correlation between aforementioned variables was 0.8 in the period 1991-2001, whereas that decreased to about 0.3 in the period 2002-2014. However, using a VAR model Benlialper and Comert (2013) demonstrate that commodity prices and exchange rates are still the main determinants of inflation in Turkey. This is not only applicable to the Turkish case, rather many developing countries have similar structural issues. Furthermore, as Kara and Ogunc (2005) documents, the decline in the pass through was related to benign conditions in exchange markets. The total pass through might have been higher in response to a persistent depreciation trend in the domestic currency. In other words, the pass through would play an important role in a situation in which there is a long-lasting depreciation trend in the economy. In this vein, considerable recent deprecation trend in TL may bring about higher pass through. Under these conditions, trends in inflation would not be easily affected by the Bank unless the Bank has some impact on the movements of exchange rates.

Figure 10: Relationship between Exchange Rate and Inflation[10]



Source: CBRT Statistics

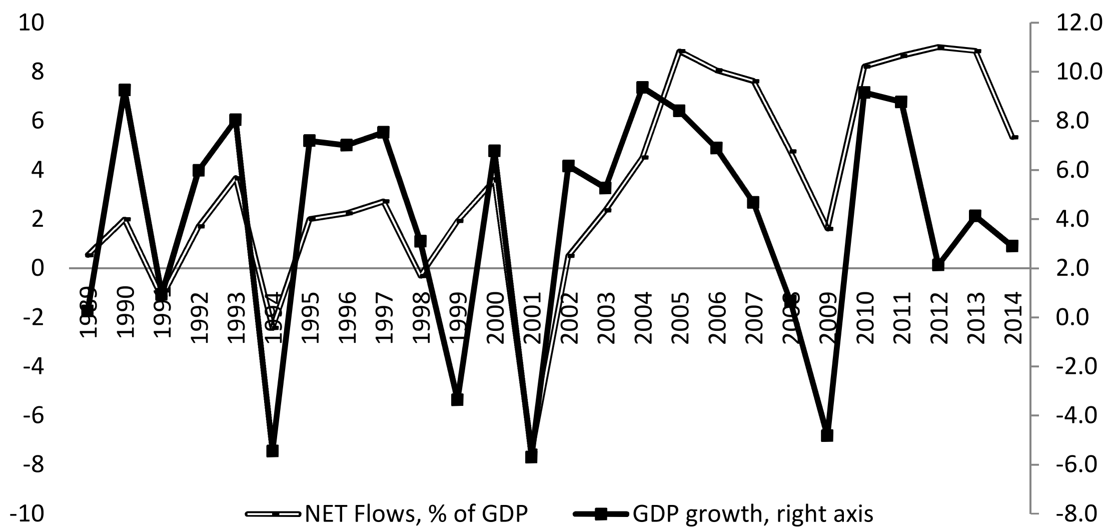
Given the importance of financial flows in credit creation and exchange rates, the Turkish economy has been very sensitive to the movements in financial flows. A strong boom-bust cycle mostly linked to the movements in financial flows has been very obvious in Turkish GDP growth. As Figure 11 shows, during the time of high inflows, Turkey experienced high growth. On the other hand, economic downturns are mostly associated with financial reversals. For example, the crisis of 1994, 2001 and 2009 coincide with either massive financial reversals or very significant financial stops.

Although financial flows have been very crucial for the economy, it is very difficult for the Bank to affect the magnitude and direction of the flows. Domestic factors would play some roles in this process. Nevertheless, the magnitude and direction of flows seem to be

[10] In the calculation of change in exchange rate the average annual value of dollar against Turkish Lira was used.

mainly related to global risk perception determining the worldwide liquidity conditions rather than domestic factors. Figure 12 depicts the relationship between VIX, an indicator for global risk perception, and financial flows to Turkey. There seems to be a very high correlation (in absolute terms) between the flows to the economy and global risk perception.

Figure 11: Financial Flows and GDP Growth

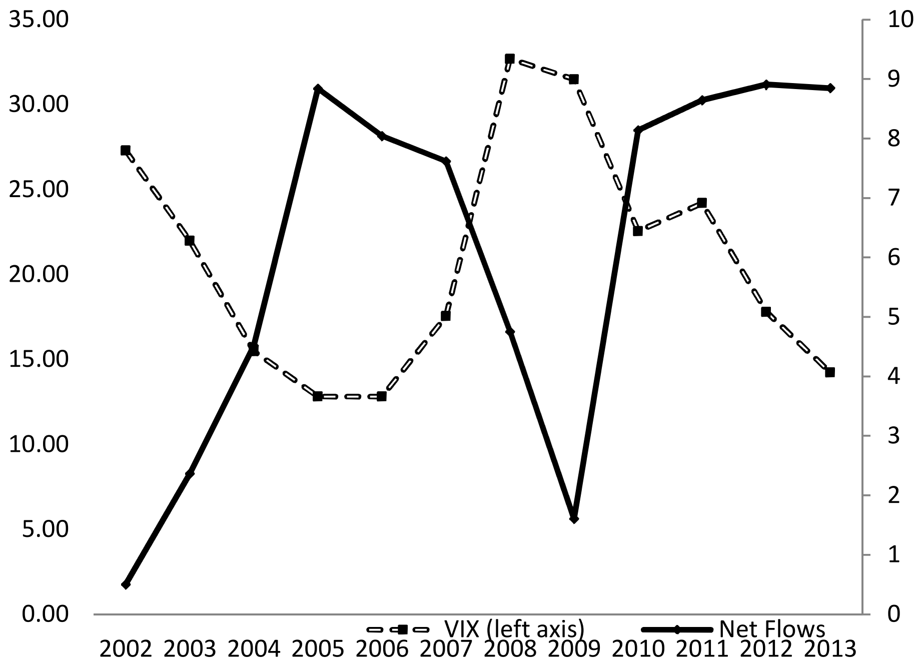


Source: CBRT Statistics, World Bank, World Development Indicators,

As Rey (2013) rightly argues, in a world in which financial flows are affected by global risk appetite, developing countries may not easily implement independent monetary policy. This claim would be much more valid for countries similar to Turkey with high current account deficits that rely on raw materials and intermediate goods for its production as a result of which important variables become very vulnerable to movements in financial flows and energy prices.

Although financial flows would not be much affected by the policies of central banks of the countries similar to Turkey, the Fed and ECB policies may exert significant impact on financial flows to these countries. Rey (2013) and others show that VIX is very sensitive to changes in the Fed interest rate. Accordingly, Turkey and similar countries are exposed to changes in the policy stance of the Fed and ECB to a great extent.

Figure 12: Financial Flows and Global Risk Perception



Source: CBRT Statistics, World Bank, World Development Indicators, and St Louis Fed's Data Base

Under these conditions central banks may not set their official interest rates independent of interest rates in advanced countries. Indeed, our VAR analysis exercise supports this argument for the Turkish case. We investigated the reaction of CBRT's interest rates to different developments in output gap, deviation of inflation from the inflation target, nominal effective exchange rate (NEER) and policy rate changes of FED and ECB. Through Variance Decomposition (VDC), VAR methodology allows us to answer how much of the variance in Turkish policy rate is explained by these variables. We will construct two different VAR models in which FED's and ECB's policy rate decisions are included in the model separately. The VAR model has the following form:

$$y_t = \propto_0 + \propto_1 y_{t-1} + \cdots + \propto_m y_{t-m} + u_t \qquad (1)$$

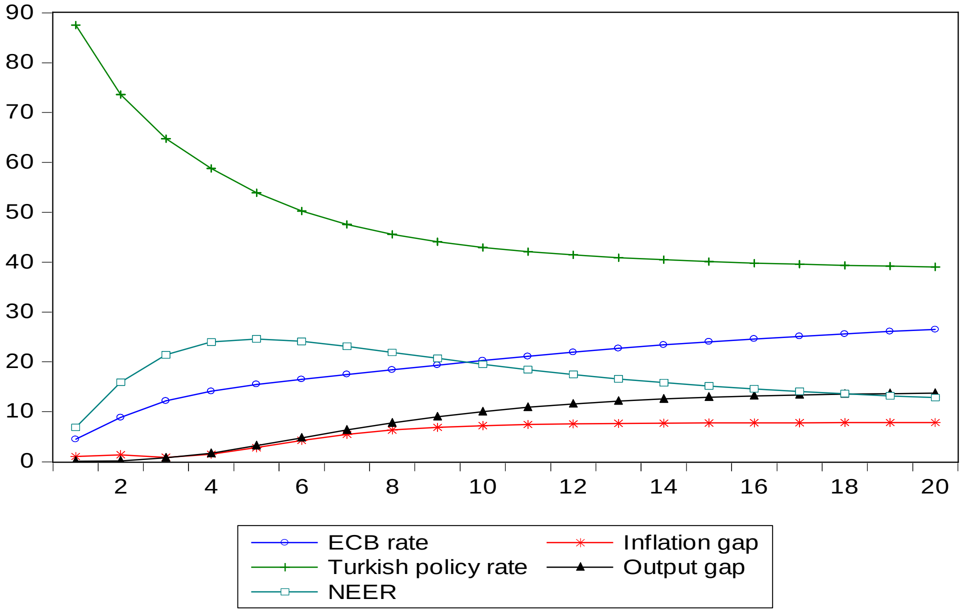
where y_t is the vector of endogenous variables including FED/ECB policy rate (FED_t/ECB_t), inflation gap (π_t^g), output gap (y_t^g), nominal effective exchange rate (e_t), and Turkish policy interest rate ($CBRT_t$).

We estimate both VAR models using three lags which are offered by the Akaike Information Criteria. The data and the details of the methodology are given in Appendix. Having estimated both models, we then analyze VDC of interest rate for this model using Cholesky decomposition. Figure 13 shows the VDC results[11] . VDC gives us the relative contribution of different variables to changes in interest rate. According to the evidence, ECB interest rate explains 26 percent of the variations in interest rate which is more than other variables excluding the lag values of interest rate variable itself. The interest rate smoothing characteristics of the Banks is evident from high explanatory power of lag values of interest rate variable[12]. Furthermore, it is also evident that the CBRT responds to changes in exchange rate considerably.

[11] The details of the graphs can be found in VDC table (Tables A1 and A2) in appendix. The ordering used in the VDC analysis is: ECB interest rate, output gap, inflation gap, NEER, Turkish policy interest rate. Theoretically, this ordering is very plausible. However, other orderings do not change the results much.

[12] The results also indicate that specification of the ordering of variables does not alter the results significantly.

Figure 13: Variance Decomposition of Turkish policy rate in the VAR including ECB rate



When we repeat the same exercise with the Fed interest rate, the conclusion does not change much. However, since the Fed rate has not been changed much since the mid 2008 and there were some important changes in its interest rate policy setting after 2008, we focused on the period 2002-2008 in the regression analysis including the Fed rate. Figure 14 shows VDC results for the VAR with the Fed interest rate[13]. It shows that in the short run, the exchange rate consideration is very important for the CBRT. The importance of the Fed rate increases throughout time and became the second important variable in explaining the Turkish rate after 6 months. Overall, it is apparent that the Turkish official interest rates are very sensitive to developments in interest rates in advanced countries which can be considered as a sign of a constrained monetary policy.

[13] The ordering used in VDC is: Federal Funds rate (Target), output gap, inflation gap, NEER, Turkish policy interest rate.

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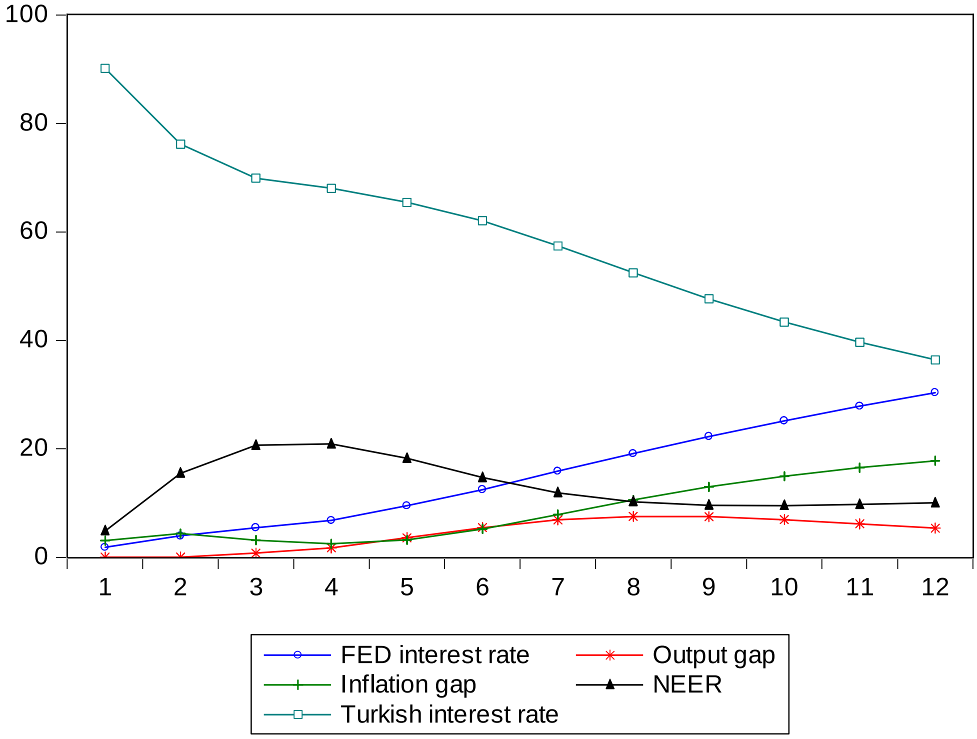
Figure 14: Variance Decomposition of Turkish policy rate in the VAR including FED rate



Moreover, we conduct Granger causality tests between Turkish policy rate and ECB interest rate up to six lags. The results are given in Tables in Appendix. These results indicate that for all lags ECB policy rate Granger causes Turkish policy rate for 5% significance level whereas the reverse is not true. When we repeat the same exercise with the Fed interest rate, the results do not change. As a result, these econometric findings support that, as expected, the causality runs from the interest rates from the advanced countries to the Turkish interest rate, not vice-versa. In other words, interest rates in advanced countries play a key role in interest rate setting decision of the CBRT.

In addition to the impact of FED and ECB policy rates on Turkish interest rate decisions, the policies implemented by the ECB and the Fed after 2008 have put significant pressure on exchange rates in Turkey and many other countries due to increasing global liquidity stemmed from unconventional policies of these countries as well.

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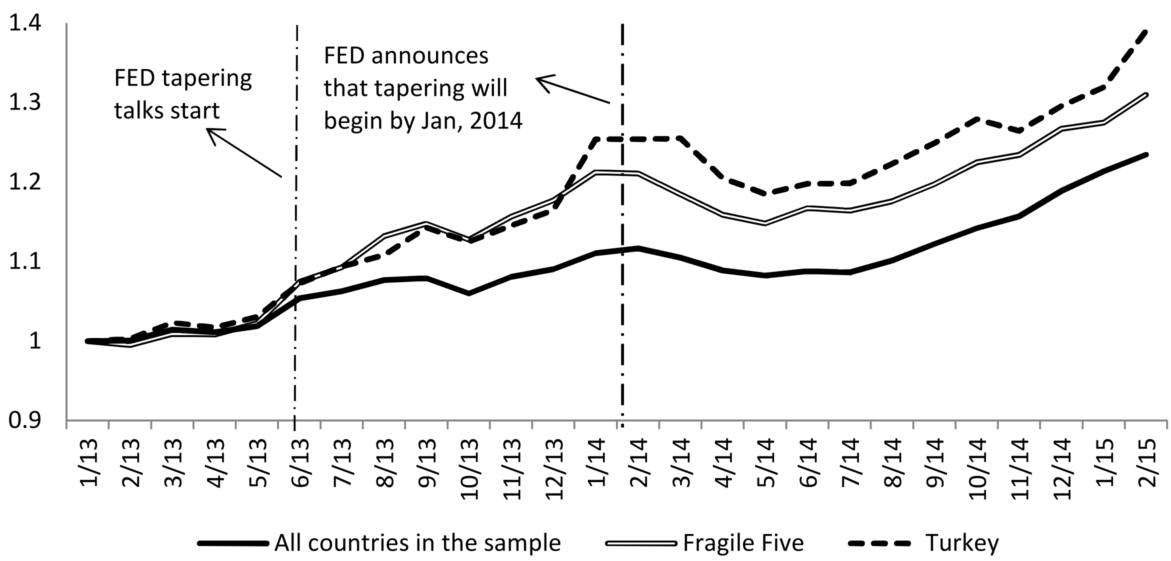
Indeed, financial flows to Turkey exceeded pre-crisis levels from 2010 to 2013. In line with this development, the depreciation of TL stopped in this period. However, the rumors about the Fed tapering, as Figure 15 demonstrates, brought about a significant depreciation trend in majority of developing countries including Turkey[14]. The depreciation trend was very strong especially in fragile five. As one of the members of fragile five, Turkey felt the implications of the change in the policy stance in advanced countries more than others. In this vein, accumulated vulnerabilities together with some tensions in Turkish politics have distinguished the Turkish currency from other currencies since the end of 2013. This can be another indication of the fact that it would be difficult for the Bank to influence main variables which are very crucial for reaching its targets.

Figure 15: The Impacts of Tapering News on Turkish Currency



Source: IMF, IFS Statistics

The impacts of tapering of US quantitate easing have been wildly discussed. However, the possible impacts of ECB's new monetary program can make the situation much more

[14] Here, our sample consists of the following countries: Brazil, Chile, Colombia, Czech Republic, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Peru, Philippines, Poland, South Africa, Thailand and Turkey. Following Aizenman et. al (2014), we set the dollar exchange rate of each country equal to 1 for the beginning of 2013. Then we take the average of the index across countries.

complicated. After being accused of very passive relative to the Fed, the ECB finally announced a quantitative easing policy in March 2015. This is about seven years after the initial implementation of quantity easing by the Fed. The bank is planning to purchase 60 billion dollar worth of public and government bonds each month at least until September 2016. Since it is a very recent program, it is very difficult to have a good picture about the implications of the program for Turkey and other countries. However, the impacts of the rumors about the Fed tapering can give us some clues. In this vein, if the US tapering is augmented by the ECB's tapering, the Turkish economy and similar economies may find themselves in a very difficult situation.

Conclusion

Central banks around the world have significantly changed since the 1980s in relation to changes in domestic and international financial markets. There has been important policy shifts in the monetary policy of the CBRT as well. Its monetary policy became much more indirect through open market operations rather than direct credit and interest rate policies. As in the case of many developing countries, monetary targeting and exchange rate pegs were integral part of its policy agenda. However, the CBRT could not follow a proper monetary policy till 2002 due to mainly its role in financing government deficits. After the financial crisis of 2001, considerable banking and fiscal reforms were implemented. In this process, the CBRT became independent and began following IT under the guidance of the IMF. The program was successful especially in curbing high inflation though important fragilities such as large current account deficits emerged in the economy. The Bank became much more experimental with non-conventional policies in response to the global crisis. Although it prepared an exit strategy, new policy framework with new instruments became permanent after the end of 2010.

Nowadays, new monetary policy framework has put more emphasis on financial stability concerns. The CBRT has developed many creative ways to target more than one variable. However, key variables the Bank wants to influence within the new framework are very sensitive to developments especially in financial flows. Financial flows are much affected by external factors such as VIX rather than domestic policies. Furthermore, global conditions can be sensitive to policies in advanced countries. In this situation, the CBRT has to respond to interest rate policies in advanced countries. Indeed, our simple VAR analysis demonstrates that the CBRT rate is highly influenced by the Fed and ECB rates. In other words, the Bank is constrained by policies in advanced countries even under a flexible exchange rate regime. This restricts the ability of the Bank to have an effective monetary policy[15].

Is there any role of European integration process in the constrained central banking in Turkey? As mentioned before, Turkey became a candidate country for the European Union in 2005. This process has not made significant changes for central banking in Turkey. The Turkish economy has been already part of the custom union since 1995. Furthermore, as discussed, financial flows have been fully liberalized in 1989. As discussed in the text, financial flows have complicated the job of the Bank considerably.

The decisions of main central banks including ECB and the Fed have been affecting CBRT especially through their impacts on financial flows. Nevertheless, regardless of Turkish candidacy for the European Union, this channel has been valid for Turkey and similar economies. However, if Turkey becomes a part of the Eurozone, this may have very deep implications for the CBRT. First, the eligibility of Eurozone membership requires stable exchange rate for at least two years before the entry. As discussed before, this may be a daunting task for the CBRT. Furthermore, if Turkey meets all the requirements of the Eurozone membership, it will lose already constrained monetary policy capability. Given especially the notorious example of Greece and reluctance of the ECB to take necessary measures in case of emergency, the advantages and disadvantages should be carefully assessed before taking any decisions in this direction.

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[15] Given the recent political pressure on the Bank to decrease its policy interest rates, the Bank's maneuver capacity might have weakened further. Under emerging vulnerabilities and political pressure, a relatively big financial reversal may wipe out all the achievements of the Bank since 2002.

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Appendix

Data and Methodology

We use monthly data to estimate our models. The data covers the period between February 2002 and December 2014 hence we have 155 observations for each of the six variables in our models. The data for ECB policy rate is taken as the arithmetic mean of deposit facility rate and marginal lending facility rate for each associated month. FED policy rate is taken as the Federal Funds target rate announced after each FOMC meeting. The mean of overnight borrowing and lending interest rate declared by the CBRT is taken as the policy interest rate in Turkey. As a proxy of output gap, we calculated the percentage difference between the seasonally adjusted (through X-12 method) monthly industrial production index released by the Turkish Statistical Institute and the trend of industrial production calculated through Hodrick-Prescott filter[16]. Data for NEER is obtained from BIS using 2010 as the base year. Finally, inflation gap is taken as the difference between annual inflation at time (month) t and the appropriate value of the target inflation at time t[17].

Calculation of Inflation Targets

The method to calculate inflation target of the CBRT at a given month is as follows: Consider we are at the beginning of year t. First, the difference between the inflation target for the year t (π_t^*) and the actual end year inflation of the year $t-1$ (π_{t-1}) is divided by 12. Then, monthly inflation targets are defined as:

$$\pi_{t,i}^* = \pi_{t,i-1}^* - (\pi_{t-1} - \pi_t^*)/12$$

with

$$\pi_{t,1}^* = \pi_{t-1} - (\pi_{t-1} - \pi_t^*)/12$$

where $i = 2,3, \dots 12$ represents the months at year t and $\pi_{t,i}^*$ represents the inflation target of the central bank at month i of the year t.

[16] $y_t^g = (y_t - y_t^t)/y_t^t$ where y_t is the seasonally adjusted monthly industrial production and y_t^t is the trend value of y_t at time t.

[17] Construction of the targeted inflation at a given time is given in the appendix.

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Tables

Table A1. Variance Decomposition of Turkish policy rate.

Period	S.E.	ECB interest rate	Inflation Gap	Turkey – Interest rate	Output Gap	NEER
1	0.130414	4.468307	1.031045	87.52984	0.089446	6.881356
2	0.215821	8.884763	1.398539	73.63885	0.144667	15.93318
3	0.286900	12.18594	0.861482	64.76238	0.752975	21.43722
4	0.352024	14.10879	1.473818	58.80537	1.643688	23.96834
5	0.410953	15.47382	2.810121	53.90468	3.223503	24.58788
6	0.465513	16.52223	4.282977	50.30024	4.767485	24.12707
7	0.515660	17.48584	5.468988	47.56468	6.355713	23.12477
8	0.562027	18.42259	6.322539	45.57507	7.755315	21.92449
9	0.604809	19.35196	6.877147	44.08361	8.995255	20.69203
10	0.644387	20.25845	7.226016	42.96615	10.02942	19.51996
11	0.681028	21.12626	7.438378	42.10405	10.88756	18.44375
12	0.715033	21.94132	7.569996	41.43153	11.58016	17.47700
13	0.746661	22.69683	7.653854	40.89589	12.13592	16.61751
14	0.776160	23.39109	7.710948	40.46478	12.57517	15.85802
15	0.803746	24.02659	7.752198	40.11310	12.91985	15.18826
16	0.829615	24.60795	7.783658	39.82362	13.18677	14.59799
17	0.853936	25.14086	7.808140	39.58268	13.39090	14.07742
18	0.876862	25.63100	7.827130	39.38004	13.54400	13.61783
19	0.898520	26.08374	7.841376	39.20741	13.65595	13.21153
20	0.919027	26.50381	7.851420	39.05826	13.73466	12.85185

Ordering: ECB interest rate, output gap, inflation gap, NEER, Turkish policy interest rate

Table A2. Variance Decomposition of Turkish policy rate.

Period	S.E.	FED interest rate	Output gap	Inflation gap	NEER	Turkey – interest
1	0.253420	1.845361	0.000278	3.086524	4.903641	90.16420
2	0.374423	3.942598	0.000434	4.379285	15.48253	76.19515
3	0.473345	5.481265	0.777870	3.179375	20.63492	69.92657
4	0.576553	6.816479	1.739429	2.495490	20.87610	68.07250
5	0.675235	9.498274	3.599787	3.199385	18.25702	65.44554
6	0.772393	12.52101	5.472728	5.230450	14.73148	62.04433
7	0.865202	15.86812	6.883066	7.895255	11.89218	57.46139
8	0.952875	19.14884	7.526619	10.59309	10.25601	52.47545
9	1.034414	22.25760	7.467118	12.98232	9.609647	47.68332
10	1.109289	25.16468	6.941837	14.96041	9.548937	43.38414
11	1.177276	27.86381	6.188220	16.54711	9.756057	39.64480
12	1.238387	30.35948	5.389634	17.79565	10.04197	36.41326

Ordering: Federal Funds rate (Target), output gap, inflation gap, NEER, Turkish policy interest rate

Table A3. Pairwise Granger Causality Tests
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
ECB INTEREST RATE does not Granger Cause TURKISH INTEREST RATE	154	4.72485	0.0313
TURKISH INTEREST RATE does not Granger Cause ECB INTEREST RATE		0.69706	0.4051

Table A4. Pairwise Granger Causality Tests Pairwise
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
ECB INTEREST RATE does not Granger Cause TURKISH INTEREST RATE	153	4.32835	0.0149
TURKISH INTEREST RATE does not Granger Cause ECB INTEREST RATE		0.04511	0.9559

Table A5. Pairwise Granger Causality Tests
Lags: 3

Null Hypothesis:	Obs	F-Statistic	Prob.
ECB INTEREST RATE does not Granger Cause TURKISH INTEREST RATE	152	2.77663	0.0435
TURKISH INTEREST RATE does not Granger Cause ECB INTEREST RATE		0.43377	0.7291

Table A6. Pairwise Granger Causality Tests
Lags: 4

Null Hypothesis:	Obs	F-Statistic	Prob.
ECB INTEREST RATE does not Granger Cause TURKISH INTEREST RATE	151	3.22726	0.0144
TURKISH INTEREST RATE does not Granger Cause ECB INTEREST RATE		0.91919	0.4546

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Table A7. Pairwise Granger Causality Tests
Lags: 5

Null Hypothesis:	Obs	F-Statistic	Prob.
ECB INTEREST RATE does not Granger Cause TURKISH INTEREST RATE	150	2.75468	0.0210
TURKISH INTEREST RATE does not Granger Cause ECB INTEREST RATE		0.81213	0.5429

Table A8. Pairwise Granger Causality Tests
Lags: 6

Null Hypothesis:	Obs	F-Statistic	Prob.
ECB INTEREST RATE does not Granger Cause TURKISH INTEREST RATE	149	2.76047	0.0145
TURKISH INTEREST RATE does not Granger Cause ECB INTEREST RATE		2.14155	0.0525

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Financialisation, Economy, Society and Sustainable Development (FESSUD) is a 10 million euro project largely funded by a near 8 million euro grant from the European Commission under Framework Programme 7 (contract number : 266800). The University of Leeds is the lead co-ordinator for the research project with a budget of over 2 million euros.

THE ABSTRACT OF THE PROJECT IS:

The research programme will integrate diverse levels, methods and disciplinary traditions with the aim of developing a comprehensive policy agenda for changing the role of the financial system to help achieve a future which is sustainable in environmental, social and economic terms. The programme involves an integrated and balanced consortium involving partners from 14 countries that has unsurpassed experience of deploying diverse perspectives both within economics and across disciplines inclusive of economics. The programme is distinctively pluralistic, and aims to forge alliances across the social sciences, so as to understand how finance can better serve economic, social and environmental needs. The central issues addressed are the ways in which the growth and performance of economies in the last 30 years have been dependent on the characteristics of the processes of financialisation; how has financialisation impacted on the achievement of specific economic, social, and environmental objectives?; the nature of the relationship between financialisation and the sustainability of the financial system, economic development and the environment?; the lessons to be drawn from the crisis about the nature and impacts of financialisation? ; what are the requisites of a financial system able to support a process of sustainable development, broadly conceived?'

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THE PARTNERS IN THE CONSORTIUM ARE:

Participant Number	Participant organisation name	Country
1 (Coordinator)	University of Leeds	UK
2	University of Siena	Italy
3	School of Oriental and African Studies	UK
4	Fondation Nationale des Sciences Politiques	France
5	Pour la Solidarite, Brussels	Belgium
6	Poznan University of Economics	Poland
7	Tallin University of Technology	Estonia
8	Berlin School of Economics and Law	Germany
9	Centre for Social Studies, University of Coimbra	Portugal
10	University of Pannonia, Veszprem	Hungary
11	National and Kapodistrian University of Athens	Greece
12	Middle East Technical University, Ankara	Turkey
13	Lund University	Sweden
14	University of Witwatersrand	South Africa
15	University of the Basque Country, Bilbao	Spain

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